

... which are analogous to those observed in individuals with diphtheria. Vladimir Kostka

... also: Mammalian Pathological Biochemistry, Section 12. Free synthesis of rat immunoglobulins—cell-free system for synthesis prepared from lymph-node microsomal vesicles (Sect. 2) 18658j. Immunochem. studies on Salmonella—detn. of nature of specific polysaccharide of Salmonella strasbourg, 14 Salmonella (Sect. 2) 18799f. Topochem. arrangement of oligosides in erythrocyte membrane (Sect. 2) 18808h. Comparative study of reaction of heparin with hexamine cobalt and lysozyme (Sect. 2) 18724c. Ascorbic acid oxidase isolated from different plant materials (Sect. 3) 19064z. Effect of hormone prepn. on protein fractions of immunized animal (Sect. 4) 19263p. Changes in body compn. during long-term treatment with cortisone and anabolic steroids in asthmatic subjects (Sect. 4) 19188t. Simplified batch method for isolation of glycoproteins from normal and pathological sera and (Sect. 6) 19409r. Biol. activities of polyelectrolytically active macromols. (Sect. 8) 19711h. Immunoelectrophoretic analysis of antigenic components of *Bacillus megaterium* (Sect.

8) 19757c. Sepn. and characterization of sol. adenovirus type 9 components (Sect. 8) 19716p. Structure and kinetics of formation of antibody in turtle (Sect. 9) 19946p. Difference in proteolytic activity of spleen cells of young and immunologically mature rabbits (Sect. 11) 20213d. Corticosteroid-binding globulin—biochemistry, physiology, and phylogeny (Sect. 11) 20107x. Detection of embryo-specific globulins in serum of embryos and fullterm human infants (Sect. 11) 20150f. Comparative immunoglobulin detns. in human serum (Sect. 11) 20178w. Sensitivity to some fungal allergens during penicillin prepn. (Sect. 14) 20587d. Role of histamine in production of immediate reactions of wheal and angioneurotic type (Sect. 15) 20854p. Effect of some ganglion-blocking preps. on development and course of anaphylactic shock (Sect. 15) 20830c. Influence of chloramphenicol in immune reactions in rats (Sect. 15) 20806z. Methodology and trends in study and prevention of air pollution by chem. allergens (Sect. 50) 15779p. Antigen with nucleoside determinant (Sect. 63) 16099d. Fractionation of significant quantities of biol. active preps. by prolonged preparative paper electrophoresis (Sect. 2) 18711w. Response of lymphocytes to penicillin; comparison with skin tests and circulating antibodies in man (Sect. 15) 20706a.

14—TOXICOLOGY

T. R. TORKELSON

20546q Chemical analysis of aflatoxin. R. Monacelli and M. Manzone (Inst. Super. Sanita, Rome). *Ann. Ist. Super. Sanita* 3(Pt. 3-4), 316-26(1967)(Ital.). A review with 23 references. Antonio A. Rizzoli

20547r Toxicity of mercury vapor. G. A. Neville. *Can. J. Med. Educ.* 3(1), 4-7(1967)(Eng.). A review is given of Hg toxicity, covering its history, threshold limits, mode of absorption and distribution, and treatments for Hg poisoning. 33 references. CRJN

20548s Fluorocarbon toxicity and biological action. J. Wesley Clayton, Jr. (E. I. du Pont de Nemours and Co., Wilmington, Del.). *Fluorine Chem. Rev.* 1(2), 197-252(1967)(Eng.). An extensive review summarizes the known toxicology of the fluorocarbons, the fluoroalkenes, and the fluoropolymers, and discusses various aspects of their biol. action. Much more information is needed on the mechanism of action of these substances. Understanding their mode of action in relation to their chem. constitution should be a governing factor in further investigations of fluorocarbon toxicity. 57 references.

