

with CH_3CHOAc or CH_3CHOH and identified as 3-hydroxypropylmercapturic acid (*N*-acetyl-S-(3-hydroxypropyl)-L-cysteine, I). There was no evidence for the presence of allylmercapturic acid (*N*-acetyl-S-allyl-L-cysteine, II) in the urine of these animals. II, however, was detected in the urine of rats injected s.c. with CH_3CHCl , S-allylglutathione, and S-allyl-L-cysteine. Rats treated with CH_3CHCl also excreted I. Mercapturic acids apparently arise by the reaction of allyl compounds or their active derivs. with glutathione.

110574p Metabolites of octoclotheptine eliminated in human and rat urine. Quisnerova, Milena; Svatek, E.; Metysova, Jirina (Res. Inst. Pharm. Biochem., Prague, Czech.). *Biochim. J.* 1969, 114(2), 339-42 (Eng). Four metabolites and unchanged octoclotheptine were excreted with dichloroethane from the urine of humans given octoclotheptine. These substances were isolated and purified by column and thin-layer chromatog. By chromatographic, spectrophotometric, and polarographic anal., unchanged octoclotheptine and 3 of the metabolites were identified (noroctoclotheptine, noroctoclotheptine S-oxide, and octoclotheptine S-oxide). The presence of glucuronides in human urine was shown. The same metabolites and unchanged octoclotheptine were also found in rat urine by chromatog.

110575q Mechanism by which leucine and arginine stimulate insulin release in vitro. Milner, R. D. G. (Univ. West Indies, Kingston, Jamaica). *Biochim. Biophys. Acta* 1969, 192(1), 154-6 (Eng). Basal insulin release in young rabbit pancreas slices in vitro was higher in the presence of leucine (5mM) than of arginine (5mM) (in the absence of glucose). Glucagon (5 $\mu\text{g./ml.}$), theophylline (1mM), dibutyryl cyclic AMP (1mM), or L-arginine (5mM) stimulated insulin release in the presence of leucine but not in the presence of arginine. Arginine-stimulated basal insulin release perhaps works by releasing glucagon from the α -cells. The mechanism of the leucine-induced stimulation is different, probably via the adenylyl cyclase system.

110576r Cytochemical study of the distribution and content of nucleoproteins and of some functional groups of proteins in isolated formations of the central nervous system following foreign protein injection. Tumanyan, E. L. (Erevan. Med. Inst., Erevan, USSR). *Biol. Zh. Arm.* 1969, 22(5), 97-8 (Russ). Cytoplasm of various parts of rabbit central nervous system (including intervertebral ganglia, nuclei of the XII cranial nerve, and skin motor area of brain cortex) displayed higher ribonucleoprotein content in animals treated with repeated i.v. injection of normal horse serum. The peak effect was observed on the 4th day after the last injection. No changes were seen in content and distribution of protein SH groups.

110577s DNA synthesis in mouse embryonic fibroblast-like cells in vitro, stimulated by various factors. Vasil'ev, Yu. M.; Gel'fand, I. M.; Gel'shtein, V. I.; Fetisova, E. K. (Mosk. Gos. Univ., Moscow, USSR). *Dokl. Akad. Nauk SSSR* 1969, 187(4), 913-15 [Cytol] (Russ). Autoradiography was used to follow the DNA synthesis in single-layer cultures of mouse embryo fibroblast-like cells in lactalbumin hydrolyzate and ox serum media in the presence of thymidine- ^3H added at various periods of culture age. The index of ^3H inclusion was increased by addn. of testicular or bacterial hyaluronidases, RNase, and digitonin. The rise of ^3H intake was the result of stimulation of the entry of the cells into the S-phase of development.

