

Physiology and Nutrition

PROTEIN REQUIREMENT OF HARD WORKERS: III. INFLUENCE OF PURE PROTEIN AND EXTRACTIVES ON ABILITY TO WORK. HEINRICH KRAUT, GUNTHER LEHMAN and ALEXANDER SZAKAL, *Biochem. Ztschr.* **320**:99, 1949.

This study was carried out with two miners as subjects, and their N and P balances were determined over a period of nine months. Their working capacity was determined under different dietary conditions. A lowering of the working capacity was observed when the protein intake was reduced from about 104 Gm. to 69-81 Gm., which, of course, is still above a physiological minimum. It must be pointed out that on the reduced protein intake the moiety of animal origin dropped from about 0.6 to even less than 0.2. Adding meat extract to the protein-low diet depressed the working capacity but adding protein in the form of pure casein caused a rise in capacity. Enriching the diet with protein (much meat) so that 144 Gm. was consumed per day (0.65 being animal in origin) acted very favorably on the work performance.

S. M. [CHEM. ABST.].

EFFECTS OF DESOXYCORTICOSTERONE ACETATE ON ACCLIMATIZATION OF MEN TO HEAT. SID ROBINSON, RAYMOND K. KINCAID, and ROBERT K. RHAMY, *J. Appl. Physiol.* **2**:399, 1950.

During the first two days of testing in heat, higher concentrations of Na were found in the subject's plasma and lower concentrations of Na and Cl in the sweat. No other significant changes were noted.

THERESA MCKEE [CHEM. ABST.].

OCCUPATIONAL DAMAGE OF EYES OF WORKERS IN HYDROQUINONE FACTORIES. AHUJA, Klin. Monatsbl. Augenh. **113**:177, 1948.

Yellowish brown pigmentation of the conjunctiva and cornea is described. Depending on the length of exposure, workers show eye damage and reddish discoloration of the hair and exposed skin, especially that of the hands and soles. Similar injuries are seen in aniline workers. The brown pigmentation is probably caused by oxidation of absorbed hydroquinone.

KARL F. URBACH [CHEM. ABST.].

PHYSIOLOGICAL EFFECTS OF THE SOLVENTS USED IN THE CHEMICAL INDUSTRY. HANS V. NABELL, *Seifen-Öle-Fette-Wächse* **76**:80, 1950.

CONTRIBUTION TO THE KNOWLEDGE OF METABOLISM OF BENZENE AND ITS HOMOLOGUES IN THE HUMAN ORGANISM. JAN ROUBAL and JOSEF ZDRAŽIL, *Zvláštní otisk z Časopisu lékařů českých* **89**:761, 1950.

The problem of the metabolism of benzene and its homologs was studied, a polarographic method being used. Urine, blood and exhaled air were analyzed according to a method described by the authors. In all three, benzene is bound to a pyridine derivative which originates probably from a codehydrase. This can be oxidized by nitric acid or even by enzymes in the urine. From the oxidized pyridine derivative a characteristic polarographic wave is obtained. The urine changes from straw yellow to olive green; after a fermentative process has taken place, characteristic crystals form. The solution obtained by dissolving the residue after the evaporation of ether, when exposed to ultraviolet rays, gives the typical polarographic wave of m-dinitrobenzene. Probably at the same time the oxidized pyridine derivative is changed. In blood a typical m-dinitrobenzene double wave could be obtained after exposure to ultraviolet rays.

Homologs of benzene are rarely found in urine but the dinitro compounds are found in exhaled air after exposing the solution to ultraviolet rays. The urine of people working with benzene smells characteristically like spice after the addition of 5 per cent of 65 per cent nitric acid. The strongest concentration of benzene in the urine and exhaled air of people working with benzene is found during working hours. The concentration in exhaled air decreases very slowly, and the gradual disappearance may last several hours.

ADAPTED FROM AUTHORS' SUMMARY.