20549t The effect of fluorides on livestock, with particular reference to cattle. James L. Shupe and Ernest W. Alther. *S. Agr. Res. Serv., Logan, Utah. Handbuch Exp. Pharmacol.* 20(1), 307-54(1966)(Eng.). A review of the effects of fluorides on sheep, swine, horses, turkeys, and, esp. cattle. The effects of fluorosis in cattle on teeth, bones, hair coat, skin, soft tissue, kidney, liver, reproduction, blood, placental transfer, milk production, digestion, metabolism, and enzymes are discussed. A comprehensive guide for diagnosing and treating fluorosis was given. 89 references. M. M. Judge

20550m The mammalian toxicology of organic compounds containing fluorine. J. Wesley Clayton, Jr. *Handbuch Exp. Pharmacol.* 20(1), 459-500(1966)(Eng.). A review of mammalian toxicology, history, and uses of fluorocarbons, including discussion of the toxicology of fluoroalkanes, fluorocycloalkanes, fluoroalkenes, fluoroalcohols, and fluoroaromatic compounds, their acute and chronic inhalation toxicities, acute oral and eye toxicities, and their biol. activities. 72 references. Patricia W. Heenan

20551n Botulism. Anton Skulberg (Forskningsutvalget i Helsevesen, Oslo, Norway). *Norsk Pelsdyrblad* 41(8), 259-61(1967)(Norweg.). A review of the subject in connection with some cases of poisoning of mink in Telemark, Norway, due to *Clostridium botulinum* toxin in the mink feed.

20552p Botulism in mink. Steinar Hauge, Anton Skulberg, and Ola Grini (Norges Veterinaerhøyskole, Oslo, Norway). *Norsk Pelsdyrblad* 41(18), 510-11(1967)(Norweg.). A review of the subject in connection with the recent cases of poisoning in mink farms with *Clostridium botulinum* in Telemark and Aust-Agder, Norway. As mink is an animal very sensitive to *C. botulinum* toxin, vaccination of the puppies should be recommended as a prophylactic means. Valborg Aschehoug

20553r Short term chemical danger. Georges Le Moan (Paris). *Pharm. Fr.* 1967(15), 499-504(Fr.). A review is given of the hazards of explosion, poisoning, etc., and of the precautions that should be taken against them. George M. Hocking

20554r Neurotoxicity of anticholinesterase agents. Analysis of the action of various centrally acting drugs. G. Bignami and L. Gatti (Ist. Super. Sanita, Rome). *Proc. Eur. Soc.*

Study Drug Toxicity 8, 93-106(1967)(Eng.). The report summarizes the behavioral effects of anticholinesterases, and evaluates the usefulness of behavioral methods for toxicological investigations with Para-oxon, parathion, Chlorthion, Systox phosphamide, physostigmine, and galanthamine. 45 references. P. S. Sarin

20555s Neurotoxic side effects of certain organophosphorus compounds. W. N. Aldridge and J. M. Barnes (Med. Council Labs., Carshalton, Engl.). *Proc. Eur. Soc. Study Drug Toxicity* 8, 162-8(1967)(Eng.). A review of delayed neurotoxic effects of some organophosphorous anticholinesterases. 20 references. Jennifer A. Edwards

20556t Biochemical and physiological causes of the toxicity of alcohol. Ryszard Wiktor Schramm and Halina Schrammowa (Univ. A. Mickiewicza, Poznan, Poland). *Psychiat. Pol.* 1(3), 343-7(1967)(Pol.). A review with 47 references. V. Pomeranz

20557u In vivo deiodination of Rose Bengal-¹²⁵I in rats after administration of CCL₄. H. Bergner (Humboldt-Univ., Berlin). *Acta Biol. Med. Ger.* 16, 294-9(1966)(Ger.). About double the amt. of ¹²⁵I-labeled Rose Bengal was deiodinated in vivo in rats intoxicated by 0.1 ml. CCL₄/100 g. as compared with controls. With a protein-free diet, the effect was smaller and could not be detected after 6 days. From CZ 1967(30), Abstr. No. 1564. MZCR

