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kovic (Inst. Hyg. Rep. Serbia, Belgrade, Yugoslavia). *Arhiv Hig. Rada Toksikol.* 11(1), 35-44(1960). Hematological and urinalogical examn. of galena miners (ore contained PbS 2.54, ZnS 3.37, CuFeS 0.38, FeAs 0.58, and FeS₂ 15.15%) indicated that the level of Pb in blood and urine was approx. the same as the level among people not exposed to mine dust, 40 γ /l. The Pb level was higher in inhabitants of a community living in the vicinity of the mine, 60-220 γ /l. The possibility of Pb poisoning by dissoln. of PbS in gastric juices was demonstrated, but no clin. case of such poisoning was established. T. Jurecic

Effects of hair lacquer sprays on the lungs. A. I. G. McLaughlin, P. L. Bidstrup, and M. Konstam. *Food Cosmet. Toxicol.* 1(2), 171-88(1963). No abnormal x-ray appearances suggesting the presence of thesaurosis (hair spray lung disease) were found in 505 hairdressers, of whom 47 were men's hairdressers used as controls, exposed to shellac-based hair sprays and/or poly(vinylpyrrolidinone) (PVP)-based sprays for varying periods from less than 1 to 37 years. Particles of hair spray were small enough to be inhaled and retained in the lungs; in thermal precipitator and konimeter field samples over 95% of the particles were less than 1 μ in diam.; in laboratory samples 88 and 77% of the particles were less than 1 μ . Droplets from hand sprays were as small as those from pressure sprays. One case of thesaurosis (interstitial pulmonary fibrosis with many giant cells and HIO₄-Schiff-staining granules in a woman exposed for 11 years to shellac-based hair sprays was reported. 19 references. D. M. Greninger

Arsine poisoning in a slag-washing plant. M. D. Kipling and R. Fothergill (H. M. Med. Insp. Factories, Birmingham, Engl.). *Brit. J. Ind. Med.* 21(1), 74-7(1963). During the washing of fluorspar slag (As content 10-15 p.p.m.) in the course of Al metal recovery from scrap, AsH₃ was released into the surrounding atm. at a level of 5 p.p.m. Poisoning occurred in 5 workers, characterized by hemoglobinuria, hemolytic anemia, and jaundice. As content (by activation analysis) in hair was 0.23-0.40, and in nails, 1.66-2.50 p.p.m. in 2 subjects. The scrap did not contain As in excess of 10 p.p.m. Andrew L. Reeves

Byssinosis in the Egyptian cotton industry; change in ventilatory capacity during the day. M. A. El Batawi, R. S. F. Schilling, F. Valic, and Joan Walford (High Inst. Publ. Health, Alexandria, Egypt). *Brit. J. Ind. Med.* 21(1), 13-19(1964). Mean dust concn. at work (in mg./m.³), incidence of byssinosis (%), the initial mean adjusted indirect max. breathing capacity (l./min.), and change of the latter during a workday (both in l./min.) in different groups of 99 male workers of a cotton ginny and spinning mill are resp., as follows: ginners, 15.3, 33, 106.5, and -7.9; manual mixers, 34.0, 50, 105.6, and -8.2; starting-process blowers, 9.4, 25, 122.7, and -9.8; end-process blowers, 1.9, 10, 122.5, and -2.8; carders, 4.2, 43, 114.4, and -14.2; and power station workers, 0, 0, 124.1, and +1.9. Byssinotic workers showed consistently larger daily inhibition than unaffected workers in all occupational groups. The av. l./min. for all byssinotics was 106.7, for normal cotton workers 116.8, and for the power-station workers, 126.3 l./min. Safe limit of dustiness in cotton gins and mills is 1 mg./m.³; the general atm. pollution of the surrounding area plays no role.

