p-acetylamino-benzal-thiosemicarbazone therapy, this type of blood change, detectable by means of vital staining[7], deserves special attention because of its possible value as an early indication of the onset of hæmolytic processes.

It is of interest that *iso*-nicotinyl hydrazide[8], fed to mice in maximum tolerated single doses of 3–4 mgm. per 20 gm., does not cause Heinz body formation.

Heinz body formation in its relation to the potential toxicity of antituberculous agents is being further investigated.

These experiments, in which assistance was given by Mr. W. H. Linklater, are part of an investigation supported by a grant from the National Research Council of Canada. I am also indebted to Mr. G. M. Healy for the photospectrometric recordings, and to Dr. D. E. Seymour, of Herts Pharmaceuticals, Ltd., for supplying the ethyl-sulphonyl-benzal-thiosemicarbazone. The other compounds studied were prepared in our laboratory.

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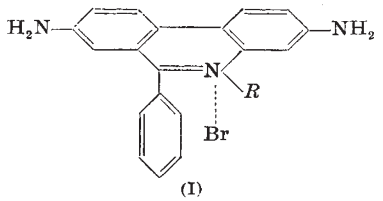
Effect of Changing the Quaternizing Group on the Trypanocidal Activity of Dimidium Bromide

Dimidium bromide (2 : 7-diamino-10-methyl-9-phenyl-phenanthridinium bromide) (I, R=CH_3—) has been widely used in Africa for the treatment of *Trypanosoma congolense* infection in cattle, but the ratio between toxic and effective doses is too small for the drug to be entirely satisfactory.



(I)

We have, for some time, been testing modifications of the dimidium molecule, changing the nature and position of substituents on the phenanthridine nucleus. Though many compounds have possessed some trypanocidal action, and some appeared to be more active against laboratory trypanosome infections than was dimidium bromide itself, the most interesting series has been that in which only the quaternizing group of dimidium bromide has been changed. For example, the homologous series in *n*-alkyl compounds may be mentioned; the results in Table 1 show that both the acute toxicity in mice and also the activity against various trypanosome species in mice are profoundly altered by increasing the length of the quaternizing group.

In this table each figure represents the mean of a number of tests. Activity has been compared on the basis of the (curative dose)$_{50}$, activity of dimidium bromide being taken as unity in each test.

Two compounds of this series, *R.D.*1572 (R=—C_2H_5), *R.D.*1427 (R=—C_3H_7) and also *R.D.*1446(R=—CH_2—CH=CH_2), were submitted for field-trial in Africa. In a preliminary test carried out by Mr. J. K. H. Wilde and Mr. J. Robson at the Veterinary Research Department, Mpwapwa, Tanganyika Territory, *R.D.*1572, to which we have given the trivial name 'ethidium bromide', appears to possess considerable promise for the treatment of *T. congolense* infection of zebu cattle, though the ratio of activity between ethidium bromide and dimidium bromide in this test was lower than in the laboratory tests. Results of this preliminary test are shown in Table 2. It should be mentioned that the dose of dimidium bromide normally used in this area is 1·5 mgm./kgm.

Table 2

Drug	Dose (mgm./kgm.)	Proportion of relapses within five months
Dimidium bromide	1·0	1/6
	0·5	4/6
Ethidium bromide	0·9	0/8
	0·3	1/8
	0·1	5/8

Full details of both laboratory experiments on this series of compounds and of field-trials are to be published elsewhere.

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A Rapid Semi-quantitative Spot Test for Reducing Steroids

The resolution of a mixture of corticosteroids into its components by partition chromatography on cellulose columns necessitates the handling of a large number of fractions, owing to the widely differing R_F values of the fastest and the slowest of these compounds. Thus a column made up of 3·5 gm. of powdered cellulose may require as much as 1,000 ml.

Table 1

Compound	Quaternizing group R=	Acute toxicity to mice (LD_{50} mgm./kgm. subcutaneous)	Ratio of therapeutic activity dimidium bromide = 1			
			T. congolense	*T. brucei*	*T. gambiense*	*T. rhodesiense*
Dimidium	—CH_3	85	1	1	1	1
*R.D.*1572	—C_2H_5	110	10	20	50	11
*R.D.*1427	—C_3H_7	110	6	35	40	12
*R.D.*1528	—C_4H_9	65	3	6	8	8
*R.D.*1602	—C_5H_{11}	125	1	3	3	1
*R.D.*1470	—C_6H_{13}	80	0·6	1	1	1