20558v Effect of acute and chronic hepatitis and of fatty liver degeneration on erythropoiesis. B. Sari, S. V. Kirilina, Sh. Dan, and L. Oros. *Acta Conv. Med. Internae Hung., 3rd., Budapest 1965*, 923-8(Russ.). Rabbits were orally given 3 doses of 0.25 mg. CCl₄/kg. and then i.m. 3 doses of 15 mg. phenylhydrazine (I)/kg. Consequently, plasma enzymes (alk. phosphatase, aldolase, glutamic-oxalacetic transaminase) increased, but erythrocyte enzymes did not change or slightly decreased. After a few days, serum enzymes normalized and administration of I did not further alter their level. At the same time, erythrocyte enzymes increased in activity due to I and the increase was correlated with the no. of reticulocytes. Later, these enzymes normalized as well, with the exception of glucose-6-phosphate dehydrogenase and aldolase, whose increase outlasted normalization of the reticulocytes, indicating the presence of a large no. of young erythrocytes in the peripheral blood. These changes were similar to those in erythrocyte enzymes in animals given only I without CCl₄; it is concluded, therefore, that a slight acute injury to the liver does not affect erythropoiesis. Chronic injury decreases erythrocyte survival time and accelerates erythropoiesis. M. Kalab

20559w Poisoning with organic mercury compounds in the Niigata prefecture along the Agano river. I. Detection of methylmercury compounds in hair of patients by gas chromatography. Yukio Takizawa and Takao Kosaka Fak., (Med. Univ. Niigata, Japan). *Acta Med. Biol. (Niigata)* 14(3), 153-61(1966)(Ger.). Eight patients exhibited poisoning attributable to organomercury compds. Hair from the patients was treated with detergent, water, HCl, CHCl₃, and dithizone before anal. by gas chromatog. was carried out with a Shimadzu GC-1C app. with electron capture detector (ECD-IA) with the conditions: column 1.5 m., inner diam. approx. 3 mm.; column temp. 190-5°; 15 or 25% diethylene glycol succinate on 60-80 mesh Shimalite; N carrier gas at 35 ml./min.; detector temp. 200°; sample size 0.5 µl. Sepn. of methyl-, ethyl-, and butylmercury chlorides was achieved with the ECD-IA detector, but not by flame ionization. D. S. Plaut

20560q Characterization of subtle toxicity of certain plastic

components used in manufacture of the polyvinyls. W. L. Guess, Sol Haberman, D. F. Rowan, R. K. Bower, and John Autian (Univ. of Texas, Austin). *Amer. J. Hosp. Pharm.* 24(9), 494-501(1967)(Eng). The techniques useful in detecting the subtle toxicity of some ingredients used in the manufacture of poly(vinyl chloride) plastics, used in the production of containers and closures for certain biologicals, are discussed. Methods of detection include tissue culture tests, animal expts., and effects on antibody reactions and on washed blood cells. Certain heat stabilizers showed a marked incompatibility with the biological systems used. Reactions with 5 phthalizers were more subtle. The results suggest the need for further research into the relations between various levels of toxicity and potential harm in humans.

H. M. Burlage

20561r Some chemical aspects concerning the occurrence of aflatoxin in foods and feeds. W. D. Raymond (Trop. Prod. Inst., London). *Ann. Ist. Super. Sanita* 3(Pt. 3-4), 289-306(1967)(Ital). This paper reviews various aspects of the problem of aflatoxin in foods and feeds. The agricultural, mycological, chemical, analytical, biochemical, toxic, commercial, and public health aspects of the problem are discussed. The presence of mycotoxins in foods and feeds also is summarized. 47 references.

Katherine H. Fisher

20562a The effect of diet on carbon tetrachloride metabolism. A. A. Seawright and A. E. M. McLean (Med. Res. Council Labs., Carshalton, Engl.). *Biochem. J.* 105(3), 1055-60(1967)(Eng). Blood and liver contents of CCl_4 were measured at intervals after an oral dose, in rats given stock and protein-free diets. The values did not correlate with the resistance to poisoning found in the rats given protein-free diets. Metabolism of CCl_4 to CO_2 in vivo and in liver microsomal preparations was depressed in animals given protein-free diets. Rats given a single dose of DDT are highly sensitive to CCl_4 poisoning. The livers of such animals had an increased microsomal protein content and greatly increased microsomal activity in the demethylation of Pyrimidon and in the conversion of ^{14}C into $^{14}\text{CO}_2$. The incorporation of leucine- ^{14}C into protein by liver slices is depressed by CCl_4 . This effect is decreased by the addition of SKF 525A and in slices from rats given protein-free diets. It is suggested that the toxicity of CCl_4 is closely linked to its metabolism.

