b cytochrome of *S. fradiae* 3535 has been partially purified and characterized[6].

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Removal of Internally Deposited Radiocerium by the Use of Chelating Agents

IN recent years, polyamino-acids, and ethylenediaminetetra-acetic acid in particular, have proved of substantial value as therapeutic agents in cases of poisoning by radioactive or stable metals. However, the compounds hitherto investigated are of very poor efficiency when treatment is delayed[1], and are unable to prevent the deposition of certain elements, such as cerium[2] or lanthanum[3], in the skeleton, even when administered in most favourable conditions. In view of these findings, experiments on several other chelating substances were performed in the hope of obtaining more effective agents.

Albino rats averaging 130 gm. were injected intravenously with tracer amounts of cerium-144/praseodymium-144. The chemicals to be tested were administered intravenously in series 1 and 2 simultaneously with the radiocerium and in series 3 by intraperitoneal route 3–5 min. after incorporation of radiocerium. The animals were killed after 48 hr., the organs processed and their cerium-144 content determined.

As shown in Table 1, the bulk of the agents tested proved to be either of low efficiency or ineffective with regard to the fixation of radiocerium by the skeleton. The administration of substances I, IV, VII caused even a higher retention significant at the 20, 1 and 5 per cent level respectively, in spite of the relatively high dosage. A substantial minimization of the skeletal deposition was achieved only by the two substances X and XI, possessing oxygen as heteroatoms, as well as by the condensed polyphosphate VIII, acting according to Thilo[4] as a soluble ion-exchanger. It should be mentioned that the polyphosphate is also effective, though only slightly, in removal of radiostrontium[5].

In series 4 the chelating agents were administered on the fifth, tenth and sixteenth day following the incorporation of radiocerium. The urinary excretion during this period occurs at an approximately constant level of 0·08–0·14 per cent per day. Urine and fæces were collected separately before and after administration of the agents, and their radioactivity assayed. The substances VII, VIII, III were ineffective, I, II, as well as zirconium citrate (450 mgm./kgm.), caused an increase of the urinary excretion

Table 1. PERCENTAGE OF CERIUM-144 DOSE ADMINISTERED AND MEAN STANDARD ERROR IN THE RELEVANT ORGANS
Each experimental group comprises 4–5 rats. The dosage (μmoles/rat) if not otherwise stated was 90 in series 1 and 2, 275 in series 3

Treatment	Skeleton	Liver	Kidneys
Series 1 (Wistar strain) Control (saline)	33·9±0·6	46·4±1·6	1·83±0·07
I Ca-Na_2-Ethylenediaminetetra-acetate	37·0±1·9	2·1±0·3	0·29±0·02
II Ca-Na_2-1,2 Diamino-*cyclo*hexane tetra-acetate*	32·0±0·4	5·5±0·6	0·41±0·06
III 8-Quinolinol-5-sulphonic acid	23·2±2·0	32·2±1·9	1·58±0·15
Series 2 (Freiburg strain) Control (saline)	25·2±1·2	60·0±2·1	1·30±0·15
IV Ca-Na_2-N-Hydroxyethylethylenediaminetriacetate†	35·4±2·2	2·2±0·1	0·24±0·01
V Na-N,N-di(α-hydroxyethyl)glycine†	28·5±2·0	20·3±1·4	1·85±0·05
VI 3 μ*M* *o*-Tolylbiguanide‡	21·3±0·8	45·2±1·6	1·25±0·12
VII Na-Trimetaphosphate§	33·4±3·4	30·4±4·4	1·72±0·19
VIII Ca-Graham's salt, 25 mgm.§	7·0±0·9	2·9±0·5	3·38±0·15
Series 3 (Freiburg strain) Control (saline)	27·9±2·1	51·4±2·9	2·37±0·22
II Ca-Na_2-1,2 Diamino-*cyclo*hexane tetra-acetate*	27·8±0·7	21·4±2·0	0·76±0·06
IX Ca-Na_2-N-(2-*cyclo*hexanol)-iminodiacetate*	30·6±1·0	15·9±0·5	0·68±0·05
X Ca-Na_2-Ethyleneglycol-*bis*-β-aminoethylether-N,N,N′,N′-tetra-acetate*	13·1±0·5	2·4±0·1	0·37±0·03
XI Ca-Na_2-β,β′-Diaminodiethylether-N,N,N′,N′-ditetra-acetate*	9·0±0·5	3·1±0·5	0·34±0·02

* By courtesy of J. R. Geigy S.A., Basle.
† By courtesy of the Dow Chemical Co., Midland, Mich.
‡ By courtesy of Monsanto Chemical Co., St. Louis, Miss.
§ By courtesy of Chemische Werke Albert, Wiesbaden-Biebrich.

by a factor of 2–3, substance IV by a factor of 6–7, and substance X by a factor of 10. The most striking effect was obtained for substance XI, which raised the urinary excretion from the base level up to as much as 4–5 per cent per day. The exceptionally high efficiency of diaminodiethylether tetra-acetic acid in early as well as in delayed treatment makes this substance seem worthy of more detailed investigation. Experiments now in progress will be reported later.

This work has been supported by grants from the Deutsche Forschungsgemeinschaft.

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Action of Blue Light on the Germination of Seeds

THE mutually reversible influence of red and far-red radiation on seed germination is to-day a well-established fact. The role of other regions of the spectrum is less certain. Conflicting results, for example, have been reported on the action of blue light on germination (see review in ref. 2). In the present work we have investigated the effect of light in this part of the spectrum, and especially the change