Appendix 18: Bibliography

In the bibliography, we have used some abbreviations due to the fact that the titles of some journals recur again and again. As a matter of fact, one particular journal has had three names over a period of years (Sewage Works Journal, Sewage and Industrial Wastes, and Journal of the Water Pollution Control Federation) and its value is reflected in the fact that, time and again, useful and applicable research has been published in its pages.

The abbreviations are: Ind. Eng. Chem. = Industrial Engineering and Chemistry Sewage Ind. = Sewage and Industrial Wastes Sewage Works J. = Sewage Works Journal J. Water Pollu. Control Fed. = Journal of the Water Pollution Control Federation Abeles. 1977. Design Considerations for Anaerobic Farm Digesters. Minneapolis: i/e Associates. . 1980. A Farm Integrated Utility System (FIUS): A Study of Farm Energy Use. Minneapolis: i/e Associates. Abeles and Ellsworth. 1978. Task VI-Biological Production of Gas. Minneapolis: i/e Associates. Abeles, Freedman, DeBaere, and Ellsworth. 1978. Bibliography of Anaerobic Digestion. Minneapolis: i/e Asso-Abeles, Freedman, Ellsworth, and DeBaere. 1978. Energy & Economic Assessment of Anaerobic Digesters for Rural Waste Management. Minneapolis: i/e Associates. Acharya. 1935. Studies on the Anaerobic Decomposition of Plant Materials. IV: The Decomposition of Plant Substrates of Varying Compositions. Biochemical Journal 29: 1459. . 1958. Preparation of Fuel Gas and Manure by Anaerobic Fermentation of Organic Materials. Indian Council of Agricultural Research. Research Publication 15. Alexander. 1956. Chemical Control of Digester Scum. Sewage Ind. 28:931. Alich and Inman. 1976. Utilization of Plant Biomass as an Energy Feedstock. In Energy, Agriculture and Waste Management, p. 453. Ann Arbor: Ann Arbor Science Publishers. Althausen, Boruf, Buswell, and Symons. 1933a. Comments on Fair and Moore's Articles on "Heat and Energy Relations in the Digestion of Sewage Solids." Sewage Works J. 5:34. . 1933b. Additional Comments on Fair and Moore's Articles on "Heat and Energy Relations in the Digestion of Sewage Solids." Sewage Works J. 5:233. Ameen. 1974. Community Water Systems Source Book. n.p., Technical Proceedings. American Society of Heating, Refrigeration, and Air-Conditioning Engineers. n.d. American Society of Heating, Refrigeration, and Air-Conditioning Engineers Handbook of Fundamentals. New York. Andersen. 1943. Overhauling and Repairs to Methane Gasholder. Sewage Works J. 15:535. _. 1963. Audels Home Appliance Service Guide. Audels. Anderson, n.d. The Production of Methane From Manure. Microbiology Dept., Bio Science Bldg.) Oregon State Univ. Corvallis, OR 97330. Anonymous. n.d. Natural Gas Vehicle Project. Los Angeles: Dual Fuel Systems, Inc. _____. 1923. Hydraulics. In International Library of Technology, v. 190. Scranton, PA: Scranton International Textbook Co. ______. 1943. Tips and Quips: Instructions for Using Sludge Fertilizer. Sewage Works J. 15:754. . 1954. Dual Fuel Engines Show Economy at Lansing. Sewage Ind. 26:800. ______. 1955. Check Chart for Centrifugal Pump Troubles. Sewage Ind. 27:867. ______. 1973. Biomass Offers Renewable Energy Sources. Modern Power and Engineering (Canada). July. ______. 1974a. Methane Gas Generation from Agricultural Wastes. Folder 160, April, 1974. Cooperative

Extension Service, Montana University, Bozeman, MT 59715.

Costs. Diesel and Gas Turbine Progress, April.

___. 1974b. Sewage Plant Changes Carburetion Systems to Lower Maintenance and Operating

Aroian, et al, eds. 1958. Van Nostrand's Scientific Encyclopedia. New York: Van Nostrand and Co.

Auerbach. 1973. A Homesite Power Unit: Methane Generator. Madison, CT: Alternative Energy Systems.

Babbit and Bauman. 1958. Sludge Digestion. In Sewerage and Sewage Treatment, p. 581. New York: Wiley.

Bacon. 1944. Digester Heating and Mixing Equipment. Sewage Works J. 16:534.

Bakewell, et al. 1977. No Tanks. Rain: Journal of Appropriate Technology 3:12.

Banta and Pomeroy. 1934. Hydrogen Ion Concentration and Bicarbonate Equilibrium in Digesting Sludge. Sewage Works J. 2:234.

Bardoch, Ryther, and McLarney. 1972. Aquaculture: The Farming and Husbandry of Freshwater and Marine Organisms. New York: Wiley Interscience.

Barker. 1913. Barker on Heating: The Theory and Practice of Heating and Ventilation. New York: Van Nostrand.

Baumgartner. 1934. Effect of Temperature and Seeding on Hydrogen Sulfide Formation in Sewage. Sewage Works J. 6:399.

Baxter and Horlacher. 1954. Submerged Sludge Heating at Philadelphia's Northeast Works. Sewage Ind. 26:961.

Beinhauer. 1933. Use of Gas from Municipal Treatment Plants as Motive Power for Trucks. Sewage Works J. 5:728.

Bell, Boulter, Dunlop, and Keller. 1973. Methane: Fuel of the Future. Andrew Singer.

Bernard, Denit, and Anderson. 1971. Effluent Discharge Guidelines and Animal Waste Management Technology. In Animal Waste Management. Virginia, Arlie House.

Bigger. 1974. 350 Valley Homes Get Electricity from Landfill. Southern Sierran 29:5.

