of Standards. The molecular weights were calculated using the Lorentz–Lorenz formula. Considerable difficulty was experienced in analyzing these esters, especially the lower ones, low results being obtained repeatedly. Correct results were finally obtained in all cases except that of the methyl ester by using a quartz combustion tube and high temperature.

TABLE I

ESTERS OF DIMETHYLETHYLACETIC ACID

Ester	B. p., °C. (746 mm., corr.)	n_D^{25}	d_4^{25}	Mol. wt. Calcd.	Mol. wt. Found	Analyses Calcd. C, %	Calcd. H, %	Found C, %	Found H, %
Methyl	125 –125.5	1.3991	0.8943	130	134	64.6	10.8	61.0	10.7
								62.8	7.7
Ethyl[a]	141.8–142.2	1.3989	.8601	144	145	66.6	11.2	66.4	11.1
n-Propyl	164 –164.4	1.4040	.8575	158	159	68.4	11.5	68.1	11.4
n-Butyl	184 –184.7	1.4098	.8566	172	173	69.7	11.7	71.0	11.5
n-Amyl	202.5–203.5	1.4140	.8544	186	187	70.9	11.9	71.0	11.8
Iso-Amyl	192.5–196.5	1.4128	.8533	186	187	70.9	11.9	70.6	11.7

[a] Bouveault and Blanc, *Bull. soc. chim.*, [3] **31**, 749 (1904), report boiling point as 141–142° and d_4^0 as 0.883.

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Reaction of Alizarin and Mercuric Acetate.—The observation here reported was made some six years ago. Since the work is not to be continued, the facts obtained are presented as being of possible interest in anthraquinone chemistry.

Alizarin when heated with excess mercuric acetate gave large amounts of mercurous acetate, indicating an oxidation of the alizarin. The product contained organic mercury. Five runs with varying concentrations and times of heating varying from 30 to 100 hours gave almost identical results. The organic product appeared to be acetoxymercurydihydroxyalizarin. The following average analyses were obtained on the products from the five runs.

Anal. Calcd. for $C_{16}H_{10}O_8Hg$: Hg, 49.8. Found: 49.5, 50.0, 49.8, 49.7, 49.7.

Treatment of the product with hydrochloric acid gave a yellow-red dye with properties similar to those of alizarin.

The mercury compound when treated with the amount of standard sodium hydroxide corresponding to the four hydroxyls gave a bluish-red solution. The solution at 20° then contained 0.2 g. per 100 cc. Warming the solution changed the color to red and precipitated some material which dissolved again on cooling. Both the cold and hot solutions were neutral to litmus.

The positions of the groups in the mercurated product were not determined. The results of other oxidation and substitution reactions on alizarin would make it appear probable that the product was 1,2,5,8-tetrahydroxy-4-acetoxymercuri-anthraquinone. Treatment of this product with halogens should give interesting halogenated tetrahydroxyanthraquinones.

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The Reaction of Mercuric Acetate with *p*-Bromodiethylaniline.—The present observations are published because of their wide divergence from the results obtained with closely analogous substances. Dialkylanilines, including dimethyl, diethyl, di-*n*-propyl, di-*n*-butyl, methylethyl, and ethylbenzyl, react readily with mercuric acetate to give products containing acetoxymercuri groups in the para position.[1] If the para position is occupied, mercuration would be expected to take place in one of the free ortho positions. This proved to be the case with *p*-bromodimethylaniline, which gave an excellent yield of the ortho mercurated product.[2] At the time that work was done, attempts were made to extend it to the homologous dialkylanilines. Contrary to expectations, this proved to be impossible. The experiments have been repeated many times since under a great variety of conditions, but the results have been consistently negative. No organic mercury compound has been obtained.

The attempts at mercuration of *p*-bromodiethylaniline were carried out in 95% alcohol, 50% alcohol, glacial acetic acid, 50% acetic acid, ether, water and without a solvent. The temperature was varied from 0° to the boiling point of the solvent used and the times from a few hours to weeks. The concentrations of the reactants were varied over a wide range. In all experiments similar results were obtained; the products were unchanged material, mercurous acetate and unmanageable oxidation products.

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[1] Whitmore, Hanson and Carnahan, THIS JOURNAL, **51**, 894 (1929).
[2] Whitmore, *ibid.*, **41**, 1841 (1919).