rats infected with *Trypanosoma brucei* by single doses of it. A fair number can be cured by thorough and repeated dosage. The rats treated by atoxyl as additional controls in this series of experiments did not survive. In animals treated by single doses of atoxyl the parasites reappeared and death followed. In one rat, weighing 70 grammes, which has received five doses of 0.5 ccm. of 5 per cent. solution of atoxyl, an atoxyl resistant strain of trypanosomes has been produced.

IV.

Summary.

Observations I and II show that doses of arseno-phenyl-glycin, large enough (0.3 grammes) to drive the trypanosomes from the blood at once, will hasten the death of heavily infected animals.

Only two of the rats, used in observation II, which received a dose of 0.2 grammes survived. The parasites later recurred in them; it is suggested that in these animals the trypanosomes probably were less completely destroyed than in those which died. Hence those which died may have died from a cause, such as the liberation of a cytotoxin, depending upon the destruction of the trypanosomes they had harboured. Similar observations have been made in the treatment of experimental trypanosomiasis by inorganic arsenic(9) and by antimony.(10)

Observation III shows that a proportion of early infections of rats by *Trypanosoma brucei* may be cured by a single dose of 0.2 grammes of arseno-phenyl-glycin.

Observations I, II and III taken together support the ground rules of the treatment of trypanosomiasis, that treatment should commence as soon as possible after the infection and that, despite the danger, the drug employed should be administered in full doses in order to minimise the danger of recurrences. If the parasites recur after the initial treatment, they, in a proportion of rats, may be permanently driven from the blood by repeating the initial dose.

By comparing the action of arseno-phenyl-glycin in these experiments with the results which may be obtained by the use of atoxyl, it is evident that arseno-phenyl-glycin is the more powerful trypanocide in the treatment of experimental infections of white rats by *trypanosoma brucei*.