Bio-Energy Council. 1979. Bio-Energy Directory. 1625 Eye St. N.W., Suite 825A, Washington, D.C. 20006.

Black. n.d. Pumps. n.p., Audel and Co.

_____. 1930. Fermentation Products from Cornstalks. *Ind. Eng. Chem.* 22:931.

______. 1934. The Anaerobic Fermentation of Lignin. J. of the American Chemical Society 56:886.

Boshoff. 1963. Methane Gas Production by Batch and Continuous Fermentation Methods. Tropical Science 5:155.

______. 1967. Reaction Velocity Constants for Batch Methane Fermentation on Farms, Notably in the Tropics. *J. of Agricultural Science (Gt. Brit.)* 68:347.

Braithwaite and Capener, n.d. The Feasibility of Methane Production From Dairy Animal Wastes: The Farmer's Perspective. Department of Rural Sociology, State Col. of Agri. & Life Sci., Cornell Univ., Ithaca, N.Y. 14853.

Braker and Mossman. 1971. Matheson Gas Data Book. n.p., Matheson Gas Products.

Bunsen. 1857. Physical and Chemical Properties of Gases. London: Walton and Moberly.

Burford and Varani. n.d. Methane on the Move, Energy Potential Through Bio-Conversion of Agricultural Wastes. Loveland, CO: Bio-Gas of Colorado.

Burlew, ed. 1953. Algal Culture from Laboratory to Pilot Plant. Publication 600. Washington, D.C.: Carnegie Institute of Washington.

Buswell. 1929. Control of Scum in Sewage Tanks. Ind. Eng. Chem. 21:322.

_____. 1930. Production of Fuel Gas by Anaerobic Fermentation's. Ind. Eng. Chem. 22:1168.

Buswell and Boruff. 1929. Fermentation Products of Cellulose. Ind. Eng. Chem. 21:1181.

______. 1932a. The Relation Between the Chemical Compositions of Organic Matter and the Quality and Quantity of Gas Produced During Sludge Digestion. Sewage Works J. 4:454.

__. 1932b. Patent for Fibrous Waste Generator. U.S. Patent 1880 772, October 4, 1932.

______. 1933. Mechanical Equipment for Continuous Fermentation of Fibrous Materials. *Ind. Eng. Chem.* 25:147.

Buswell, Pagano, and Sollo. 1949. Effect of Sodium Sulfate and Chloride on Methane Fermentation. Ind. Eng. Chem. 41:596.

Buswell, Boring, and Milam. 1960. A Paper Chromotographic Method for Volatile Acids. J. Water Pollu. Control Fed. 32:721.

Buswell and Sawyer. 1963. Biochemical v.s. Physical Factors in Digester Failure. J. Water Pollu. Control Fed. 35:205.

Bylinsky and Schuyten. 1976. Green Plants Might Provide the Cheapest Energy of All. Fortune Sept., 1976,p.152.

Canada Animal Waste Management Guide Committee. 1972. Canada Animal Waste Management Guide. n.p., Canada Committee of Agriculture.

Cassell and Sawyer. 1959. A Method of Starting High-rate Digesters. Sewage Ind. 31:123.

Chan. 1970. Hydrolysis Rate of Cellulose in Anaerobic Fermentation. Report 70-3. Berkeley, CA: Sanitary Engineering Research Laboratory, University of California.

Charpentier. 1902. Timber. n.p., Scott Greenwood and Co.

Chung Po. n.d. Production and Use of Methane from Animal Wastes in Taiwan. Taipei, Taiwan: Joint Commission on Rural Restoration.

______. n.d. Swine Wastes and Methane. Taipei, Taiwan: Joint Commission on Rural Reconstruction.

Cobb. 1963. Islamic Contributions to Civilization. Washington, D.C.: Avalon.

Coffey. 1973. "Briton Runs Car on High-Octane and Pollution-Free Pig Manure." Los Angeles Times, May 2, 1973.

Coker. 1966. The Value of Liquid Digested Sewage Sludge. J. Agricultural Science Jan.: 91-107.

Corin. 1965. Professional Engineers Examination: Chemical Engineering. Fall River, MA: Aero.

Cravath and Lansing. 1907. Practical Illumination. New York: McGraw.

Crooks. 1949. The Dual Fuel Engine and its Application to Sewage Treatment Plants. Sewage Works J. 21:957.

Cross and Bevan. 1902. "Researches on Cellulose." n.p.

Crouch. 1972. The Autonomous Servicing of Dwellings-Design Proposals. Cambridge, England: Department of Architecture, Technical Research Div., University of Cambridge.

Dale. 1971. Status of Dairy Waste Treatment and Management Research. Animal Waste Management Sept. :85.

Dalrymple and Proctor. 1967. Feasibility of Dairy Manure Stabilization by Anaerobic Digestion. Water Sewage Works Dec.: 361

Davis. 1966. Cattle-Manure Handling and Disposal Systems on the West Coast. In Management of Farm Animal Wastes. ASAE Publication SP-0366. American Society of Agricultural Engineers.

DiLallo and Albertson. 1961. Volatile Acids by Direct Titration. J. Water Pollu. Control Fed. 33:356.

Dobbins. 1962. Mechanism of Gas Absorption by Turbulent Liquids. J. Water Pollu. Control Fed. 34:245.

Duggan. 1950. "Pilot Plant Production of Methane by Anaerobic Fermentation of Pear Waste." Master's thesis, Oregon State University.

Dunkley. 1921. Some Conditions Affecting the Usefulness of Iron Oxide for City Gas Purification. Bulletin 119. University of Illinois Engineering Experiment Station, Urbana, IL.

Dunlop. 1968. Survival of Pathogens and Related Disease Hazards in Municipal Sewage Effluent for Irrigation. Louisiana Tech. Alumni Foundation, Box 1, Tech. State, Ruston, LA 71270.

