

preclude the cooling of the entire building, but the needs of the average hospital can be met by the use of built-in room coolers and a few portable units which can be wheeled from ward to ward when needed.

In the North and certain sections of the Pacific Coast, cooling is needed but a few days during summer, while in the South, it can be used to advantage from May to October, and in tropical climates almost continuously throughout the year.

F. L. Grocott of the Anglo-Iranian Oil Co. states that in Iran, the medical staff after 10 years' experience with air conditioning, demand a uniform environment of 75 F and 50 per cent relative humidity (70 ET) under all summer outside conditions for general wards and treatment rooms, and 70 F with 30 to 50 per cent relative humidity (65-66 ET) for winter conditions. In the operating rooms, 70 F with 50 per cent relative humidity (66 ET) is demanded all the year 'round, although the annual external range is 40 F to 120 F. No ill effects have been noted in the medical personnel, though they are exposed to changes from external to internal conditions many times daily. Temperature shock in either direction seems to create discomfort for a short interval, but if the individual is in good health, no injury results.³⁹

Aside from comfort and recuperative power of the patients, cooling is of great assistance in the treatment of fevers in the new-born and in post-operative cases, in enteric disorders, fevers, heat stroke, heart failure, thyroid crisis, and in a variety of other ailments which often accompany summer heat waves.

Problem of Odors

The evacuation of battle casualties in aircraft and their subsequent hospitalization have stimulated efforts to minimize odors arising from draining wounds, old odorous casts, and gangrenous wounds. For aircraft, chemical sprays and vapors, perfumes, oxidizing gases and simple exhaust methods are unsatisfactory. An ideal deodorant would purify the air by means of odor adsorption so that subsequently the air can be recirculated. Based upon the effectiveness of activated carbon commercially and industrially to adsorb odors, individual adsorption units have been used successfully. In hospital wards the question of superiority of adsorption methods for elimination of odors over other methods remains to be answered. The present status of the problem is that the commercial aspect is highly controversial.⁴⁰

REFERENCES

- ¹ Factors in the Control of the Spread of Acute Respiratory Infections with Reference to Streptococcal Illness and Acute Rheumatic Fever, by S. M. Wheeler and T. D. Jones (*American Journal of the Medical Sciences*, 209:58, 1945).
- ² Dust Control, Report on Suppressive Measures for the Control of Dust, to the Standard Methods Committee for the Examination of Germicides and Antibacterial Agents, by Clayton G. Loosli (*American Journal of Public Health*, Vol. 38, p. 409, March, 1948).
- ³ Laboratory and Field Studies of Glycols and Floor-Oiling in the Control of Air-Borne Bacteria, by A. P. Krueger, et al (*U. S. Naval Medical Bulletin*, 42:1288, 1944).
- ⁴ The Lethal Effect of Relative Humidity on Air-Borne Bacteria, by Edward W. Dunklin and Theodore T. Puck (*Journal of Experimental Medicine*, 87:87-101, Feb., 1948).
- ⁵ Quotation by William Lester, Jr., in Health on the Job, No. 22, February 1949, published by *Institute of Industrial Medicine*, New York University, New York, N. Y.

