

substantial number of physicians, bacteriologists, aerobiologists, physicists, public health workers, engineers and hospital personnel. Some data are available on the types and quantities of bacteria found in a variety of occupied and unoccupied spaces, but it is not possible at present to use this information as a conclusive index of the potential health hazard of a given environment. The reported number of airborne organisms may vary from 1 to 1000 per cubic foot of air, influenced somewhat by the method of testing³². Many are attached to the dust particles which are also present in the air.

Where it seems advisable or desirable to control the bacterial content of rooms, public conveyances or buildings, highly effective methods are available (see Chapter 13), and their extended use may do much to assist the workers in this field in accumulating the necessary mass of evidence that will decide the practical value of air sterilization for the control of communicable disease. It is now well established that ultraviolet radiation is commercially feasible for the protection or preservation of pharmaceuticals, cosmetics, and food products.

REFERENCES

- 1-Atmospheric Pollution of American Cities for the Years 1931 to 1933, J. E. Ives et al (*U. S. Public Health Service Bulletin No. 224*, March 1936).
- 2-Micromeritics, The Technology of Fine Particles, by J. M. DallaValle (Pitman Publishing Corporation, 1943).
- 3-Atmospheric Pollution Due to Smoke, by A. C. Stern (*Heating and Ventilating*, May, 1945).
Atmospheric Pollution Due to Dust and Cinders, by A. C. Stern (*Heating and Ventilating*, July, 1945).
- 4-Sootfall Studies for New York City, by J. Siegel and B. Feiner (A.S.H.V.E. JOURNAL SECTION, *Heating, Piping and Air Conditioning*, September, 1945, p. 495).
- 5-The Use of Fuel Consumption and Equipment Data in the Abatement of Atmospheric Pollution, by A. C. Stern (A.S.H.V.E. JOURNAL SECTION, *Heating, Piping and Air Conditioning*, August, 1945, p. 447-454).
- 6-Effects of Atmospheric Pollution Upon Incidence of Solar Ultra-Violet Light, by J. H. Shrader, M. H. Coblentz and F. A. Korff (*American Journal of Public Health*, Vol. 19, 1929, p. 7).
- 7-Studies in Illumination—III: A Study of the Loss of Light Due to Smoke on Manhattan Island, by J. E. Ives (*U. S. Public Health Service Bulletin No. 197*, June, 1930).
- 8-Study and Control of Industrial Atmospheric Pollution Nuisances, by F. M. Stead (*American Journal of Public Health*, Vol. 35, May, 1945, p. 491-498).
- 9-Evaluation of Odor Nuisance in the Manufacture of Kraft Paper, by J. M. DallaValle and H. C. Dudley (*U. S. Public Health Service Reprint No. 2022*, Public Health Reports, Vol. 54, January 13, 1939, p. 35-43).
- 10-Disposal of Refinery Wastes, Section II: Waste Gases, Vapors, Sludges and Dusts (*American Petroleum Institute*, New York City, 1938).
- 11-Offensive Trades, by David Ronald (William Hodge and Co., London).
- 12-Limits of Inflammability of Gases and Vapors, by H. F. Coward and G. W. Jones (*U. S. Bureau of Mines*, Bulletin No. 279, 1939).
- 13-Inflammation Limits and Their Practical Application in Hazardous Industrial Operations, by G. W. Jones (*Chemical Reviews*, Vol. 22, February, 1938).
- 14-Private Communication, by Hyton R. Brown (*Bureau of Mines*, College Park, Maryland).
- 15-Explosibility of Agricultural and other Dusts as Indicated by Maximum Pressure and Rates of Pressure Rise, by P. W. Edwards and L. R. Leinbach (*U. S. Department of Agriculture Technical Bulletin No. 490*, October, 1935).
- 16-Dust Explosion Hazards in Plants Producing or Handling Aluminum, Magnesium, or Zinc Powder, by H. R. Brown (*U. S. Bureau of Mines Information Circular No. 7148*, March, 1941).
- 17-Inflammability and Explosibility of Metal Powders, by I. Hartman, J. Nagy and H. R. Brown (*U. S. Bureau of Mines Report of Investigation No. 3722*, October, 1943).
- 18-Inflammability and Explosibility of Powders Used in the Plastics Industry, by I. Hartman and J. Nagy (*U. S. Bureau of Mines Report of Investigation No. 3751*, May, 1944).
- 19-Industrial Dust Explosions, by H. R. Brown (*U. S. Bureau of Mines*, Information Circular No. 7309, January, 1945).