Dye. 1973. "Garbage Dump Has Lighted Christmas Tree – and It's a Gas." Los Angeles Times, Dec. 2, 1973.

Eby. 1966. Evaluating Adaptability of Pasture Grasses to Hydroponic Culture and Their Ability to Act as Chemical Filters. In Farm Animal Wastes Symposium, May 5-7, 1966, p. 117.

Ecotope Group. 1976. Report on the Design and First Year Operation of a 50,000 Gallon Anaerobic Digester at the State Honor Farm Dairy, Monroe, Washington. 2332 E. Madison, Seattle, WA 98112.

Elder and Buswell. 1929. Changes of Sulfur Compounds During Sewage Treatment. Ind. Eng. Chem. 21:560.

Eliassen. 1951. 1951 Industrial Wastes Forum (Application of Submerged Combustion). Sewage Ind. 24:867.

Emerich. n.d. Heating Handbook. New York: McGraw-Hill.

Epstein. 1972. Mineral Nutrition of Plants: Principles and Perspectives. New York: Wiley.

Fair. 1934. Time and Rate of Sludge Digestion, and Their Variations with Temperature. Sewage Works J. 6:3.

1934h	Digestion	of Garbage.	Servage	Morks 1	6.259
. LJJ+U.	ווטונסטנטו	OI CIALDAYE.	DEWAYE	. v vuina i	. U.Z.J.J.

Fair and Moore. 1930. Observations on the Reliability of Different Methods for Determining the pH of Sewage Sludge. Sewage Works J. 2:3.

_____. 1932a. Heat and Energy Relations in the Digestion of Sewage Solids I. Sewage Works J. 4:242.

. 1932b. Heat and Energy Relations in the Digestion of Sewage Sludge II. Sewage Works J. 4:428.

Finney, Evans, and Finney. 1976. Fast Production of Methane by Anaerobic Digestion: Quarterly Report, May 24, 1976 August 23, 1976. Natural Dynamics Publication #COO-2900-5. Des Moines, IA: Natural Dynamics.

Fischer. 1929. Separate Sludge Digestion Studies. Sewage Works J. 1:236.

Fischer, Sievers, and Fulhage. 1976. Anaerobic Digestion in Swine Wastes. In Energy, Agriculture and Waste Management, p. 307. Ann Arbor, MI: Ann Arbor Science Publishers.

Fong. 1973. Methane Production from Animal Wastes by Anaerobic Decomposition. Master's thesis, University of Manitoba.

Foot, et al. 1976. Studies on Livestock Wastes. n.p., Agricultural Research Council.

Fowler and Joshi. 1920. Studies on Vegetable Wastes. J. of the Indian Institute of Science 3:39.

Friedberg. 1972. How to Convert Your Auto to Propane-A Manual. Arrakis Volkswagen. (No current address. If anyone knows Jerry's address, please let us know. DH)

Frook. 1952. Removal of Carbon Dioxide from Digester Gas. Sewage Ind. 24:1473.

_____. 1957. Volatile Acids by Direct Phosphoric Acid Distillation. J. Water Pollu. Control Fed. 29:18.

Fry. 1974. Practical Building of Methane Power Plants for Rural Energy Independence. Standard Printing, 1223 No. Nopal, Santa Barbara, CA 93103.

Fry and Merrill. 1973. Methane Digesters for Fuel Gas and Fertilizer. Woods Hole, MA: New Alchemy Institute.

Fuhrman. 1954. Scum Control in Sludge Digestion. Sewage Ind. 26:453.

Fulweiler. 1930. Use of Sewage Gas as City Gas. Sewage Works J. 2:424.

Gaddy, Park, and Rapp. 1974. Kinetics and Economics of Anaerobic Digestion of Animal Waste. Water, Air and Soil Pollution 3:161.

Gallese. 1977. "Garbage Power." Wall Street Journal, Aug. 4, 1977.

Geigy Pharmaceuticals, eds. 1956. Documenta Geigy — Scientific Tables. n.p.: Geigy Pharmaceuticals.

Gerdel. 1946. Digestion Tank Scum. Sewage Works J. 18:543.

Gerhard. 1908. The American Practice of Gas Piping and Gas Lighting in Buildings. New York: McGrawHill.

Gessel. 1960. Composting Wood Wastes with Other Organic Materials. Compost Science Spring: 26.

Ghosh, Conrad, and Klass. 1975. Anaerobic Acidogenesis of Wastewater Sludge. J. Water Pollu. Control Fed. 47:30.

Gill. 1917. Gas and Fuel Analysis for Engineers. New York: Wiley.

Golueke. 1960. Composting Manure by Anaerobic Methods. Compost Science Spring: 44.

_____. 1963. Power from Solar Energy Via Algae-Produced Methane. Solar Energy 7:86.

______. 1971. Closed Waste Treatment System for High Intensity Animal Production. Waste Age Mar/Apr: 10.

______. 1972. Composting: A Study of the Process and Its Principles. Emmaus, PA: Rodale.

Golueke and Oswald. 1959. Biological Conversion of Light Energy to the Chemical Energy of Methane. Applied Microbiology 7:219.

______. 1965. Harvesting and Processing Sewage-Grown Planktonic Algae. J. Water Pollu. Control Fed. 37:471.

Goodman. 1974. Methane Gas Generators. n.p.: Fallbrook Farms.

Gotaas. 1956. Composting: Sanitary Disposal and Reclamation of Organic Wastes. Geneva: World Health Organization.

Green. 1961. International and Metric Units of Measurement. New York: Chemical Publishing Co.

Griswold. 1946. Fuels, Combustion and Furnaces. New York: McGraw-Hill.

Grime and Sload. 1954. Biocatalysts in Sludge Digestion. *Sewage Ind.* 26:1425.

