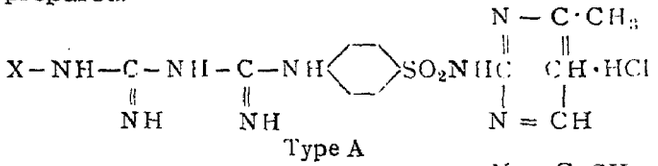
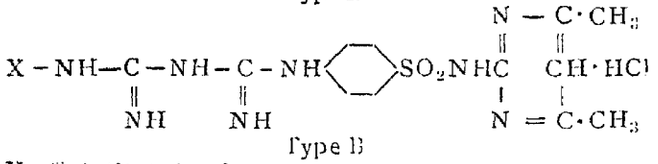
STUDIES IN ANTIMALARIALS
SULPHABIGUANIDE DERIVATIVES

As a part of the systematic investigations[1,2,3] on substituted biguanides as possible antimalarials, we have previously reported[2] one compound each of type A and type B (where X = *p*-chlorophenyl). Sixteen more compounds (eight each of the type A and B, *vide* table) having different aryl substituents at N^1-position of the biguanide residue have now been prepared.



Type A



Type B

X = Substituted aryls.

TABLE

Some sulphabiguanide derivatives

	X	Type A, M.P. °C.	Type B, M.P. °C.
1	Phenyl ..	194	222
2	*p*-Chlorophenyl[2] ..	238	225
3	2 : 4-Dichlorophenyl	220	223
4	*p*-Bromophenyl ..	231	232
5	*p*-Iodophenyl ..	227 (slight decomp.)	232 (slight decomp.)
6	*p*-Methylphenyl ..	231	238
7	3 : 4-Dimethylphenyl	220	219
8	*p*-Methoxyphenyl ..	200	231
9	*p*-Nitrophenyl	230 (slight decomp.)	257

The hydrochlorides of the sulphabiguanide derivatives of types A and B have been obtained by refluxing the appropriate arylcyanoguanidine with sulphamerazine hydrochloride and sulphamethazine hydrochloride respectively in 90 per cent. ethanol for 6-8 hours. All these compounds are white amorphous powders.

Considering that the formation of metallic complexes (chelates) by the biguanide structure of paludrine may be a possible mode of its action,[4] it was thought of interest to see the chelating capacity of these type of compounds. In an attempt to prepare copper chelates by Andreasch's method[5] it was observed that the sulphabiguanides, reported previously[2] as well as in the present note, show a very feeble tendency towards chelation, which is perhaps due to the electro-negative nature of the substituents. A feeble tendency towards chelation need not necessarily mean reduced antimalarial activity because it has been observed that some of the sulphabiguanides reported earlier,[2] although now shown to possess very little tendency for chelation, exhibited anti-malarial activity. Possibly their antimalarial activity does not depend so much upon their capacity for chelation as on the nature of the substituents at the two ends of the biguanide molecues.

Details of this work will be published elsewhere.

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1. Bami, H. L., Iyer, B. H., Guha, P. C., *J Indian Inst. Sci.*, 1947, **29A**, 15. cf. *Curr. Sci.* 1947, **16**, 252. 2. *Indem.*, *Curr. Sci.*, 1947, **15**, 386. 3. *Indem.*, "Some N^1-aryl-N^5-metachloridine-biguanides" (unpublished work). 4. Curd, F. H. S., Rose, F. L., *Nature*, 1946, **158**, 707. 5. Andreasch, R., *Monatsh.*, 1927, **48**, 147.