

other compounds, containing a sulfur atom which is easily split off, were tested (the sulfur unites in the body to form a little poisonous sulfo cyanate). The most efficient of these new sulfur compounds were thialdin, carbothialdin, and potassium xanthogenate. Great differences in the extent of the antidotal action of these bodies toward the various nitriles were noted. Thus thialdin protected against nitriles toward which potassium xanthogenate was without action ; toward other nitriles potassium xanthogenate was the more efficacious. Many of these differences can be easily explained on the hypothesis that the various nitriles and sulfur compounds are differently distributed in the body. Unless both the sulfur compound and the nitrile reach the same cells, and unless the conditions in these cells are favorable for the formation of the sulfo cyanate, no neutralization will take place.

Especially interesting are the experiments on the antidotal action of alcohol toward certain nitriles. It was found that small doses of alcohol protected an animal against three to five times the fatal dose of acetonitrile and formaldehydcyanhydrin, and that after otherwise fatal doses of these substances, the animal recovered if small doses of alcohol were given. It was suggested that the explanation for this action may be that, because it is easily oxidized, alcohol consumed the oxygen usually available for the oxidation of the  $\text{CH}_3$  and  $\text{CH}_2\text{OH}$  groups of these compounds, and for the consequent liberation of the  $\text{HCN}$ . Support for this hypothesis was found in the fact that dextrose (another easily oxidizable substance) also protects against acetonitrile.

This seems to be the first case in which alcohol has been clearly shown to have an antidotal action toward a poison. It was suggested that alcohol may have an analogous action in certain pathological conditions, in which physicians have long claimed a beneficial result from its use. Toward  $\text{HCN}$  itself, and several other nitriles, alcohol has no antidotal action ; in fact, in some cases the toxicity of the nitrile was increased by it.

#### **34. " Toxicity of certain quinin derivatives " : REID HUNT.**

In one of the side chains of the quinin molecule there is, according to the commonly accepted view, a vinyl group :  
—  $\text{CH} = \text{CH}_2$ . As the toxicity of many compounds (*e. g.*, neurin

and allyl alcohol), is chiefly due to the presence of such a group, experiments were made (in Professor Ehrlich's laboratory) to determine whether this is the case with quinin. A number of derivatives in which the vinyl union was broken by the addition of H (hydroquinin), or of O and OH (oxyhydroquinin), or of H and Cl (hydrochlorquinin), were tested as to their toxicity upon various mammals and certain infusoria. The experiments showed that the presence of the vinyl group in quinin is without special significance as far as toxicity is concerned, the first two of the new compounds being about as poisonous as quinin itself. The results of the experiments with hydrochlorquinin are of special interest; these showed that the addition of H and Cl decreases the toxicity for mammals, while increasing it for infusoria. Thus the amount of hydrochlorquinin required to kill mice was two and a half times as much as that of quinin, while the former substance is distinctly more poisonous to certain infusoria than the latter. It is possible that hydrochlorquinin (or similar compounds) will be found to be more effective in the treatment of malaria than is quinin, and further work along these lines may result in the discovery of quinin derivatives which will be of use in certain diseases, caused by protozoa, in which quinin is of little value. Further experiments are in progress.

**35. "Report on the metabolism of a case of diabetes mellitus": ARTHUR R. MANDEL and GRAHAM LUSK.**

The case was in a young man, whose urine contained no albumin, little ammonia, only a small amount of acetone, and no  $\beta$ -oxybutyric acid. All these symptoms are said to justify a favorable prognosis. The patient was put on three different diets for three successive periods: Diet I. — Rich cream, oatmeal, meat, eggs, butter. Diet II. — Same as I, with 100 grams of levulose. Diet III. — Rich cream, meat, and eggs. The oatmeal was used on account of the favorable results obtained by von Noorden.

Diet III was practically a meat-fat diet. Upon this diet the polyuria decreased and the sugar fell from 8% to 4%, both of which phenomena would be favorably interpreted by the clinician. But on calculating the ratio between sugar and nitrogen