Gunson. n.d. Sludge, Heating and Circulation by Direct Steam Injection. Sewage Works J. 19:66 1.

Hagglund. 1951. Chemistry of Wood. New York: Academic.

Hammer and Borchardt. 1969. Dialysis Separation of Sewage Sludge Digestion. J. of Sanitary Engineering Division. Proceedings of the American Society of Civil Engineers SA5:907.

Hammerton. 1945. The Corrosion of Cement and Concrete. Sewage Works J. 17:403.

Harnik. 1948. A Preliminary Investigation on Methane Gas Production from Pear Waste. Master's thesis, Oregon State University.

Harris. 1912. Talks on Manures. n.p., Orange Judd Co.

Hart. 1963. Digestion Tests of Livestock Wastes. J. Water Pollu. Control Fed. 35:748.

Hart, Moore, and Hale. 1966. Pumping Manure Slurries. In Management of Farm Animal Wastes. ASAE Publication SP. 0366. American Society of Agricultural Engineers.

Haskins. 1917. Compilation of Analysis of Agricultural Chemicals, Refuse Salts, Phosphates, Guanos, Ashes, Lime Compounds, Marls, Byproducts, Refuse Substances, Animal Excrements, Insecticides and Fungicides. Rhode Island Experiment Station, Bulletin #21.

Hass and Hill. 1928. Chemistry of Plant Products: Volume I. New York: Longmans Green.

Hatfield, Symons, and Mills. 1928. Gases from Sewage Sludge Digestion. Ind. Eng. Chem. 20:174.

Hatfield. 1938. Automatic Shutoff for Gas Still. Sewage Works J. 10:891.

_____. 1940. Safe Handling of Gas at Sewage Plants. Sewage Works J. 12:128.

Hauschka. 1950. The Nature of Substance. n.p.: Vincent Stuart.

___. 1951. Nutrition. n.p.: Stuart and Watkins.

Haseltine. 1933a. The Use of Sludge Digestion Gas for Power Production. Cause and Effect of Variations in Composition of Gas. Sewage Works J. 5:482.

______. 1933b. Comments on Rudolf's and Miles' Articles on "Heat Losses from Sludge Digestion Tanks." Sewage Works J. 5:844.

Hecking. 1940. Utilization of Sludge Gas for Power Production. Sewage Works J. 12:132.

Henry. 1961. Hydrogen Sulfide in Sludge Gas. J. Water Pollu. Control Fed. 33:140.

Heukelekian. 1929. Effect of Certain Pure Substances on Sludge Digestion. Sewage Works J. 1:545.

______. 1942. Effect of Yeast on the Stabilization of Sewage and Sludge Digestion. *Public Works. Sept.*: 17.

_____. 1943. Effect of the Addition of Sodium Nitrate to Sewage on Hydrogen Sulfide Production and B.O.D. Reduction. Sewage Works J. 15:255.

Heukelekian and Berger. 1953. Value of Culture and Enzymes Additions in Promoting Digestion. Sewage Ind. 25:1259.

Heukelekian and Heinemann. 1939a. Studies of the Methane-Producing Bacteria: I. Development of a Method for Enumeration. Sewage Works J. 11:426.

______. 1939b. Studies on the Methane Producing Bacteria: 1II. Digestion of Sewage Solids By the Addition of Enriched Cultures of Methane Producing Organisms. Sewage Works J. 11:571.

Heukelekian and Kaplovsky. 1948. Effect of Change of Temperature on Thermophilic Digestion. Sewage Works J. 20:806.

Heukelekian and Rudolfs. 1928. Carbon and Nitrogen Transformation in Fresh Sewage Digestion. Ind. Eng. Chem. 20:177.

Hill. 1939. Digestion Studies on Paper Pulp. Sewage Works J. 11:864.

Hill and Barth. 1977. A Dynamic Model for Simulation of Animal Waste Digestion. J. Water Pollu. Control Fed. 49:2129.

Hills. n.d. Fuel Plus Fertility. Henry Doubleday Research Association, Convent Lane, Bocking, Braintree, England.

Hinden and Dunstan. 1963. Anaerobic Digestion of Potato Processing Wastes. J. Water Pollu. Control Fed. 35:486.

Hommon. 1931. Imhoff Tank Sludge as Farm Fertilizer-- Canton, Ohio. Sewage Works J. 3:232.

House. 1973. Methane Systems. Earthmind, 4844 Hirsch Rd, Mariposa, CA 95338.

Hundley. 1949. Use of Internal Combustion Engines in Sewage Treatment Plants. Sewage Works J. 21:2.

Hussey, Row, and Allison. 1934. Fuel from Sewage and Cellulosic Waste. Bulletin 18. Virginia Polytechnic Institute Experiment Station.