110578t Effect of pregnancy and oral contraceptives on glucose and insulin metabolism. Taskinen, Marja R. *Duodecim* 1969, 85(11), 676-83 (Finnish). A review. The effect of both pregnancy and oral contraceptives is diabetogenic, and they may cause deterioration of glucose tolerance in healthy women. The organism tends to compensate this by enhanced insulin secretion, which leads to hyperinsulinism. 43 references.

110579u Effect of pyridoxal 5'-phosphate on the strength of skin in vitro. Harkness, Robert D. (Univ. Coll. London, London, Engl.). *Experientia* 1969, 25(10), 1048-9 (Eng). Treatment with 10mM pyridoxal 5'-phosphate (I) in vitro reduced the strength of rat tail skin progressively with time of incubation. The redn. was reversible, with strength returning when the skin rings were placed in buffered saline. Pyridoxamine or pyridoxine at 10mM had no comparable effect. The effect of I was reduced in the presence of lysine. Pretreatment of the skin with NaBH_4 , followed by washing in saline buffer, largely inhibited the effect of I. Pretreatment with NH_4OH also inhibited the effect of I. Treatment with NH_4OH after I prevented the recovery of strength on subsequent transfer to the saline buffer; H_2NNH_2 had a similar effect. The effect of I on skin strength is apparently brought about by rupture of a methine linkages formed between an aldehyde and an amino group.

110580n Diabetogenic effect of L-asparaginase. Khan, Amanullah; Adachi, Mitsuo; Hill, Joseph MacGlashan (Wadley Inst. of Mol. Med., Dallas, Tex.). *J. Clin. Endocrinol. Metab.* 1969, 29(10), 1373-6 (Eng). The effects of *Escherichia coli* L-asparaginase (500-50,000 I.U./kg., i.v.), which has been used to induce remission of human acute lymphatic and myelogenous leukemias, via depletion of an amino acid essential for some neoplastic cells, on rabbit blood and urinary glucose levels were

studied. A dose of 2000 J. L-asparaginase/kg. evoked hyperglycemia and glycosuria in most of the animals; this is equal to a dose which induced hyperglycemia when given to patients. All rabbits receiving 5,000 I.U. L-asparaginase/kg. or more showed diabetogenic responses, but these effects were temporary (2-13 days) and were not associated with any histological changes in the pancreatic islets, except in 1 rabbit which showed islet hyalinization.

110581p Effect of Bidrin on the metabolism of dietary components by the bovine. Lowrey, R. S.; Bowman, Malcolm C.; Knox, F. E. (Coastal Plain Exp. Sta., Agr. Res. Serv., Tifton, Ga.). *J. Dairy Sci.* 1969, 52(9), 1460-3 (Eng). Six steers averaging 400 kg. in wt. were used in a switchback trial to study the effect of spiking corn silage with 15.7 ppm. (0.24 mg./kg. body wt.) of the pesticide Bidrin [3-(dimethoxyphosphoryloxy)-N,N-dimethyl-cis-crotonamide] on blood cholinesterase, digestibility of dietary components, utilization of N, and rumen fermentation. Bidrin residues were not found either in the urine or in the feces of animals ingesting Bidrin. Azodrin, a metabolite of Bidrin, was not present in the feces of treated animals but averaged 0.430 ppm. in the urine. Based on urine vol. this represented 1.5% of the ingested Bidrin. Blood cholinesterase was depressed to 30% of pretreatment values by the end of the 42-day expt. period, whereas activity of steers fed untreated silage was unaffected. In the metabolism trial conducted during the last 14 days of the 42-day period Bidrin had no effect on the digestibility of dietary components (dry matter, crude protein, ether ext., crude fiber, N-free ext., and gross energy), the utilization of N, or rumen fermentation.

110582q Effect of a second dose of cadmium salts on vascular permeability in the rat testis. Clegg, E. J.; Carr, Ian; Niemi, M. (Univ. Sheffield, Sheffield, Engl.). *J. Endocrinol.* 1969, 43(2), 265-8 (Eng). Two doses of CdCl_2 were given to rats at intervals varying from 76 to 194 days. After the second dose the blood vessels in the testis and initial segment of the epididymis showed increased permeability, as demonstrated by i.v. markers. In the testis, leaking vessels were usually found in areas where interstitial cells were abundant.

