

THE PHYSICAL SIDE OF COMFORT. A. C. MENKE and C. RINGQUIST, Heating, Piping & Air Cond. **22**:81 (Feb.) 1950.

The factors of insensible perspiration (diffusion of fluid through the skin), sensible perspiration and skin temperature are discussed. An increase of 20 to 25 per cent in relative humidity in temperatures below 84 F. is necessary to compensate for the variation in body heat loss associated with 1 F. change in air temperature. At 93 F. and above, all body heat is dissipated by evaporation, and perspiration increases as the humidity rises. Optimum relative humidity is 45-50 per cent with an extreme range of 30-60 per cent. Air movement increases convection heat loss but has little direct effect on evaporation or radiation unless skin temperature changes. Air movement is undesirable when the air temperature is higher than body surface temperature. Acclimatization to a new condition requires 1 to 2 weeks but can be shortened if physical work is done. A repartition of the three heat loss types is eventually achieved. Shock from a quick change in environment is less disturbing if the relative proportions of body heat loss methods are not changed much. Women are more efficient than men in adapting to varying environments. Sensible heat loss changes little with increased activity but latent heat loss increases rapidly. The influence of wall temperatures is important. Comfort depends largely on the sum of convective and radiant losses, and the proportion of each makes little difference.

G. B. PRIESTER [REFRIGERATION ABST.].

BIOCHEMICAL AND PHYSIOLOGICAL ASPECTS OF HEMOGLOBIN: IV. DISTURBANCES OF HEMOGLOBIN SYNTHESIS IN LEAD POISONING. A. VANNOTTI, Hemoglobin (Symposium, Conference at Cambridge in Memory of Joseph Barcroft) June 1948, p. 253.

Radioactive Fe was injected intravenously into rabbits. In Pb poisoning there occurred a rapid initial increase in serum Fe, a more rapid storage of Fe in the liver and a significant accumulation of Fe in the bone marrow. The Pb does not appear to interfere with the passage of the Fe through the storage organs, but inhibits the utilization of Fe for the synthesis of hemoglobin in the bone marrow. Fluorescence microscopy shows that the erythroblasts of the marrow are especially rich in porphyrin in Pb poisoning. The Pb probably has a direct action either on the erythroblast or on the transport system from the reticuloendothelial system to the erythroblast. Pb is not able to disturb the synthesis of heme of cytochrome c.

A. DIETZ [CHEM. ABSTR.].

EFFECTS OF THE INHALATION OF OXYGEN. L. B. BERGER and S. J. DAVENPORT, Information Circular no. 7575, United States Department of the Interior, Bureau of Mines, July 1950.

The authors present a comprehensive review of the problems encountered as a result of oxygen inhalation, pointing out the deleterious effects as well as circumstances under which it is of value. Beginning with a survey of fundamental physical and physiological aspects of respiration, they proceed to a broad but brief consideration of all aspects of increased and decreased oxygen supply. All ranges of oxygen concentration and increased as well as reduced barometric pressure are discussed. Under each of these environmental circumstances the characteristic clinical syndromes and the levels at which they appear are reviewed. Special attention is devoted to the indications for, and the results to be expected from, oxygen used in resuscitation and treatment of asphyxiated persons, in prevention or mitigation of compressed air sickness, in aviation and in clinical medicine. The various types of apparatus and methods available for therapeutic or industrial use of oxygen are discussed.

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MEDICAL PROBLEMS ENCOUNTERED IN UNDERSEA CRAFT. REAR ADMIRAL LAMONT PUGH, J. A. M. A. **144**:230-233 (Sept. 16) 1950.

Admiral Pugh emphasizes the complex factors of undersea life which tax the physical and psychic endurance of the submariner.

The principal diseases of the submariners include colds, constipation and skin afflictions. Colds affecting the entire ship's populace usually are initiated by a few members with recently acquired colds that spread, in 48 to 72 hours, with explosive rapidity, and subside with equal speed. The rapid spread is the result of close association; the early decline is correlated with absence of new infections and acquirement of resistance.