- Imhoff. 1927. Operating Results of the Essen Activated Sludge Plant. Engineering News Record 99:790.
- ______. 1946. Digester Gas for automobiles. Sewage Works J. 18:17.
- _____. 1952. Sludge Gas as Fuel for Motor Vehicles. Water and Sewage Works July:284.
- Inglett, ed. 1973. Symposium: Processing Agricultural and Municipal Wastes. Westport, CT: AV1 Publishing.
- *Ingram and Bartsch.* 1960. Graphic Expression of Biological Data in Water Pollution Reports. *J. Water Pollu. Control Fed.* 32:297.
- Jewell. n.d. Bioconversion of Agricultural Wastes for Pollution Control and Energy Conservation. Department of Rural Sociology, Cornell University, Ithaca, NY 14853.
- ______. ed. 1976. Energy, Agriculture and Waste Management. Ann Arbor: Ann Arbor Science Publishers.
- Johnson. n.d. Methane Power & auto Information Sheet. Oregon Museum of Science and Industry Energy Center, 4015 S.W. Canyon Rd., Portland, OR 97221.
- Jones. 1932. What Are Offensive Odors About a Sewage Works? Sewage Works J. 4:60.
- Keefer and Kratz. 1929. Digesting Sludge at Its Optimum pH and Temperature. Engineering News Record Jan. 17:103.
 - ______. 1932. The Effect of Gases on Sewage Sludge Digestion. Sewage Works J. 4:24.
- _____. 1933. The Interchange of Heat During Sludge Digestion. Sewage Works J. 5:3.
- ______. 1934. The Digestion of Garbage with Sewage Sludge. Sewage Works J. 6:14.
- Keenan. n.d. Two-Stage Methane Production from Solid Wastes. Philadelphia: University of Pennsylvania.
- ______. 1977. Fuels Via Bioconversion. Energy Conversion 16:95.
- Kern. 1974. The Owner Built Homestead. New York: Scribners.
- Keyes. 1929. Renaissance of the Absorption Cycle Refrigerator. Ind. Eng. Chem. 21:497.
- King. 1911. Farmers of 40 Centuries. London: Cape.
- Kinsel. 1935. Gas Collection and Sludge Heating. Sewage Works J. 7:895.
- Klock. 1972. Sequential Processing in Wastewater Lagoons. J. Water Pollu. Control Fed. 44:241.
- Koepf. 1974. Personal communication.
- Krishnamoorthi, Abdulappa, Sarkar, and Siddiqi. 1973. Productivity of Sewage Fertilized Fish Ponds. Water Research. 9:269.
- Kristal and annett. 1940. Pumps: Types, Selection, Installation, Operation and Maintenance. New York: McGraw-Hill.
- Kunsch. 1948. Sludge Digestion Experiences with the External Heat Exchanger. Sewage Works J. 20:999.
- Lambrecht. 1948. "Methane Production by Anaerobic Fermentation of Pear Waste." Master's thesis, Oregon State University.
- Latham. 1873. Sanitary Engineering. n.p.: E. & F.N. Span.
- Laura and Idnani. 1971. Increased Production of Biogas from Cowdung by Adding Other Agricultural Waste Materials. J. of the Sciences of Food and Agriculture 22:164.
- Law. 1968. Agricultural Utilization of Sewage Effluent and Sludge-An Annotated Bibliography. Federal Water Pollution Control Administration, Dept. of the Interior, Washington, D.C.
- Lea. 1946. Sewage Pumping Stations. Sewage Works J. 18:238.
- Leach. 1972. "British `Ecological House' Aims at Halting Pollution & Waste." Los Angeles Times, Oct. 18, 1972.
- Levine, Nelson, Anderson, and Jacobs. 1935. Utilization of Agricultural Wastes: I. Lignin and Microbial Decomposition. Ind. Eng. Chem. 27:195.
- Lindsey, Haskins, Smith, and Beals. 1919. Compilations of Analyses. Special Bulletin of the Massachusetts Agricultural Experiment Station.
- Lunge and Ambler. 1934. Technical Gas Analysis. n.p.: Gurney and Jackson.
- Maly and Fadrus. 1971. Influence of Temperature on Anaerobic Digestion. J. Water Pollu. Control Fed. 43:641.
- Maramba. 1978. Biogas and Waste Recycling: The Philippine Experience. Maya Farm, Antipolo, Rizla, Philippines.
- Matthias. 1942. How to Design and Install Plumbing. Chicago: American Technical Society.
- Mau. 1956. Applying Recent Research to the Design of Separate Sludge Digesters. Sewage Ind. 28:1200.

- McCarty. 1964a. Anaerobic Waste Treatment Fundamentals: 1I. Environmental Requirements and Control. Public Works Oct.:123.
- ______. 1946b. Anaerobic Waste Treatment Fundamentals: III. Toxic Materials and Their Control. Public Works Nov. :91.
- McClung and Lindberg. 1957. The Study of Obligately Anaerobic Bacteria. In Manual of Microbiological Methods, p. 120.
- McGee. 1955. Gasoline Engine Conversion. Sewage Ind. 27:107.
- McKinney. 1953. Biocatalysts and Waste Disposal: 1. Fundamental Biochemistry of Waste Disposal. Sewage Ind. 25:1129.
- McKinnie. 1960. Operation and Maintenance of Gas Engines at Santa Rosa. J. Water Pollu. Control Fed. 32:311.
- Merz and Stone. 1968. Quantitative Study of Gas Produced by Decomposing Refuse. Public Works Nov.: 86.
- Meyers and Brown. 1961. Gas Regeneration and Food Production in a Closed Ecological System. National Academy of Sciences-National Research Council, Publication 893. Washington, D.C.
- Meynell. 1979. Methane: Planning a Digester. New York: Schoken Books.
- Miles. 1947. Evaluation of Methods of Heating Sludge. Sewage Works J. 19:161.
- Mitsui. 1974. The Utilization of Solar Energy for Hydrogen Production by Cell-Free System of Photosynthetic Organism. In Hydrogen Energy (Part A). New York: Plenum Press.
- ______. 1975. Photoproduction of Hydrogen via Microbial and Biochemical Processes. *In Hydrogen Energy Fundamentals, Symposium Proceedings. Miami: University of Miami.*
- Moore. 1935. Thermal Considerations in the Design of Heated Sludge Digestion Tanks. Sewage Works J. 7:618.
- Morgan. 1954a. Studies of Accelerated Digestion of Sewage Sludge. Sewage Ind. 26:462.
- ______. 1954b. Efficient Utilization of Digester Capacity. Sewage Ind. 26:1340.
- Morris. 1976. Methane for Home Power Use. Compost Science. Nov/Dec
- Morris, Jewell, and Casler. 1976. Alternative Animal Waste Anaerobic Fermentation Designs and Their Costs. In Energy Agriculture and Waste Management, p. 317.
- Mother Earth News. n.d. A Drum Methane Generator. Mother Earth News Reprint #160. Box 70, Henderson-ville, NC 28739.
- _____. 1971. Gobar Gas: Methane Experiments in India. 12:28.
- ______. 1972. The Plowboy Interview: Ram Bux Sing. 18:6.
- . 1973. The Plowboy Interview: L. John Fry. 23:6.
- Muehling. 1971. The Handling and Treatment of Swine Wastes. In Animal Waste Management, p. 111. Virginia: Arlie House.
- Mueller. 1972. Nutrient Removal by Natural Gas Fermentation. J. Water Pollu. Control Fed. 44:25.
- Mullen. 1955. Modern Gas Analysis. New York: Interscience.
- Murray. 1976. Weed Holds Promise for Pollution Cleanup. Chemical and Engineering News March 22:23.
- Myers. 1955. Algae as an Energy Converter. Proceedings of the World Symposium on Applied Solar Energy, Phoenix, Arizona, Nov. 1-5, 1955. Palo Alto, CA: Stanford Research Institute.
- National Academy of Sciences. n.d. Methane Generation from Human, Animal & Agricultural Wastes. Natl. Acad. of Sci., 2011 Constitution Ave., Washington, D.C. 20418.
- Nelson, Straka, and Levine. 1939. Effect of Temperature of Digestion, Chemical Composition, and Size of Particles on Production of Fuel Gas from Farm Wastes. J. of Agricultural Research 58:273.
- Newton. 1976. Photoproduction of Molecular Hydrogen by a Plant-Algal Symbiotic System. Science 191: 559.
- Neyeloff and Gunkel. 1976. Methane-Carbon Dioxide Mixtures in an Internal Combustion Engine. In Energy, Agriculture and Waste Management, p. 397.
- Niles. 1956. 1955 Operators Forum (Digester Scum Control). Sewage Ind. 28:579.
- Nishihara. 1935. Digestion of Human Fecal Matter, with pH Adjustments by Air Control. Sewage Works J. 7:798.
- Novak and Ramesh. 1975. Stimulation in Anaerobic Degradation. Water Research 9:963.
- Nussberger. 1948. Determination of Hydrogen Sulfide in Digester Gas. Sewage Works J. 20:499.

