

TABLE I

Acid value of Jute Fibres with different indicators and with and without NaCl

Material	Acid value			
	phenolphthalein		bromothymol blue	
	with NaCl	without NaCl	with NaCl	without NaCl
Defatted jute treated with N/10 HCl and washed neutral	12.4	11.2	11.7	8.9
Defatted jute treated with 1% NaOH at room temp. and then with N/10 HCl and washed neutral	25.8	23.0	22.4	18.1
Chlorite holocellulose from defatted jute	24.6	21.5	22.1	17.8

Acid values obtained with silver ortho-nitrophenolate or potassium iodide and iodate, it may be noted, agree well with those in column four.³

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1. Neale and Stringfellow, *Trans. Faraday Soc.*, 1927, **33**, 881. 2. Hiller and Pacsu, *Text. Res. J.*, 1946, **16**, 390. 3. Sarkar, Chatterjee and Mazumdar *J. Text. Inst.*, 1947, **38**, T. 318.

ORGANO ARSENICALS-

Aryl Sulphonyl Esters of Hydroxyphenyl Arsonic Acids

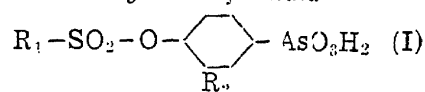
IN view of the therapeutic importance of Organo Arsenicals, systematic investigations on the synthesis of new arsenicals for pharmacological studies have been in progress in our Laboratories.¹ A survey of the literature showed that very little study has been made of the aryl sulphonyl esters of hydroxyphenyl arsonic acids, one instance being the preparation of *p*-toluene sulphonyl ester of 3-nitro-4-hydroxyphenyl arsonic acid by Benda and Bertheim.²

Eighteen sulphonyl esters (*vide* table below) of the general formula (I) have been prepared by the action of benzene-, *p*-toluene, *p*-chlorophenyl-, *p*-acetaminophenyl- and β -naphtha-

lene-sulphonyl chlorides on 4-hydroxy-, 3-nitro-4-hydroxy- and 3-acetamino-4-hydroxyphenyl arsonic acids and characterised. The reactions were conducted in sodium carbonate solution either at ordinary temperature or at 80° C., the products isolated by acidification and purified by crystallisation from organic solvents. Compounds 2, 6, 10, 13, 14 and 18 were prepared by hydrolysing the corresponding acetamino products with acid. Long after our work was completed, Fox³ has recently reported the preparation of 3-amino-4-[(*p*-acetamino)- and (*p*-amino)-benzenesulphonyl-oxy] phenyl arsonic acids.

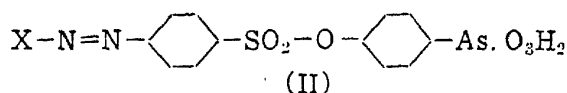
TABLE I

Melting points of the synthesised compounds of the general formula



	R ₁	R ₂	M.P. °C
1	C ₆ H ₅	H	170-72
2	"	NH ₂	195-97
3	"	NHAc	190-93
4	<i>p</i> -CH ₃ -C ₆ H ₄	H	205-7 (d)
5	"	NHAc	203-5 (d)
6	"	NH ₂	180-90 (d)
7	<i>p</i> -Cl-C ₆ H ₄	H	above 250
8	"	NO ₂	255-57 (d)
9	"	NHAc	180-85
10	"	NH ₂ , HCl	242-43 (d)
11	<i>p</i> -NHAcC ₆ H ₄	H	Not sharp
12	"	NO ₂	188-89 (d)
13	<i>p</i> -NH ₂ C ₆ H ₄	H	179-81
14	"	NO ₂ , HCl	267-69 (d)
15	<i>p</i> -C ₁₀ H ₇	H	278-80 (d)
16	"	NO ₂	258-59 (d) with previous shrinking
17	"	NHAc	203-5 (d)
18	"	NH ₂ HCl	139-40 (d)

With a view to studying the pharmacological properties, a few arsenical azo dyes, of type (II), have been prepared from *p*-amino-benzene sulphonyl-oxy-phenyl arsonic acid (13).



X = hydroxy or amino-aryl residue.

Full details will be published elsewhere.

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1. Krishnan, P. P., Iyer, B. H., and Guha, P. C., *Indian Chem. Soc.*, 1947, **24**, 285, 289, 565. 2. Benda, L., and Bertheim, A., *Ber.*, 1911, **44**, 3447. 3. Fox, H. H., *J. Org. Chem.*, 1947, **12**, 872.