

- 154 Calcium Disodium Edetate Nephrosis in Inbred Rats. Variation in Marshall, Buffalo, Fischer, and ACI Strains. M. D. Reuber and C. W. Lee.
Arch. Environmental Health 13, 554-557 (Nov. 1966).

Calcium disodium edetate (calcium disodium ethylenediamine tetraacetate; Calcium Disodium Versenate) has resulted in nephrosis in human beings treated for lead poisoning. Toxicity studied in rats includes hydropic swelling and necrosis of the proximal convoluted tubules. The age, strain, and sex of the rats have varied. Many investigators did not give such information; others referred to their animals as albino rats; some gave weights. Random bred Sprague-Dawley male rats have generally been used. In this investigation the incidence and severity of renal lesions varied in inbred male rats of four unrelated strains (Marshall, ACI, Fischer, and Buffalo) given daily intraperitoneal injections of calcium disodium edetate. There was least involvement in Marshall rats and greatest in ACI rats. Marshall rats had minimal and Buffalo rats had moderate hydropic swelling of the proximal convoluted tubules. Advanced lesions with disruption of tubular cells were present in Fischer and ACI rats. In ACI rats, there was also regeneration of epithelial cells. The severity of lesions in the different strains may be related to genetic differences, the most important being differences in hormones. There are 13 references.

- 155 Poisoning of Industrial Origin in a Community. H. Oyanguren and E. Perez.
Arch. Environmental Health 13, 185-189 (Aug. 1966).

The occupational health worker should always bear in mind that toxic hazards originating in industry may also affect groups in the population near factories and in certain avenues of commerce. Likewise, the general practitioner or the pediatrician, in the presence of poisoning, should look for the source in the environment; the sources of arsenic poisoning of occupational origin may extend to neighboring populations without appearing as poisoning, per se, but simply as a degree of absorption of a toxic material, which may give rise to serious effects, at long range, under appropriate conditions. Lead poisoning of industrial origin in the community may arise out of unusual conditions. It has been found especially among children, who live near smelters, or come in contact with lead-containing wastes of old industrial plants, or in homes in which lead-containing materials are handled or processed. The physician who encounters illness suggestive of lead poisoning in children should first substantiate or exclude lead as the toxic agent by appropriate trustworthy analytical means, and, if lead is convicted, should seek out the source in the environment of the child, so as to prevent recurrence of the illness in his patient, or further cases of poisoning from the same source. There are four references. -- Authors' summary

- 156 Reproducibility of Single Oral Dose Toxicity Testing. C. S. Weil, et al.
Am. Ind. Hyg. Assn. J. 27, 483-487 (Nov.-Dec. 1966).

The single peroral dose toxicity of 26 chemicals was estimated each year for 12 years to determine the reproducibility of the test and of commercial production. For 11 years the resultant median lethal doses were relatively unaffected by the different samples of each chemical received annually, by changes in the stock of rats, by the diluted or undiluted state of the materials, or by the change of personnel performing the tests. Only one variable, the weight of the rat, appeared to have a significant effect on the LD50. -- Authors' abst.

- 157 Spectrographic Determination of Microgram Quantities of Tellurium in Biologic Materials.
R. E. Kinser and R. G. Keenan. Am. Ind. Hyg. Assn. J. 27, 501-505 (Nov.-Dec. 1966).

A spectrographic method for the determination of microgram amounts of tellurium in biological materials is described. The residues of wet-ashed samples are converted to the chloride form for excitation. Waterproofed electrodes containing the internal standard (thallium), the sample, and 5 mg. of spectroscopic buffer are capped with boiler caps. Each electrode is excited as anode in a 10-ampere 220-volt direct-current arc. The intensity ratio of the tellurium 2385.8-A line to the thallium 2379.7-A line (the internal standard line) is calculated. Replicate determinations of tellurium in standard samples prepared from a liver ash matrix gave a detection limit of 0.1 microgram of tellurium per 2 mg. of tissue ash. Repeated analysis of liver ash standards yielded an overall relative standard deviation of 10.6%. The method is particularly valuable for the analysis of small body organs containing submicrogram quantities of tellurium. There are 12 references. -- Authors' abst.

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