14—TOXICOLOGY

T. R. TORKELSON

41109x **Toxicology of vinyl chloride.** Schottek, Wolfgang (Abt. Arbeitstoxikol., Holzweissig, Ger.). *Chem. Tech. (Leipsig)* 1969, 21(11), 708–11 (Ger). A review with 24 refs. The toxicity of vinyl chloride in animals and humans, and the relation of the chem. structure of the compd. to its toxicity were discussed. CCJG

41110r **Microscopically contrasted heavy metal intoxication. Silver sulfide process, a method for localized histochemical detection of heavy metals in tissues.** Haider, Gerhard (Ger.). *Mikrokosmos* 1969, 58(9), 272–5 (Ger). A review of work is presented which illustrates the value of the combination of light microscopy with histochem. techniques for the detection, localization, and identification of Hg, Pb, Bi, Fe, Zn, and Cu in cells and tissues. Highlights of the silver sulfide histochem. procedure are presented along with representative photomicrographs. 6 refs. Nellie G. Dehnbostel

41111s **Development of the hemodynamic, biochemical, and morphologic changes in experimental endotoxin shock.** Stengert, Krzysztof (Z Zakl. Anestezjologii, AM, Lodz, Poland). *Postepy Hig. Med. Dosw.* 1969, 23(5), 601–59 (Pol). A review is given of methods for detg. hemodynamic, biochem., and morphol. changes, the course of changes in dogs, clin. evaluation and patterns, and damage to tissues and organisms during exptl. endotoxin shock. 146 refs. Y. Pomeranz

41112t **Saponins.** Birk, Yehudith (Hebrew Univ., Rehovoth, Israel). *Toxic Const. Plant Foodst.* 1969, 169–210 (Eng). Edited by Liener, Irvin E. Acad. Press: New York, N.Y. Dietary source, metabolism, and effects of various saponins are given with methods for qual. and quant. analyses. 167 refs. E. A. Hodgdon

41113u **Chromatographic identification of psychotropic drugs.** Phillips, Geoffrey F.; Gardiner, Jane (Lab. Govt. Chem., London; Engl.). *J. Pharm. Pharmacol.* 1969, 21(12), 793–807 (Eng). The thin-layer chromatog. of 3 classes of psychotropic drugs, phenethylamines, tryptamines, and erganes, has been investigated. Published methods are reviewed and R_f data, normalized by a graphical technique, are reported for extensions and modifications of some of these systems. Optimum forensic sorting procedures are recommended. RCFC

41114v **Estimation of lead in urine by atomic absorption analysis.** Tairi, Yoshiko. *Nippon Eiseikensa Gishikai Zasshi* 1969, 18(5), 389–91 (Japan). The Pb^{2+} was extd. into iso-BuCOMe soln. from 30% NH_4OH. The recovery rate was 99.9%. The reproducibility of at. absorption measurement was 1.4%. No interference from other ions was noticed. T. L. Chang

41115w **Determination of toxic substances and their metabolites in biological fluids by gas chromatography. I. Trichloroethanol in urine.** Sedivec, Vaclav; Flek, Jan (Ustav Hyg. Prace, Prague, Czech.). *Prac. Lek.* 1969, 21(7), 301–5 (Czech). See *CA* 70: 113446p. VNJZ

41116x **Aflatoxin B_1 in the excretion of aflatoxin-poisoned rats.** Chou, Ming-Wu; Tung, Ta-Cheng (Coll. Med., Nat. Taiwan Univ., Taipei, Taiwan). *T'ai-Wan I Hsueh Hui Tsa Chih* 1969, 68(8), 389–91 (Eng). Aflatoxin B_1 was detected in the rat urine and feces after i.p. injection of the toxin. Most of the aflatoxin B_1 was excreted in the first 24 hr. The percentage recovery was about 1.5%. A thin-layer chromatographic method was a simple way for detg. the aflatoxin concn. of the excretions, and could provide useful information for detecting it in humans. N. M. Wright

41117y **Paper chromatography of Taxus baccata toxin.** Bubien, Zenon (Wyzsza Szk. Roln., Wroclaw, Poland). *Zesz. Nauk. Wyzsz. Szk. Roln. Wroclawiu, Wet.* 1968, No. 23, 215–21 (Pol). The presence of toxin in *T. baccata* (English yew) needles, in fodder, and in the alimentary tract content was detected by paper chromatog. The alkaloid was extd. from the biol. material by Et_2O, purified with active C, and chromatographed in the form of aq. HCl soln. The chromatograms were developed at 18° by the ascending technique, using as solvent either BuOH–80% AcOH–anhyd. EtOH–H_2O (50:7:2:15), or 75% aq. $(NH_4)_2SO_4$. The R_f values were 0.95 and 0.75, resp. The toxin spots were stained by the Draggendorf reagent. Irena Kloczko

41118z **Errors of converting a urine alcohol value into a blood alcohol level.** Kaye, Sidney; Cardona, Eduardo (Sch. Med., Univ. Puerto Rico, Rio Piedras, P.R.). *Amer. J. Clin. Pathol.* 1969, 52(5), 577–84 (Eng). Evidence is presented for the inadvisability of calcg. blood EtOH levels on the basis of urine EtOH content. EtOH content was detd. in the blood and urine of 148 patients and the ratio of urine/blood was calcd. The range of ratios was 0.21–2.66 with a mean ratio of 1.28. Blood levels were calcd. from urine levels using a conversion factor of 1.28 and compared with measured values. Calcd. values exceeded actual values by at least 0.02 g/ml in 21.5% of the cases and were lower by the same amt. in 34.5% of the cases. J. R. Macnab