RCFG

20563t An attempt to influence the collagen defect in experimental lathyrism. K. Trnavsky, Z. Trnavska, B. Skrovina, and L. Cebecauer (Res. Inst. Rheumatic Diseases, Piestany, Czech.). *Biochim. Physiol. Tissu. Conjointif. Conf. Commun. Symp. Int., Lyon 1965*, 663-70(Pub. 1966)(Eng). To study the influence of hydrocortisone (I) and Na salicylate (II) on the synthesis of collagen proteins and on changes in the epiphyseal growth plates in lathyrus rats, experimental lathyrism was induced in 36 male rats by feeding a 60% concentration of sweetpea seeds (*Lathyrus odoratus*) for 30 days. Twelve of these rats were simultaneously treated with I (10 mg./kg. body wt. daily), i.m.; another group of 12 were treated with II (250 mg./kg. daily), i.p. The 3 experimental groups were compared with 3 nonlathyrus control groups treated similarly. After 30 days, total hydroxyproline (III), dialyzable III, and acid-sol. III were determined in dorsal skin extracts. For histological evaluation, the tibial growth plates from decalcified hind limbs were microscopically examined. Total III was not significantly changed in any of the groups studied. In intact (control) animals resulted in decreased levels of the neutral salt-sol. III and dialyzable III. II had no effect on the sol. fractions. Feeding with sweetpea increased the neutral and acid sol. III; the greatest part of the lathyrus neutral sol. fraction being dialyzable. In lathyrus rats, I treatment depressed the elevated amounts of sol. III as well as dialyzable III. Even more effective in restoring normal conditions in lathyrus rats was II treatment. Histologically, the cells of the epiphyseal plate in lathyrus animals showed elevated mitotic activity but delayed maturation. The synthesis of ground substance in the intercellular spaces was also disturbed with demasked collagen fibers, granular decomposition, and some cystic areas. I depressed lathyrus toxicity, while II restored the tibial growth plate to nearly normal. 19 references.

L. K. Allen

20564u Toxicity of 1,2-dichloroethane-extracted fish protein concentrate. I. C. Munro and A. B. Morrison (Food Drug Res. Labs., Dept. Natl. Health Welfare, Ottawa). *Can. J. Biochem.* 45(11), 1779-81(1967)(Eng); cf. CA 67: 52842d. Wistar rats were fed a protein-free diet with 50% protein from lyophilized or extracted cod fish (lyophilized cod extd. for 24 hrs. with iso-PrOH or 1,2-dichloroethane (I), then heated for 2 hrs. at 60° in vacuo) which contained 40 mg. % chlorocholine chloride (II). Cod fillets extracted with I were toxic to the growing rat. The toxicity was not due to II but was caused, in a MeOH ext. of the I-treated fish. However the MeOH-extd. fish did not support growth even when supplemented with cystine and histidine.

Dorothy J. Buchanan-Davidson

20565v Significance of carbon monoxide from cigarette smoking inside a car. Milan Srch (Karlova Univ., Hradec-Kralove, Czech.). *Deut. Z. Gesamte Gerichth. Med.* 60(3), 80-9(1967)(Ger). A forensic opinion from the author was needed in the

case of a 30-year-old woman who had died in a closed car with a garage. In a test on 4 persons, 2 of them smokers and 2 non-smokers, who sat in a closed car with a cubature of 2.09 and smoked 5 cigarettes with inhalation during 60 min., the hemoglobin concentration in the blood of the smokers rose from 5 to 10%, that in the blood of the non-smokers from 2 to 5%. Under such circumstances a fatal intoxication was deemed not possible. Consequences for traffic safety are discussed.