Hazard to production workers handling estrogens. H. Kneidel (Berlin-Chem., Berlin-Adlershof, Ger.). *Zentr. Arbeitsmed. Arbeitsschutz* 13(12), 285-6(1963). A fine dust of stilbestrol and (or) of related compds. is created during drying, confectioning, and packaging of estrogens. Endocrine disorders were observed in exposed workers, including gynecomastia in men and menstrual disturbances in women. Both sexes excreted estrogen in the urine. Control measures are discussed.

Aluminum pneumoconiosis. I. In vitro comparison of stamped aluminum powders containing different lubricating agents and a granular aluminum powder. B. Corrin (Univ. Manchester, Engl.). *Brit. J. Ind. Med.* 20(4), 264-7(1963). Powdered Al is available as granules produced from molten metal, or as flakes produced by stamping process. The latter are coated with stearin (I) or with mineral oil (II) used as lubricants; atm. oxidn. to Al₂O₃ is equally prevented by I and II but reaction with H₂O to Al(OH)₃ + H₂ is prevented by I only. In the course of 72 hrs. *in vitro*, up to 89% of the II-coated powder reacted in this manner (vs. none of I-coated powder). This reaction may be involved in the fibrogenicity of Al in humans; II-coated flakes appear to be most productive of Al pneumoconiosis, while dusts of Al₂O₃ or of Al₂O₃-coated Al are inert. Therapeutic forms of Al (for the management of silicosis) belong in the latter category. II. Effect on the rat lung of intratracheal injections of stamped aluminum powders containing different lubricating agents and of a granular aluminum powder. *Ibid.* 268-76. Stamped Al powders, either acetone-washed (lubricant-free), or contg. 0.2% of either I or II (47% 1-5 μ diam., the rest mainly smaller), and granular Al powder (11% 1-5 μ diam., the rest larger) were intratracheally injected, in doses of 100 mg. in 1 ml. sterile saline, into 17-37 rats. All 3 varieties of the stamped powder proved to be highly and about equally

fibrogenic, with well-established pathology after 4 months. The granular powder provoked a mild foreign-body reaction only, without fibrosis; this is attributable to atm. oxidn. of the surface since this powder is manuf. without lubricant. The lack of pathogenic difference between I and II coated stamped powders may be due to the action of body fluids in pulmonary tissue which apparently penetrat: either coating upon prolonged contact.

Peritoneal tumors in asbestosis. J. B. Enticknap and W. J. Smither (Eastham Mem. Hosp., Essex, Engl.). *Brit. J. Ind. Med.* 21(1), 20-31(1964). Diffuse abdominal tumors were found in 11 patients with history of asbestos exposure. The extent of exposure was often small, and all cases showed remarkably slight degree of pulmonary fibrosis. Andrew L. Reeves

Blood groups of miners with coal-workers' pneumoconiosis and bronchitis. I. T. T. Higgins, P. D. Oldham, G. S. Kilpatrick, R. J. Drummond, and B. Bevan (Welsh Natl. School Med., Cardiff, Wales). *Brit. J. Ind. Med.* 20(4), 324-9(1963). Survey of 1250 miners and ex-miners does not support previous speculation that incidence of occupational respiratory disease is assocd. with a certain blood group. Andrew L. Reeves

Methyl chloride intoxication. J. D. C. MacDonald (Polymer Corp., Sarnia, Can.). *J. Occupational Med.* 6(2), 81-4(1964). Report of 8 cases showing headache, blurring of vision, loss of coordination, and reversible personality change involving moroseness, depression, and anxiety. Routine urine and blood tests have no diagnostic value. Andrew L. Reeves

A follow-up study of lead workers. I. Dingwall-Fordyce and R. E. Lane (Univ. Manchester, Engl.). *Brit. J. Ind. Med.* 20(4), 313-15(1963). Retired workers with history of Pb exposure show increased mortality attributable to cerebrovascular incidents but not to neoplasia. Andrew L. Reeves

