

of quartz have been demonstrated. Modifications of the matrix theory may explain silicosis as a pathol. process resulting from the mol. and structural makeup of silicic acid. Over 154 references. W. C. Tobie

Early silicosis. G. Worth, L. Gasthaus, K. Muysers, and F. Siehoff (Krankenhaus Gräfschaft, Moers, Ger.). *Beitr. Silikose-Forsch.* No. 83, 1-63 (1964). Physiol., pathol., and x-ray data were detd. on 365 coal miners aged 20-39 years in comparison with 25 healthy workers in the same age group not exposed to dust. Early silicosis, beginning within 10 years, was detected in 285 of the coal miners. Vital capacity of the lungs and forced respiratory vol. were significantly lower in the miners, regardless of dust exposure or the development of silicosis. Over 50% of the miners with early silicosis required a greater respiratory vol. for a given uptake of O than did the 25 controls. The arterial pO_2 in miners with pneumoconiosis was lower than the av., while the alveolo-arterial gradient of O was higher, both at rest and during effort. These effects were related to time of exposure to coal dust, although not in correlation with the x-ray findings. Analysis of expiratory argon pressure curves showed that ventilatory troubles occurred in 5.6% of relatively young miners with early silicosis from 10-15 years of dust exposure. Abnormalities of gaseous diffusion also occurred. However, there were no significant differences in the acid-base metabolism in early silicosis as compared with that in the controls not exposed to dust. 19 references. W. C. Tobie

Mercury vapor in dental offices. W. Ketterl and K. Lamprecht (Univ. Munich, Ger.). *Deut. Zahnärztl. Z.* 19(12), 1104-9 (1964). Hg contamination of dental offices may stem from open storage or from improper technique in prepn. of amalgams. Fingers contaminated with Hg are not completely free of Hg 20 min. after thorough soap and water washing. Measures suggested for minimizing the contamination of dental offices are discussed. Henry M. Koehler

Hemocoagulative modifications in chronic experimental poisoning by tetryl. E. Daniele (Univ. Naples). *Folia Med. (Naples)* 47(8), 767-76 (1964) (Ital.). The possibility was studied of detg. early or latent changes in coagulation and an increased tendency to hemorrhage, esp. of the thrombophilic type, even when tests prove neg. for subjects exposed to tetryl. The studies were carried out on 15 rabbits: 3 were kept as controls and the others were given 0.125 g. tetryl/kg. body wt. orally for 6 months. During the entire period the following tests were made: thromboelastograms, prothrombin time (Quick), prothrombinemia, accelerinemia, convertinemia, and a direct blood platelet count (Palumbo and Dini). Blood was collected in a siliconated tube. After 6 months the following changes (in %) had occurred: prothrombin time, from 96.3 to 68.1; prothrombinemia, from 96.6 to 75.2; accelerinemia, from 95.9 to 96.7; convertinemia, from 95.8 to 72.3; platelets/cu. mm., from 307,530 to 498,640. Even though some of the factors did not change significantly, the general blood coagulation picture was definitely altered by chronic tetryl poisoning. The possibility of intravital hemolysis is considered. The most definite entity was the decrease in coagulability. Felix Saunders

Establishing hygienic norms for some caprolactam intermediates in the atmosphere. A. A. Dobrinski (Central Inst. Advanced Med. Training, Moscow). *Gigiena i Sanit.* 29(12), 8-13 (1964) (Russ.). The following concns. of cyclohexanol (I) and cyclohexanone (II) in mg./cu. m., resp., are reported: threshold for detection by odor, 0.24, 0.21; by influence on dark adaptation of eye, —, 0.11; detected by effect on electrocortical conditioned responses, 0.14, 0.11; recommended single-exposure max., 0.06, 0.04. Rats were exposed to atm. contg. 0.059 mg. I and 0.042 mg. II, resp./cu. m. for 81 days with no observed changes in muscular chronaxy, cholinesterase activity, sulphydryl blood concns., or ascorbic acid concns. in brain and kidney. I and II were detd. spectroscopically using the absorptions at 510 and 550 m μ , resp. John Howe Scott

Hygienic evaluation of the synthetic flocculant polyamide. Mark PAA. N. A. Rakhmanina (I. M. Sechenov Inst. Med. Inst., Moscow). *Gigiena i Sanit.* 29(12), 20-30 (1964) (Russ.). The L.D.₅₀ values of polyacrylamide (I) for mice and rabbits are 12,950 and 11,250 mg./kg., resp. These may be due to the monomer present. Doses of 1.5 mg./kg. caused changes in the conditioned reflexes of rats in 9 months. The recommended max. concn. of I in drinking water is 2 mg./l. John Howe Scott

Coniosis hazards of a series of refractory materials. B. A. Katsnel'son, M. F. Lemyshev, L. G. Babushkina, and L. N. El'niehykh (Med. Inst., Sverdlovsk). *Gigiena i Sanit.* 29(12), 30-8 (1964) (Russ.). Doses of various refractories were introduced intratracheally into rats and the effects studied during 9 months histol. and by detn. of hydroxyproline and lipid concns. The following groups were progressively less harmful: quartzite and dinas; chamotte, clay (12% free SiO_2), and forsterite; magnesite, and chromomagnesite. The recommended max. for these groups are 1, 2, 5, and 10 mg./cu. m. air, resp. John Howe Scott

Biochemical changes in workers occupied in vinyl chloride synthesis and polymerization. Sylvia Gabor, Muna Radu, N.

