

SANITARY ENGINEERING

ABEL WOLMAN, C.E.

Notes on the Mosquitoes of Lee County, Georgia—The different species encountered during the summer of 1923 are recorded, together with notes on the breeding places and habits of the different species.—Francis Metcalf Root, *Am. J. Hyg.*, 4:449 (Sept.), 1924. A. W. B.

Further Notes on the Male Genitalia of American Anopheles—Descriptions of the male genitalia of *A. pseudomaculipes*, *A. intermedius* and *A. tarsimaculata* are given. Examination of new material indicates certain errors in a previous report which are corrected in this article.—Francis Metcalf Root, *Am. J. Hyg.*, 4:456 (Sept.), 1924. A. W. B.

Investigations on the Control of Hookworm Disease. XXXIII—The Significance of Egg Count Data in *Necator Americanus* Infestations—This paper discusses the question of what constancy, if any, there might be in the day to day output of hookworm eggs from a given human host. Two human infestations of *N. americanus* were studied for 15 to 40 consecutive days respectively. The following conclusions of the study are given: the dilution egg counting technique furnishes information of measurable exactness on the number of ova per gram of feces; daily output of eggs from a hookworm infestation is constant within the limits of the natural variations in daily fecal outputs; the number of eggs, whether per day or per gram, reflects the degree of infestation in number of worms harbored, the greater the number of stool eggs counted increasing the value of this interpretation.—Norman R. Stoll, *Am. J. Hyg.*, 4:466 (Sept.), 1924. A. W. B.

Density of Population and Mortality in the United States—Experimental evidence pertaining to the lower forms of life shows plainly that there is a biological (as distinguished from a social or economic) effect of crowding. Using the United States Census

reports and mortality statistics an effort is made to find what relationship, if any, exists between density of population and mortality. The two methods of treating the subject, (1) partial correlation and (2) a comparison of rates, are described. The mean county in the United States Registration Area in 1910 had an area of 2,850 square miles, a total population of 29,050 and an annual death rate of 11.0 per 1,000. By the method of partial correlation, it has been shown that with the exception of the death group "65 and over" there is no relation between population density and mortality in the rural portions of the counties. There is no influence of the age constitution of cities when measuring the relation between population density and mortality.—Thomas J. LeBlanc, *Am. J. Hyg.*, 4:501 (Sept.), 1924. A. W. B.

The Reaction of Pathogenic Fungi to Ultra Violet Light and the Role Played by Pigment in This Reaction—Experiments show: X-rays, up to 10 skin doses, have a slightly stimulating action on pathogenic fungi of the skin; visible and near ultra-violet light, together, are stimulating in moderate doses, but have a slightly inhibitory effect in heavy doses on non-pigmented fungi; non-pigmented fungi may be sensitized by eosin so that they are readily killed by visible light; far ultra-violet light has a strong lethal action on non-pigmented fungi. It is suggested that the function of pigment in fungi, and in the human skin as well, is to regulate the energy absorbed by the underlying cells so that they receive only a sublethal stimulating dose.—Antonio Pena Chavarria and Janet H. Clark, *Am. J. Hyg.*, 4:639 (Nov.), 1924. A. W. B.

Threshold Air Currents in Ventilation—This study was undertaken to determine the air currents and their physiological effects in producing the fresh and comfortable sensation in well-ventilated rooms. Threshold velocities were determined by exposing the cheek to a

current of air the velocity of which could be varied with fine gradations from zero to a high velocity. Air currents of threshold velocity, when directed against the cheek for five minutes do not appreciably affect skin temperature when the temperature of the current is equal to the temperature of the room. Over temperature and humidity range investigated, no relationship was found between humidity of the current of air and threshold velocity. Experiments indicate that the air movement in a well ventilated room should not fall below the threshold value for the skin of the cheek.—Anne M. Baetzer, *Am. J. Hyg.*, 4:650 (Nov.), 1924. A. W. B.

The Effect of Carbon Tetrachloride on the Egg-Laying Powers of the Female Hookworm—In most instances carbon tetrachloride in doses up to 2 c.c. had very little inhibiting action on the egg laying power of the female ancylostome. All inhibition had

disappeared by the seventh day. The theoretical number of worms responsible for the eggs counted was found to be high and, on theoretical grounds, it was predicted that female ancylostomes would be found to have about five times the egg laying powers of female necators.—W. C. Sweet, *Am. J. Hyg.*, 4:691 (Nov.), 1924. A. W. B.

Treatment of Hookworm Disease with a Combination of Carbon Tetrachloride and Oil of Chenopodium. Comparison of Results of Simultaneous and Delayed Administration of Magnesium Sulphate—A combination of carbon tetrachloride, three parts, with oil of chenopodium, one part, in adult dose of 2.4 c.c. is very effective in an area of low ancylostome infestation. Simultaneous administration of magnesium sulphate tends to delay the expulsion of many worms until the second day.—Fred L. Soper, *Am. J. Hyg.*, 4:699 (Nov.), 1924. A. W. B.

INDUSTRIAL HYGIENE

DRS. E. R. HAYHURST AND N. C. DYSART

Report of Benzol Committee—The studies during the year 1924 of the Sub-Committee on Benzol, Chemical Section, National Safety Council, have confirmed their previous view that benzol poisoning is a very real industrial hazard. This was brought out in the Committee's Second Progress Report at the Louisville Congress. Their investigations disclosed a series of 15 deaths and 83 more or less serious illnesses occurring as a result of industrial benzol poisoning during the past few years. The principal cause of poisoning lies in processes depending upon the evaporation in the atmosphere of the workroom of benzol used as a solvent or vehicle, thus leaving the dissolved substance in place. As an early diagnostic sign, the white blood cell count was applied as a criterion, and a deviation of 25 per cent from the accepted normal of 7,500 was regarded as probably suggestive of benzol poisoning. Activated charcoal was employed in the estimation of actual benzol content of the workroom air and recorded amounts varying from 28 to 4,140 parts per million.

Local exhaust ventilation at the point of origin of vapors appears to be a highly efficient procedure for avoiding benzol poisoning, no abnormal blood counts having been observed in workrooms provided with this protection. The vapors may be exhausted downward or upward, depending upon whether the evaporation is from warm or cold objects or they may be drawn off laterally if the peculiarities of machine construction demand. In most cases general room ventilation cannot be regarded as an adequate substitute for local exhaust ventilation.

Occupational Diseases of Mining—In the year 1922, three miners' afflictions topped the list of compensable diseases in Great Britain. Miners' nystagmus was first with 4,091 new cases, "beat" knee came second with 1,721, "beat" hand third with 1,138, while "beat" elbow with 200 new cases came immediately after industrial lead poisoning with 247. E. L. Collis and T. J. Lewellyn have just issued a "Report on Miners' Beat Knee, Beat Hand and Beat Elbow." The disease in each case is a subcutaneous cellulitis of the part affected

* The editors of this Section will gladly receive contributions from members. Please address all material to Hartman-Ohio Bldg., Columbus, Ohio.