Oswald and Golueke. 1960. Biological Transformation of Solar Energy. Advances in Applied Microbiology. 2:223.

______. 1964. Solar Power via a Botanical Process. Mechanical Engineering Feb. :40.

Pacific Coast Gas Association, n.d. Data Book of Gas Utilization. 2 Pine St., San Francisco, CA 94111.

Parker. 1945. The Propulsion of Vehicles by Compressed Methane Gas. Great Britain, Institute of Sewage Purification.

Pauling. 1947. General Chemistry. San Francisco: Freeman.

Pickering. 1925. Compressabilities of Gases. Miscellaneous Publication of the Bureau of Standards #71. Washington, D.C.

Poincelot. 1972. The Biochemistry and Methodology of Composting. n.p.: Connecticut Agricultural Experiment Station Bulletin #727.

Pomeroy. 1941. Hydrogen Sulfide in Sewage. Sewage Works J. 13:498.

Popvich and Herring. 1959. Fuels and Lubricants. New York: Wiley.

Porges, Jasewicz, and Hoover. 1952. Measurement of Carbon Dioxide Evolution from Aerated Sludge. Sewage Ind. 24:1091.

Pretorius. 1969. Anaerobic Digestion III. Kinetics of Anerobic Fermentation. Water Research 3:549.

______. 1973. Principles of Anaerobic Digestion. In International Conference on Water Pollution, p. 202. New York: Pergamon.

Pringsheim. 1964. Pure Cultures of Algae-Their Preparation and Maintenance. New York: Hafner.

Pyle and Fraenkel, eds. 1975. Methane. London: Intermediate Technology Publications.

Quasim. n.d. SI Units in Engineering and Technology. New York: Pergamon.

Queer. 1933. Heat Transmission in Sludge. Sewage Works J. 5:937.

Rainbow and Rose, eds. 1963. Biochemistry of Industrial Microorganisms. New York: Academic.

Rankin. 1947. Scum Control in Digesters. Sewage Works J. 18:407.

______. 1948. Digester Capacity Requirements. Sewage Works J. 20:478.

Ransome. 1944. Straw-Sludge Manure (Reviews and Abstracts). Sewage Works J. 17:395.

Rawn. 1931. Automatic Sludge Stirring Mechanisms. Sewage Works J. 3:24.

Rawn, Banta, and Pomeroy. 1937. Multiple-Stage Sewage Sludge Digestion. New York: American Society of Civil Engineers.

Reed and Lerner. 1973. Methanol: A Versatile Fuel for Immediate Use. Science 182:1299.

Reeves. 1958. Sanitary Aspects of Composted Sewage Sludge and Sawdust. J. Water Pollu. Control Fed. 5:557.

Richter. 1935. Relative Permanence of Papers Exposed to Sunlight. Ind. Eng. Chem. 27:177.

Riehl. 1938. Gas Service Manual. Robbins Publishing Co.

Riesenfeld and Kohl. n.d. Gas Purification. Houston: Gulf.

Rizk, Farag, El-Mofty, and El-Fadl. 1968. Studies on the Production of Methane Gas from Organic Wastes Under Anaerobic Conditions: I. Important Conditions Influencing Formation of Combustible Gases. Agricultural Research Review, vol. 46. (Cairo, Egypt).

Romashkevich and Karelina. 1961. Methane and Organic Fertilizers from Wood Waste and Manure Fermentation. *Mikrobiologiya* 30:146.

Rosenburg. 1952. Methane Production from Farm Wastes as a Source of Tractor Fuel. Journal of the Ministry of Agriculture 58:487.