41119a **Ethylene glycol toxicity in the monkey.** Roberts, James A.; Seibold, H. R. (Tulane Univ., Covington, La.). *Toxicol. Appl. Pharmacol.* 1969, 15(3), 624–31 (Eng). The toxic effects of ethylene glycol in several macaque species are reported. The compd. was administered in the drinking water at concns. of 0.25–10%, and histol. studies were made after acute and chronic administration. With the exception of a few animals (which had Ca oxalate crystals in the brain), significant pathol. alterations were limited to the kidneys. Animals receiving 15 ml/kg or more of ethylene glycol had Ca oxalate crystals within proximal renal tubules and assocd. tubular degeneration. Despite the absence of crystals in animals receiving <15 ml/kg, mild glomerular damage was found, and azotemia occurred in some animals, suggesting a toxic effect of ethylene glycol apart from its conversion to oxalic acid. RCZB

41120u **A clinicopathologic study of the effects of riot control agents on monkeys. IV. o-Chlorobenzylidene malononitrile (CS) grenade.** Striker, G. E.; Streett, C. S.; Ford, D. F.; Herman, L. H.; Helland, D. R. (Edgewood Arsenal, Md.). *U.S. Clearinghouse Fed. Sci. Tech. Inform., AD* 1967, AD-808-732, 39 pp. (Eng). Avail. CFSTI. From *U.S. Govt. Res. Develop. Rep.* 1969, 69(19), 123. A study was made of the order, severity, and resolution of pathol. changes in monkeys exposed to CS. Monkeys were exposed to CS (2700, 8500, 28,500, or 80,000 mg min/m^3). The most prominent lesions seen after the 2 lower doses were mild pulmonary congestion, bronchorrhea, emphysema, and atelectasis. These lesions cleared by 72 hr but recurred at 1 week and 30 days. Oral and nasal discharges and dyspnea appeared early after a level of 28,500. They were most severe between 12 and 24 hr and were resolved by 72 hr. Pneumonia, emphysema, and atelectasis were present 1 week and 30 days after exposure. Significant lesions were seen radiographically only in those monkeys exposed to a level of 80,000. These lesions paralleled those seen on necropsy. At this level edema appeared by 12 hr, peaked between 24 and 48 hr, and cleared by 1 week. Emphysema and bronchiolitis were present 1 week and 30 days after exposure. TCVL

41121v **Experimental study on gas embolism with particular reference to the differentiation between embolic gas and gas from putrefaction.** Pierucci, Giovanni; Gherson, Gemma (Inst. Med. Legale, Univ. Pavia, Pavia, Italy). *Zacchia* 1968, [3] 43(3), 347–73 (Ital). Embolism was induced by injecting air or He i.v. into living (followed by instant death), and i.v. or intracardially into sacrificed, rabbits, and gas was aspirated from the heart at intervals. Putrefaction gas was aspirated from the heart and abdominal cavity of rabbits and human cadavers 1–13 days, and 15–236 days, after death, resp. In samples of air embolic gas, O_2 decreased and 1 hr after death was insignificant; CO_2 was present immediately; N_2 levels were relatively stable, similar to air, for 2 days, then decreased sharply. In He embolic gas, O_2, N_2, and CO_2 were present immediately. Results were essentially the same in rabbits injected before and after death. Av. values for putrefaction gas contents in rabbit and cadaver heart were, resp.: O_2 1.32 and 2.05%, N_2 (usually <50%) 12.13 and 22.06%, CO_2 31.08 and 50.62%; CH_4 appeared early and almost constantly in the rabbit. F. Farnam

41122w **Early effects of carbon tetrachloride on the synthesis of phospholipids in the rat liver and their possible pathogenetic role in fatty liver induction.** Halbreich, A.; Mager, J. (Hadassah Med. Sch., Hebrew Univ., Jerusalem, Israel). *Biochim. Biophys. Acta* 1969, 187(4), 584–7 (Eng). In rats, i.p. injections of CCl_4 in doses as low as 0.5 μl/100 g reduced the ability of liver microsomes to incorporate choline-^{14}C into total phospholipids and labeled L-leucine-1-^{14}C into protein, discernible as early as 10–15 min postinjection and lasting for ≧20 hr. Incorporation patterns of choline were identical whether the radioactive choline was labeled in the Me groups or in the 1,2-carbon atoms. The magnitude of choline inhibition was not altered by varying the dose of labeled choline over a 1000-fold range, attesting to the independence of this phenomenon of the attendant variations in the internal pool size of free choline. Ethionine (1 mg/g) and dimethylnitrosamine (10 mg/100 g) did not affect the incorporation of choline into liver phospholipids, although they inhibited protein synthesis. CCl_4 enhanced the incorporation of ethanolamine-2-^{14}C into liver microsomal phospholipids. The early onset and the long persistence, as well as the specific nature, of the derangement of phospholipid synthesis by CCl_4 suggest a possible role of this phenomenon in the pathogenesis in fatty liver. BKJN

41123x **In vitro inhibition of succinate and pyruvate oxidation by ethanolic extracts of grasses, legumes, and dystrophogenic forages.** Cheeke, Peter R.; Oldfield, James E. (Oregon State Univ., Corvallis, Oreg.). *Can. J. Anim. Sci.* 1969, 49(3), 402–4 (Eng). EtOH exts. of title plants inhibited in vitro oxidn. of both succinate and pyruvate by rat liver homogenates. Exts. of 2 dystrophogenic forages did not inhibit succinate oxidn. more than those of two nondystrophogenic samples. The succinic