- ⁶ Bacterial Content of Air in Army Barracks, by H. M. Lemon, H. Wise and M. Hamburger (*War Medicine*, 6:92, 1944).
- ⁷ A Study of the Nature and Control of Air-Borne Infection in Army Camps, by O. H. Robertson, M. Hamburger, C. G. Loosli, T. T. Puck, and H. M. Lemon (*Journal of the American Medical Association*, 126:993, 1944).
- ⁸ Lethal Effects of Triethylene Glycol Vapor on Air-Borne Bacteria and Influenza Virus, by O. H. Robertson, et al (*Science* 97:142, 1943).
- ⁹ The Present Status of Glycol Vapors in Air Sterilization, by M. Hamburger, Jr., O. H. Robertson, and T. T. Puck (*American Journal of the Medical Sciences*, 209:162, 1945).
- ¹⁰ Summary of a 3-Year Study of the Clinical Applications of the Disinfection of Air by Glycol Vapors, by T. N. Harris and J. Stokes, Jr. (*American Journal of the Medical Sciences*, 209:152, 1945).
- ¹¹ Triethylene Glycol Vapor Distribution for Air Sterilization, by Edward Bigg, B. H. Jennings, and F. C. W. Olson (A.S.H.V.E. TRANSACTIONS, Vol. 53, 1947, p. 393).
- ¹² Glycol Vapors for Disinfecting Purposes, Editorial (*Journal of the American Medical Association*, 133:696, March 8, 1947).
- ¹³ An Experiment with Triethylene Glycol Vapor for the Control of Colds among Office Employees, by W. J. McConnell (*Industrial Medicine*, 18:5, 192-196, May, 1949).
- ¹⁴ Ultra-Violet Light Control of Air-Borne Infections in a Naval Training Center, by S. M. Wheeler, H. S. Ingraham, A. Hollaender, N. D. Lill, J. Gershon-Cohen, and E. W. Brown (*American Journal of Public Health*, Vol. 35, p. 457, 1945).
- ¹⁵ An Evaluation of Ultraviolet Radiation of Sleeping Quarters as Supplement of Accepted Methods of Disease Control, by H. G. DuBuy, J. E. Dunn, F. S. Brackett, W. C. Dreessen, P. A. Nealand, and I. Possner (*American Journal of Hygiene*, 48: 207-226, Sept., 1948).
- ¹⁶ Recent Studies on Disinfection of Air in Military Establishments (*American Journal of Public Health*, Vol. 37, p. 189, Feb. 1947).
- ¹⁷ The Present Status of the Control of Airborne Infections (*American Journal of Public Health*, Vol. 37, p. 13, Jan. 1947).
- ¹⁸ Commercial Exploitation of Glycol Vaporizers (Editorial in *American Journal of Public Health*, Vol. 39, No. 2, February 1949, p. 222).
- ¹⁹ A Comparative Study of the Effect on Men of Continuous Versus Intermittent Exposure to a Tropical Environment, by N. Pace, M. B. Fisher, J. E. Birren, G. C. Pitts, W. A. White, Jr., W. V. Consolazio, and L. J. Pecora (Research Project X-205, Report No. 2, *Naval Medical Research Institute*, Bethesda, Md., May, 1945).
- ²⁰ Mechanism of Heat Retention, by F. K. Hick and M. M. Montgomery (Unpublished).
- ²¹ Environmental and Physiologic Studies Aboard an Air-Cooled Hospital Ship En Route from Norfolk, Virginia to Canal Zone (U. S. S. TRANQUILITY (AH-14), 6-13 June 1945), by A. R. Behnke (Research Project X-205, Report No. 4, *Naval Medical Research Institute*, Bethesda, Md., September, 1945).
- ²² Investigation Into the Effect of Hot, Dry Microclimate on Peripheral Circulation in Arthritic Patients, by Gunner Edstrom, G. Lundin and T. Wramner (*Annals of Rheumatic Diseases*, 7:76-82, June, 1948).
- ²³ Fundamentals of Anesthesia (American Medical Association Press, Chicago, Ill., 2nd Edition, 1944, p. 204).
- ²⁴ The Hazard of Fire and Explosion in Anesthesia, by B. A. Green (*Anesthesiology* 2:144, 1941).
- ²⁵ Control of Physical Hazards of Anesthesia, by R. M. Tobell and A. W. Friend (*Canadian Medical Association Journal*, 46:560, 1942).
- ²⁶ A.S.H.V.E. RESEARCH REPORT No. 1111—Air Conditioning Requirements of an Operating Room and Recovery Ward, by F. C. Houghton and W. Leigh Cook, Jr. (A.S.H.V.E. TRANSACTIONS, Vol. 45, 1939, p. 161).
- ²⁷ Unpublished Naval Studies, by A. R. Behnke and O. Schneider (1940).
- ²⁸ Disinfection of Air by Air Conditioning Processes, by C. P. Yaglou and Ursula Wilson (*American Association for the Advancement of Science*, Publication No. 17, p. 129).
- ²⁹ The Control of Cross-Contamination by the Use of Mechanical Barriers, by J. A. Reyniers (*Aerobiology, American Association for the Advancement of Science, Symposium*, 17:254, 1942).
- ³⁰ The Premature Infant: A Study of the Effect of Atmospheric Conditions on