Rubins and Bear. 1942. Carbon-Nitrogen Ratios in Organic Fertilizer Materials in Relation to the Availability of their Nitrogen. Soil Science 54:411.

Rudolfs. 1927. Effect of Temperature on Sewage Sludge Digestion. Ind. Eng. Chem. 19:241.

______. 1932. Gas Yield from Sewage Sludge. Sewage Works J. 4:445.

Rudolfs and Heinemann. 1939. Growth Promoting Substances in Sewage and Sludge. Sewage Works J. 11:587.

Rudolfs and Miles. 1933. Heat Losses from Sludge Digestion Tanks: II. Field Observation. Sewage Works J. 5:17.

Rudolfs and Nemerow. 1952. Rag, Rope and Jute Wastes from Specialty Paper Mills: 1V. Anaerobic Digestion. Sewage Ind. 24:882.

- Rudolfs and Stahl. 1942. Phosphine and Sludge Digestion. Ind. Eng. Chem. 34:982.
- Rudolfs, Baumgartner, and Setter. 1932. Effects of Coagulants on Sewage Digestion. Sewage Works J. 4:628.
- Rudolfs, Setter, and Baumgartner. 1929. Effect of Iron Compounds on Sedimentation, Digestion and Ripe Sludge Conditioning. Sewage Works J. 1:398.
- Sanders and Bloodgood. 1965. The Effect of Nitrogen to Carbon Ratio on Anaerobic Decomposition. J. Water Pollu. Control Fed. 37:1714.
- Sanitary Engineering Research Laboratory, University of California. 1969. Comprehensive Studies of Solid Wastes Management: Second Annual Report. SERL 69-1. Berkeley.
- _____. 1970a. Comprehensive Studies of Solid Wastes Management: Third Annual Report. SERL 70-2.

 Berkeley.
 - _____. 1970b. Hydrolysis Rate of Cellulose in Anaerobic Fermentation. SERL 70-3. Berkeley.
- ______. 1972. Comprehensive Studies of Solid Wastes Management: Final Report. SERL 72-3. Berkeley.
- Savery and Cruzan. 1972. Methane Recovery from Chicken Manure Digestion. J. Water Pollu. Control Fed. 44:2347.
- Sawyer. 1960. Chemistry for Sanitary Engineers. New York: McGraw-Hill.
- Sawyer and Grumbling. 1960. Fundamental Considerations in High Rate Digestion. J. of the Sanitary Engineering Division of the American Society of Civil Engineers, .86.
- Sawyer, Howard, and Perhse. 1954. Scientific Basis for Liming of Digesters. Sewage Ind. 26:935.
- Schatz, et al. 1975. Transition: A Book on Future Energy. n.p.: Prometheus Unbound.
- Scherfig and Pearson. 1968. Bioenergetics of Acetate and Acetate Precursors in Methane Formation. Report 68-9. Berkeley: Sanitary Engineering Research Laboratory, University of California.
- Schlenz. 1936. Experiences with Digester Foaming. Sewage Works J. 8:609.
- _____. 1944. Controlled Digestion. Sewage Works J. 16:504.
- _____. 1947. Scum Control in Digesters-a Discussion. Sewage Works J. 18:409.
- Schofield and Tark. 1948. New Heating System for Sludge Digestion. Water and Sewage Works 1948:172.
- Schorger. 1926. Chemistry of Cellulose and Wood. New York: McGraw-Hill.
- Schroepfer and Ziemke. 1959. Development of the Anaerobic Contact Process: I. Pilot Plant Investigations and Economics. Sewage Ind. 31:164.
- Schulte, Krocker, Sparling, and Sapp. 1976. Methane Production through Bioconversion of Agricultural Residues. In Sharing the Sun: Agriculture, Biomass, Wind-New Developments. v. 7, p. 119.
- Schulze. 1958. Studies on Sludge Digesters and Methane Fermentation I. Sludge Digestion at Increased Solids Concentrations. Sewage Ind 30:28.
- Scipio. 1931. Development of a Direct Contact Water Heater. Purdue University Engineering Experiment Station Research Series #38. Lafayette, IN.
- Scott. 1962. Disposal of High Organic Matter Content Wastes on Land. J. Water Pollu. Control Fed. 34:932.
- Searls. 1944. Operation and Maintenance of Sewage Pumps. Sewage Works J. 16:629.
- Seil. n.d. Gas Chemists Manual of Dry Box Purification of Gas: An Annotated Bibliography. n.p.; American Gas Association.
- Shadduck and Moore. 1975. The Anaerobic Digestion of Livestock Wastes to Produce Methane: 1946-June 1975 (A Bibliography with Abstracts). St. Paul: Agricultural Engineering Dept., University of Minnesota 55108.
- Sheehy. 1960. Stream Pollution: Rapid Methods of Solving First Order Equations. J. Water Pollu. Control Fed. 32:646.
- Sierp. 1930. Specific Heat, Conduction, and Generation of Heat During the Digestion of Sewage Sludge. Sewage Works J. 2:191.
- ______. 1931. The Effect of Sludge Circulation in Digestion Tanks on Gas Production, Sludge Capacity and Scum (abstract). Sewage Works J. 3:154.
- Singh. 1971. Biogas Plant— Generating Methane from Organic Wastes. Ajitmal, Etawah, India: Gobar Gas Research Station.
- . 1972a. The Biogas Plant Generating Methane from Organic Wastes. *Compost Science*. 13:20.
- ______. 1972b. Building a Biogas Plant. Compost Science 13:12.

_____. 1975. Biogas Plant: Generating Methane from Organic Wastes and Designs with Specifications. *n.p.: Mother's Print Shop.*

Siu. 1951. Microbial Decomposition of Cellulose. New York: Reinhold.