Preda, S. Abrudean, Liana Stanof, Zoe Anca, and Clara Valaczkay (Inst. Hyg. Cluj, Romania). *Igien. (Bucharest)* 13(5), 409-18 (1964) (Rom.). The blood of 78 workers of a poly(vinyl chloride) plant was investigated. Found were decreased albumin and increase of β - and γ -globulin fractions in serum proteins, decrease of the β to α ratio of serum lipoproteins, and decrease of the serum cholinesterase and pseudocholinesterase activities. Blood catalase and serum peroxidase were normal. BTIQ

Pathomorphology of brain elements of white rats with chloroprene poisoning. T. B. Movsesyan, A. V. Muatsakanian, and O. Kh. Galstyan. *Izv. Akad. Nauk Arm. SSR, Biol. Nauki* 17(9), 51-80 (1964) (Russ.). Results are reported of histol. investigations of the cerebral cortex of white rats exposed to chloroprene (I) during 6 months. The chronic effect of I in doses from 0.56 mg./m³ to 3.06 mg./m³ caused intense dystrophic changes in the cerebrum. In general, all dystrophic changes in the cortex led to atrophy and wrinkling of some cells, swelling, tigrolysis and hypochromatosis of other cells and finally to the acute swelling and vacuolization and destruction of cytoplasm. The last changes are more sharply expressed in the elements beneath the cortex and medulla oblongata. In the circulatory system, hypotonia of vessel walls and proliferation of the endothelium take place. M. Charmandarian

Examination of urine for porphyrin in some occupational poisonings. A. Petrova and D. Bakalov. *Khigiena (Sofia)* 6(4), 37-41 (1963) (Russ.). Urinary examn. for porphyrins was carried out in subjects with occupational diseases and in healthy individuals. The results obtained are compared with those of liver-function tests and urinary excretion of urobilin and urobilinogen. Increased urinary coproporphyrin excretion is a very early and sensitive indicator of liver damage. The investigation covers 19 forms of poisoning, 3 being combined. Coproporphyrinuria is encountered in 13 forms of poisoning, viz., ligroine, benzene, Pb, CO, Hg, Cu, S gases, TNT, MeCl, aniline, Me₂CO, α -CN, and NaOH + liquid soap. A more thorough investigation was carried out by performing urinalysis in subjects poisoned or subjected to the noxious effect of gasoline. Coproporphyrinuria is a sensitive and more frequently encountered indicator in occupational poisonings, even in the presence of extremely mild liver damage. Urinary coproporphyrin excretion is very frequent in gasoline poisoning; it may even appear in apparently healthy individuals, who are in continuous contact with gasoline fumes. From *Abstr. Bulgar. Sci. Lit., Med. Phys. Cult.* 6(4), 34 (1965). TCFR

The maximum allowable concentration of dibutyl phthalate. Mincho Spasovski. *Khigiena (Sofia)* 7(1), 38-44 (1964) (Bulg.). The phys. and chem. qualities of di-Bu phthalate (I) are pointed out, the toxic parameters are established, and its acute and chronic effects on 299 different kinds of test animals are studied. The author det. 0.001 mg./l. of air as the max. allowable concn. of tech. I, heated to over 140°, on the basis of examn. of conditioned reflexes, latent period, weight coeff. of liver and kidneys, total body wt. motor activity, and fatigue. The toxicity of I depends on its routes of penetration into the organism. The vapors of I, heated to over 140°, are most toxic, causing likewise pulmonary edema. I is less toxic in peroral administration, it has no skin resorptive effect. It possesses a very strong cumulative effect when inhaled or applied by mouth. The cumulation coeff. is <1, explained by the development of high I sensitivity. From *Abstr. Bulgar. Sci. Lit., Med. Phys. Cult.* 7(2), Abstr. No. 469 (1964). TCFR

Carbonic anhydrase in occupational lead poisoning. A. Batolska. *Nauchni Tr. Nauchnoissled. Inst. Ochrana Truda Prof. Zaboljavanija* 10, 55-9 (1963) (Russ.). Examns. and lab. investigations were carried out on a series of 81 workers from a Pb works. Besides the characteristic Pb-poisoning indexes, the changes in carbonic anhydrase activity were also detd. Simultaneously with deterioration of the general phys. condition, as far as Pb intoxication is concerned, carbonic anhydrase was also depressed. Pb poisoning brings about a depression (already proved *in vitro*) of the enzyme *in vivo*. From *Abstr. Bulgar. Sci. Lit., Med. Phys. Cult.* 6(4), 32 (1963). TCFR

Carbon dioxide transport in the blood of patients with silicosis and silicotuberculosis. Khr. Tzolov. *Nauchni Tr. Nauchnoissled. Inst. Ochrana Truda Prof. Zaboljavanija* 10, 77-85 (1963) (Russ.). The transport of CO₂ in the blood is studied in 270 patients affected with silicosis (with varying degree of manifestations of pathol.) and silicotuberculosis. The partial CO₂ tension in alveolar air is relatively low, but it is higher than in arterial blood. The CO₂ phys. dissolved in the blood is also decreased. The total and phys. dissolved amt. of CO₂ in the venous blood is within normal physiol. limits. The venous-arterial difference is insignificant. The progressive deterioration of the silicate induced process results in a comparative increase of the partial CO₂ tension as well as of its phys. dissolved part in the arterial and still more in the venous blood, with corresponding decrease of the venous-arterial difference. A state of hypoxemia is also observed in patients with silicotuberculosis. The septn. of CO₂ from the blood of patients with cytotoxic hypoxemia seems to be the most difficult, whereas in those with anemic hypoxemia the least. The acid-base balance in the blood of patients with sil-