Hazardous lead exposures among structural-steel workers. Heinrich G. Brugsch (Commonwealth of Massachusetts, Boston). *New Engl. J. Med.* 270, 211(1964). Cases of Pb poisoning or abnormally high Pb excretion in the urine occurred among workers engaged in burning, with acetylene torches, bridge structures that had received paint contg. Pb and among bridge workers engaged in spray painting. Marion Horn Peskin

Working conditions with the blowing agent, ChKhZ-5. M. V. Aldyreva. *Vestn. Tekhn. i Ekon. Inform. Nauch.-Issled. Inst. Tekhn.-Ekon. Issled. Gos. Kom. Sov. Min. SSSR po Khim.* 1962(7-8), 152-5. Gaseous decompn. products, including H₂S, SO₂, org. S compds., aromatic amines, and MeOH, are generated by heating the blowing agent ChKhZ-5 in both a pure form and as an ingredient of a rubber mixt. The max. permissible concn. of ChKhZ-5 dust in the air of working areas is 0.005 mg./m³. To improve working conditions in manuf. of porous rubber, ChKhZ-5 should be replaced with another less toxic blowing agent. From *Ref. Zh., Khim.* 1963, Abstr. No. 111251.

Effect of unithiol and Ca di-Na ethylenediaminetetraacetate on trace element excretion. A. S. Vakhnitskii. *Gigiena i Fiziol. Truda, Proizv. Toksikol., Klinika Prof. Zabolevanii* (Kiev: Gos. Izd. Med. Lit. Ukr. SSR) Sb. 1963, 176-8. Treatment of 71 patients with chronic heavy-metal poisoning with unithiol (I) and Ca di-Na ethylenediaminetetraacetate (II) considerably increased excretion of Cu⁺⁺ and Mn⁺⁺ in the urine. During treatment with I and II the trace element content in the diet should be increased. From *Ref. Zh., Biol. Khim.* 1963, Abstr. No. 21F1974. MVRK

Subacute and chronic intoxication of workers with trichloroethylene in the production of caprolactam. V. A. Antonyuzhenko, I. M. Kashtanova, R. G. Khil, and V. N. Trefilov. *Prom. Toksikol. i Klinika Prof. Zabolevanii, Khim. Etiol.* (Moscow: Gos. Izd. Med. Lit.) Sb. 1962, 276-8. The nature of subacute and chronic intoxication with trichloroethylene (I) in the manuf. of caprolactam (content of I in air 0.01-0.05 mg./l., max. permissible concn. 0.01) was studied. Besides I, cyclohexanone, cyclohexanone oxime, SO₂, and NH₃, whose concns. did not exceed the max. allowable but increased the toxicity of I, were found. Thirteen of 150 workers exhibited symptoms of chronic intoxication with I. For all 13, urinary trichloroacetic acid amounted to 68-210 mg./l. Trichloroethanol was absent. From *Ref. Zh., Khim.* 1963, Abstr. No. 151275. MJRK

Accumulation of lead in the workers of lead-zinc mines and concentration plants. A. A. Kasparov. *Tr. Tadzhiksk. Med. Inst.* 51, 53-7(1961). During examn. of 51 workers (21 women and 30 men), occupied in operations on flotation and crushing of ore, increased content of Pb in urine (for 41 persons to 0.05 mg./l., for 10 persons >0.05 mg./l.) was noted. The content of hemoglobin, erythrocytes and leukocytes in blood remained in the normal range. From *Ref. Zh., Khim.* 1963, Abstr. No. 151260. MJRK

Toxicology of quinone. T. M. Osina. *Prom. Toksikol. i Klinika Prof. Zabolevanii, Khim. Etiol.* (Moscow: Gos. Izd. Med. Lit.) Sb. 1962, 137-9. Effects of doses of quinone (I) vapors on mice were detd. The L.D.₁₀₀ was 0.32-0.34 mg./l. (for a 2-hr. exposure). The smallest concn. causing changes of the central nervous system of mice was 0.04 mg./l. Irritating