Smiser and Gettings. 1977. New Opportunities in Fish Culture. Organic Gardening and Farming 24:62.

Smith and Brown. 1975. Process Feasibility Study: The Anaerobic Digestion of Dairy Cow Manure at the State Reformatory Honor Farm, Monroe, Washington. Seattle: Ecotope Group, Box 5599, University Station 98105.

Smith and Montanaro. n.d. Horizontal Drum Bio-Gas Plant. Austin: Maximum Potential Systems Project, University of Texas.

Smith and Morris. 1953. Use of the Heat Pump for Digester Heating. Sewage Ind. 25:1369.

Snell. 1942. Anaerobic Digestion: 1. Correction of Errors During the Measurement and analysis of the Gas. Sewage Works J. 14:1304.

______. 1943. Anaerobic Digestion: III. Anaerobic Digestion of Undiluted Human Excreta. Sewage Works J. 15:679.

Sobel. 1966. Physical Properties of Animal Manures Associated with Handling. In Management of Farm Animal Wastes. Publication SP-0366. n.p.: American Society of Agricultural Engineers.

Society of American Bacteriologists. 1975. Manual of Microbiological Methods. New York: McGraw-Hill.

Sparr. 1953. Initial Digestion Problems in a New Plant. Sewage Ind. 25:610.

Spencer, Shuckrow, and Ferguson. 1976. Addition of Powdered Activated Carbon to Anaerobic Digesters: Effects on Methane Production. Battelle Pacific Northwest Labs Publication #CONF-760738-1. Seattle.

Sperry. 1953. Laboratory Digester and Gasometer. Sewage Ind. 25:858.

______. 1959. Gas Recirculation at Aurora, Illinois. J. Water Pollu. Control Fed. 31:733.

Steel and Ehlers. 1958. Municipal and Rural Sanitation. New York: McGraw-Hill.

Straub. 1943. Digestion Studies on Pure Vegetables. Sewage Works J. 15:658.

______. 1944. Effect of Addition of Nitrogen on Digestion of Paper Pulp. Sewage Works J. 16:30.

Strock. 1948. Heating and Ventilating's Engineering Databook. n.p.: Industrial Press.

Taras, Greenberg, Hoak, and Rand, eds. 1974. Standard Methods for the Examination of Water and Wastewater. Washington, D.C.: American Public Health Association.

Thimann. 1955. The Life of Bacteria-- Their Growth, Metabolism, and Relationships. New York: Macmillan.

Tietjen. 1976. From Biodung to Biogas — Historical Review of European Experience. In Energy Agriculture and Waste Management, p. 247. Ann Arbor: Ann Arbor Science Publishers.

Toth. 1960. Using Organic Wastes in Agriculture. Compost Science 1:10.

Trasoo. 1972. Natural Gas. Beaconsfield, England: Scientific Press.

Travin and Buswell. 1934. The Methane Fermentation of Organic Acids and Carbohydrates. J. of the American Chemical Society 56:1751.

United Aircraft Research Laboratories. 1974. Technology for the Conversion of Solar Energy to Fuel Gas, Annual Report. 5285 Port Royal Rd., Springfield, VA 22151.

University of Manitoba. 1974. Methane Recovery Project Receives Money from Shell. *University of Manitoba Bulletin*. Aug. 14, 1974.

University of Pennsylvania. 1974. Technology for the Conversion of Solar Energy to Fuel Gas, Annual Report.

Van Buren, Pyle and Crook. 1981. A Chinese Biogas Manual: Popularizing Technology in the Countryside. ITDG Publishing.

Van Kleeck. 1943. Use of Sewage Sludge as Fertilizer. Sewage Works J. 15:788.

Viets. 1971. Cattle Feedlot Pollution. *Animal Waste Management Sept.*:97.

Visser. 1963. Gas Production in the Decomposition of Cyperus Papyrus. J. Water Pollu. Control Fed. 35:973.

Volunteers in Technical Assistance. n.d. Methane Gas Plant. Publication 11300. 3706 Rhode Island Ave., Mt. Rainier, MD.

Wade and Hartmann. 1975. Homegrown Energy. New York: Scribner.

Walraven. 1932. Development of Power from Sewage Sludge Gas. Sewage Works J. 4:614. 1935. Separate Sludge Digestion Tanks. Sewage Works J. 7:73.

Ward. 1978. personal communication.

Webber. 1907. Town Gas and Its Uses. n.p.: Archibald Constable and Co.

Wilcox. 1948. Agricultural Uses of Reclaimed Sewage Effluent. Sewage Works J. 20:24.

Wiley. 1957. Progress Report on High Rate Composting Studies. Engineering Bulletin, Proceedings of the 12th Industrial Wastes Conference Series #94, 13-15 May 1957, p. 590.

Wills, et al. 1934. Gas Engineers Handbook. New York: McGraw-Hill.

Wilson, et al. 1975. Energy: Global Prospects 1985-2000. New York: McGraw-Hill.

Wisely. 1941. Experiences in Digestion Tank Scum Control. Sewage Works J. 13:787.

Wong-Chong. 1976. Dry Anaerobic Digestion. In Energy Agriculture and Waste Management, p. 366. Ann Arbor: Ann Arbor Science Publishers.

Young. 1948. Corrosion Test of Screen Wire at Sewage Works. Sewage Works J. 20:550.

Zeikus and Henning. 1975. Methanobacterium arbophilicum sp.nov.: An Obligate Anaerobe Isolated from Wetwood of Living Trees. *Antonie Van Leewenhoek* 41:543.

Zeikus and Ward. 1974. Methane Formation in Living Trees: A Microbial Origin. Science 184:1181.

Zoltek and Gram. 1975. High-Rate Digestor Mixing Study Using Radioisotope Tracer. J. Water Pollu. Control Fed. 47:79.