reverse it. Preliminary experiments utilizing the manometric technique of Zamecnik *et al.* (*8*) for the determination of lecithinase have yielded identical results.

These results suggest that Ca^{++} activates but is not essential for the activity of lecithinase whereas Zn^{++}, Co^{++}, and Mn^{++} activate and are essential for the activity of the enzyme. They can be explained on the basis that Zn^{++}, Co^{++}, and Mn^{++} are preferentially chelated over Ca^{++} (*9*) and thus remain chelated, even in an excess of Ca^{++}.

The action of EDTA in protecting mice from the toxin is undoubtedly due to its ability to chelate metal ions, inasmuch as it no longer protects when an "essential" ion is present in excess. The protection afforded by EDTA and the reversal of this protection by an "essential" ion are rather dramatic. The mice that received the toxin plus EDTA manifested no ill effects and no decrease in their normal activity. In those mice in which the protective action of EDTA was reversed by either Zn^{++}, Co^{++}, or Mn^{++}, the pattern of death was identical with that of the controls that received toxin alone. They all died in the same time interval, and had an extensive area of inflammation at the site of injection.

The action of the toxin is not confined to the injection site. Therefore the EDTA exerts more than a local effect. An experiment was performed in which the toxin and EDTA were injected into different sites on opposite sides of mice, and five of the ten mice survived. The greater amount of protection that resulted when the toxin and EDTA were injected simultaneously indicates that inhibition of the toxin at the site of injection is involved in this enhanced protection. A study of the dosage levels of EDTA and Ca-EDTA that are required to protect animals when they are given by intravenous and other routes has been started.

EDTA is not toxic for animals and human beings until an amount is given that induces a hypocalcemic state with resultant tetany (*10*), but Ca-EDTA can be given in large quantities without any apparent toxicity and has been used clinically in cases of lead poisoning (*11*). The possible use of Ca-EDTA in the therapy of gaseous gangrene is obvious.

MERWIN MOSKOWITZ
MERWYN W. DEVERELL
RAMON MCKINNEY

Division of Bacteriology, Department of Biological Sciences, Purdue University, Lafayette, Indiana

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4. Used as Di-Sodium Di-Hydrogen Versenate (analytic reagent). Kindly supplied by the Bersworth Chemical Company and their successor, the Dow Chemical Company.
5. Supported in part by a grant from the Purdue Research Foundation and grant G-3444 of the National Institutes of Health, U.S. Public Health Service.
6. Kindly supplied by Lederle Laboratories Division, American Cyanamid Company.
7. Borate-buffer was made up as follows: (i) 1.25 g of boric acid was dissolved in 100 ml of 0.16*M* NaCl, and (ii) 1.9 g of Borax was dissolved in 100 ml of 0.16*M* NaCl; 10 ml of ii mixed with 90 ml of i to give a *p*H of 7.6. The final *p*H of the mixtures used for injection was 6.9 to 7.1.
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Simplotite, New Calcium Tetravanadite from the Colorado Plateau

Simplotite, $CaV_4O_9 \cdot 5H_2O$, is a new mineral found in several vanadium-uranium mines on the Colorado Plateau (*1*). The mines are located in the Salt Wash sandstone member of the Morrison formation of late Jurassic age. The new mineral is named in honor of J. R. Simplot (*2*), former owner of the Peanut Mine, Montrose County, Colo., where the material used for this description was collected.

Simplotite occurs as hemispherical aggregates of dark-green, platy crystals. It is found in comparatively unoxidized ore and is associated with montroseite, paramontroseite, vanadiferous silicates, uraninite, and coffinite. At the Peanut Mine it occurs as coatings on fractures in the ore-bearing sandstone with duttonite, $VO(OH)_2$ (*3*), melanovanadite, native selenium, and an undescribed vanadium oxide.

The color of simplotite varies from nearly black, in coarse aggregates, to yellow-green, in thin flakes. It is biaxial negative; 2V is about 25°; and dispersion is $r > v$, weak and crossed. $X = b$ (yellow); Y (green); $Z \wedge c = +58°$ (green); $\alpha = 1.705 \pm 0.002$, $\beta = 1.767 \pm 0.002$, $\gamma = 1.769 \pm 0.002$. The specific gravity, as measured by immersion in a mixture of bromoform and acetone, is 2.64 ± 0.02.

A microchemical analysis made by one of us (R. M.) on approximately 70 mg of simplotite showed the following composition: CaO, 11.6 percent; V_2O_4, 67.7 percent; V_2O_5, 0.5 percent; H_2O, 18.4 percent; and insoluble material, 0.5 percent; total, 98.7 percent. Qualitative spectrographic analysis by Katherine E. Valentine of the original material indicated the presence of Mg and Al in amounts of 0.1 to 0.5 percent and Na, K, and Fe in amounts 0.05 to 0.1 percent.

Simplotite is monoclinic and pseudotetragonal. It has a very easy micaceous cleavage on (010) and is very soft. The unit-cell constants were determined by M. E. Mrose of the U.S. Geological Survey as follows: $a_0 = 8.39 \pm 0.02$ A, $b_0 = 17.02 \pm 0.02$ A, $c_0 = 8.37 \pm 0.02$ A, $\beta = 90°25' \pm 5'$; $a : b : c = 0.4929 : 1 : 0.4918$. The space group is $C\,2/m$; the cell contents are $4\ (CaV_4O_9 \cdot 5H_2O)$; and the calculated specific gravity is 2.65.

Simplotite was first found in 1952 by Alice D. Weeks and other members of the U.S. Geological Survey field party at the Sundown claim, San Miguel County, Colo. The sample used for this description was collected by one of us (C. H. R.) in the course of a detailed study of the mineralogy, geochemistry, and geology of the Peanut Mine. The mineral has been identified in the following three other mines: the Shattuck-Denn lease on Club Mesa and the J. J. Mine in Paradox Valley, both in Montrose County, Colo., and the Vanadium Queen Mine at La Sal Creek, San Juan County, Utah.

MARY E. THOMPSON*
CARL H. ROACH
ROBERT MEYROWITZ

U.S. Geological Survey
Grand Junction, Colorado

References and Notes

1. Publication authorized by the director, U.S. Geological Survey. The study of the mineralogy of the uranium deposits of the Colorado Plateau is part of a program being conducted by the U.S. Geological Survey on behalf of the Division of Raw Materials of the U.S. Atomic Energy Commission.
2. J. R. Simplot Mining Co., Boise, Idaho.
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* Present address: 38 Clarendon St., Newtonville, Mass.

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Relation of Aromatic Amino Acids to Excretory Pattern of Schizophrenics

It has been shown that schizophrenics generally excrete a number of aromatic compounds that appear little, if at all, in normal urine (*1, 2*). The appearance of these abnormal metabolites may be related to the production in schizophrenia of some hallucinogen. Because of the well-known limitations on human biosynthesis of aromatic compounds, such abnormal metabolites are most probably derived from the dietary aromatic amino acids, phenylalanine, tyrosine, and tryptophan. Limiting the dietary intake of one or all of these aromatic amino acids should provide evidence concerning the origin of these aromatic compounds. With this in mind, we fed a