- 20-Proposed Code for the Prevention of Dust Explosions in the Plastics Industry (*National Fire Protection Association*, Boston, May, 1945).
- 21-National Fire Codes for the Prevention of Dust Explosions (*National Fire Protection Association*, Boston, 1944). Contains codes for aluminum, magnesium, coal, pulverized fuel, flour, spice, starch, sugar, cocoa, sulfur and wood.
- 22-An Introduction to Pollen Analysis, by G. Erdtman (*Chronica Botanica Co.*, Waltham, Mass, 1943).
- 23-Pollen Grains, by R. P. Wodehouse (McGraw Hill Book Co., New York, 1935).
- 24-Atmospheric Pollen, by R. P. Wodehouse (*Aerobiology*, p. 8-31, Publication No. 17, *American Association for the Advancement of Science*, Washington, D.C., 1942).
- 25-Hayfever Plants, by R. P. Wodehouse (*Chronica Botanica Co.*, Waltham, Mass., 1945).
- 26-Hay Fever: A Geographical and Botanical Survey, by E. R. Squibb and Sons, New York, 1937.
- 27-Techniques for Appraising Air-Borne Populations of Microorganisms, Pollen and Insects (*Phytopathology*, Vol. 31, March, 1941, p. 201-225).
- 28-Apparatus for Determining the Pollen Concentration of the Atmosphere, by B. J. Cody, W. F. Kinney and N. A. Kerstein (Research Department, the Detroit Edison Company, Detroit).
- 29-The Volumetric Incidence of Atmospheric Allergens, by O. C. Durham (*Journal of Allergy*, Vol. 14, September, 1943, p. 455-461).
- 30-The Volumetric Incidence of Atmospheric Allergens, II: Simultaneous Measurements by Volumetric and Gravity Slide Methods, by O. C. Durham (*Journal of Allergy*, Vol. 15, May, 1944, p. 226-235).
- 31-Air-Borne Fungus Spores as Allergens, O. C. Durham (*Aerobiology*, p. 32-47, Publication No. 17, *American Association for the Advancement of Science*, Washington, D. C., 1942).
- 32-Sampling Devices, by H. G. DuBuy and A. Hollaender (*American Journal of Medical Science*, Vol. 209, February, 1945, p. 172-177).

BIBLIOGRAPHY

- Abstracts and Bulletins (monthly, annual and special) Industrial Hygiene Foundation, Inc., Pittsburgh, Pa.
- Aerobiology, Publication No. 17 (*American Association for the Advancement of Science*, Washington, D. C., 1942).
- Air Sanitation and Industrial Ventilation, by W. N. Witheridge (Detroit, Mich., 1945).
- Analytical Chemistry of Industrial Poisons, Hazards and Solvents, by M. B. Jacobs (Interscience Publishers, New York, 1941).
- Bibliography of Industrial Hygiene, 1900-1943 (*U. S. Public Health Service Bulletin No. 289*, 1945).
- Clouds and Smokes, by W. E. Gibbs (P. Blakiston's Son & Co., Philadelphia, Pa., 1924).
- Determination and Control of Industrial Dust, by Bloomfield and DallaValle (*U. S. Public Health Service Bulletin No. 217*, 1935).
- Dust, by S. C. Blacktin (The Sherwood Press, Cleveland, 1934).
- (The) Environment and Its Effect upon Man (Harvard School of Public Health, Boston, 1937).
- Industrial Dust, by Drinker and Hatch (McGraw Hill Book Co., New York, 1936).
- Journal of Industrial Hygiene and Toxicology (monthly) (Harvard School of Public Health, Boston, Mass.). See cumulative abstract and subject indexes.
- Manual of Industrial Hygiene, by W. M. Gafaer et al (*U. S. Public Health Service*, W. B. Saunders Co., Philadelphia, 1943).
- Noxious Gases and the Principles of Respiration Influencing their Action, by Henderson and Haggard (*American Chemical Society Monograph Series No. 35*, Reinhold, New York, 1943).
- Occupation and Health, two volumes (*International Labor Office*, Washington, D. C.).
- Toxicology and Hygiene of Industrial Solvents, by Lehmann and Flury, translated by Eleanor King and H. F. Smyth, Jr. (Williams and Wilkins, Baltimore, 1943).