110583r Acid-base and electrolyte changes induced by acute isotonic saline infusion in the nephrectomized dog. Rosenbaum, Barry J.; Makoff, Dwight L.; Maxwell, Morton H.; Hoghoughi, Michael (Cedars-Sinai Med. Res. Inst., Los Angeles, Calif.). *J. Lab. Clin. Med.* 1969, 74(3), 427-35 (Eng). The mechanism and extent of "dilution acidosis" by acute infusions of isotonic saline was studied in nephrectomized dogs. Infusions of 50, 75, and 100 ml./kg. of body wt. (BW) (Groups 1, 2, and 3) over a 30-min. period resulted in extracellular fluid expansions of $24.4 \pm 1.7\%$, $28.8 \pm 2.2\%$, and $33.9 \pm 5.5\%$, resp. pCO_2 was kept const. Body spaces were measured isotopically, and intracellular H^+ activity by 5,5-dimethyl-2,4-oxazolinedione- ^{14}C . The extracellular bicarbonate concn. decreased only -2.4 ± 0.7 meq./l. and -2.5 ± 0.4 meq./l. in Groups 1 and 2 and -3.0 ± 1.0 in Group 3. The total amt. of extracellular bicarbonate increased $+0.6 \pm 0.2$ meq./kg. of BW, $+0.8 \pm 0.2$ meq./kg. of BW, and $+1.5 \pm 0.4$ meq./kg. of BW in each group, resp. Consequently, the total amt. of extracellular fluid K increased $+0.3 \pm 0.0$ meq./kg. of BW, $+0.5 \pm 0.1$ meq./kg. of BW, and $+0.4 \pm 0.1$ meq./kg. of BW, resp., while there was no decrease in extracellular K concn. It was suggested that the extracellular bicarbonate and K concns. were defended by shifts of H^+ into cells (or bicarbonate out of cells), in conjunction with a shift of K out of cells. Despite the presumed H^+ (or bicarbonate) flux, there were no net changes of H^+ activity. The conceptual theory of extracellular "dilution acidosis" is valid but of limited magnitude and little clin. significance when expansion is relatively slow. Cellular buffering minimizes the extracellular acidosis, and the shift of K out of cells prevents hypokalemia.

110584s Effect of erythropoietin on bone marrow α -amino-levulinic acid synthetase and heme synthetase. Bottomley, Sylvia S.; Smith, G. Ann (Veterans Admin. Hosp., Oklahoma City, Okla.). *J. Lab. Clin. Med.* 1969, 74(3), 445-52 (Eng). An in vitro culture method has been adapted for rabbit bone marrow and has permitted measurement of the effect of erythropoietin on α -amino-levulinic acid synthetase and heme synthetase activities in marrow cells. In this system, erythropoietin enhanced α -amino-levulinic acid synthetase activity. This effect was detectable as early as 6 hrs. after contact with erythropoietin. The max. enzyme activity observed was 200% greater in stimulated than in control cultures. Studies with inhibitors of protein synthesis suggested that erythropoietin increased the synthesis of the enzyme. No stimulatory effect by erythropoietin on heme synthetase activity was observed.

110585t Action of adenosine triphosphate on the depressive spontaneous electrical activity of the dog cerebral cortex. Bianchi, Arrigo; Elena, Elena; Ferrara, A.; Alascherpa, P. (Univ. Pharmacol., Univ. Pavia, Pavia, Italy). *J. Pharm. Sci.* 1969, 58(9), 1161-3 (Eng). The repeated suppression of the ventilation and the circulation of the brain in the dog induces a high depression or a silence of elec. activity of the cortical and subcortical centers. The recovery of respiratory and circulator.