D. H. Stofen

20566w Histoautoradiographic studies on mesenchymal duct cells of thioacetamide-induced cirrhosis of the liver in mice. Balthasar Wohlgenuth (Karl-Marx-Universität, Leipzig, Ger.). *Exp. Pathol.* 1(1), 64-71(1967)(Ger). White mice (19-24 weeks) were fed 0.25-0.45 mg. thioacetamide (I) in the drinking water. Controls without I were treated further by the same procedure. After 70 days the animals were injected i.p. with 3 μCi of thymidine (^3H)/g. body wt. After this the animals were killed and the livers were fixed in HCHO; sections (5 μ) were washed with inactive II to remove unincorporated ^3H , and autoradiograms were exposed for 4, 6, 8, and 19 days at 15°. After days the development of cirrhosis had proceeded widely in the treated animals. The parenchyma was penetrated by reticular and collagenous fibrillar structures as well as with mesenchymal and duct cells, which increased in relative number. The incorporation rate of ^3H into hepatocytes increased from 0.03 (controls) to 0.24% in experimental animals; in Kupffer's cells the respective indexes were 1.67 and 2.41%. Labeling of hepatic capsule endothelial cells or of the bile duct epithelium showed no difference between controls and I-treated animals. The duct cells exhibited a labeling rate similar to that of Kupffer's cells in treated animals. As early as 1 hr. after II application, blackened mitotic figures could be seen in Kupffer's cells, both in controls and in I-treated animals. A possible shortening of the cell phase due to unexplained reasons was considered. 34 references.

E. Talaftant

20567x Histamine level and histamine fixation in the brain tissues and skin in rats under the effect of industrial poison R. S. Eizengart (Sanepidst., Moscow). *Farmakol. Toksikol.* 30(5), 608-9(1967)(Russ). Homogenates from rat brain and from rat skin were tested chromatographically for histamine concentration, and histamine fixation after rats had been exposed either to threshold concentrations or to toxic doses of methylcyclohexanylethylene sulfide, diethylaminoethyl mercaptan, or 2-methylvinylpyridine. At threshold levels there was less histamine fixation in skin and more in brain tissue. After toxic doses the changes were irregular both in concentration and in histamine fixation.

Julian F. Smith

20568y The toxic peptides of *Amanita phalloides*. Theodor Wieland (Gesellschaft, Frankfurt/M., Ger.). *Fortschr. Chem. Org. Naturst.* 25, 214-50(1967)(Eng). A review is given; fatal mushroom poisoning is almost exclusively attributable to members of the genus *Amanita*. Their toxins are completely absorbed from the gastrointestinal tract, while their action is primarily on the liver; no specific therapeutic agent is known at present. Thus, the understanding of the chemical structures and the mechanism of the action of the toxins is of great importance from the therapeutic standpoint. Isolation of the toxic ingredients, the chemical structure of the toxic peptides, the picrotoxin and the amanitin group, and synthetic experiments with amino acids and cyclopeptides are covered. 86 references. CSJ.

20569z Comparative toxicity of mercaptobenzimidazole and its zinc salt. N. V. Mezentseva. *Gig. Otsenka Khim. Fakt. Vresh. Sredy* 1966, 119-20(Russ). Mercaptobenzimidazole and its zinc salt (II) were studied in acute (mice), subacute (rats) and chronic (rabbits) experiments. LD_{50} internally for mice was 1.2 for I and 737 mg./kg. for II. The animals were exposed to I and II dust for 2 hrs. daily for 15 days in concentrations of 400 mg. m^{-3} . A lag in weight, increase in the content of amino N in the urine, and disturbances in the nervous system were observed. Morphological alterations were found only in the lung tissue (pneumonia with slight atrophy of the bronchial mucosa). In chronic experiments on rabbits I caused disorder in the protein-forming function of the liver. II increased the lipid content in the blood. I increased the aldolase content, and II decreased the cholinesterase activity of the blood. I decreased the erythrocyte count in the blood to 20,000. A proliferative reaction was found in the lungs; edema and fatty dystrophy were observed in the liver, and punctate hemorrhages were observed in the myocardium. II caused slight edema in parenchymatous organs. I had no irritating effect on the skin or mucosa of the eye, whereas II caused moderate irritation. From *Ref. Zh. Farmakoterap. Sredy. Toksikol.* 1967, Abstr. No. 7.54.831.

MVRV

20570t Methods for the qualitative and quantitative determination of aflatoxins. E. H. Marth (Univ. of Wisconsin, Madison). *J. Milk Food Technol.* 30(10), 317-20(1967)(Eng). Qual. and quant. measurements of aflatoxins by means of the thin-layer chromatogram can be improved by substituting a densitometric "reading" of the thin-layer plates for visual examination. Examination of small samples (down to 0.3 mg.) can be accomplished by a thin-layer chromatogram procedure which employs a Me-