TABLE I

ALKYL AND ARYL ETHERS

Of 1-Dialkylamino-propanol-2, $CH_3CHOR'CH_2NR_2$				Of beta methyl choline, $CH_3CHORCH_2NR'_3I^-$				
R	R'	B. p., °C.	Mm.	M. p., °C.	Formula	Iodine, % Calcd.	Found	
CH_3	CH_3	113–116	760	155.5–156.0[a]	$C_7H_{18}ONI$	48.99	48.99	49.12
	C_2H_5	133–135	760	144.5[b]	$C_8H_{20}ONI$	46.48	46.51	46.35
	i-C_3H_7	140–145	758	145.5[b]	$C_9H_{22}ONI$	44.21	44.00	44.10
	n-C_4H_9	55–58	18	156.5–157.0[c]	$C_{10}H_{24}ONI$	42.15	42.30	42.16
	C_6H_5	143–144	18	139.5–140.0[d]	$C_{12}H_{20}ONI$	39.53	39.41	39.45
	o-$C_6H_4CH_3$	132–135	18	141.0–142.0[d]	$C_{13}H_{22}ONI$	37.88	38.03	37.91
	m-$C_6H_4CH_3$	136–140	12	130.0–131.0[d]	$C_{13}H_{22}ONI$	37.88	37.82	37.91
	p-$C_6H_4CH_3$	140–143	15	140.0–141.0[d]	$C_{13}H_{22}ONI$	37.88	37.81	37.85
C_2H_5	CH_3	46–47	12	....	...	...	....	
	C_2H_5	70–72	18	....	...	...	....	
	i-C_3H_7	60–63	10	129.0–130.0[e]	$C_{12}H_{28}ONI$	38.60	38.80	38.83
	n-C_4H_9	63–65	10	....	...	...	....	
	C_6H_5	125–126	11	....	...	...	....	
	o-$C_6H_4CH_3$	141	12	128.0[b]	$C_{16}H_{28}ONI$	33.62	33.60	33.55
	m-$C_6H_4CH_3$	141–142	10	129.0–130.0[d]	$C_{16}H_{28}ONI$	33.62	33.50	33.52
	p-$C_6H_4CH_3$	144–146	14	138.0–139.0[c]	$C_{16}H_{28}ONI$	33.62	33.50	33.65

[a] Crystallized from chloroform–ethyl acetate solution. [b] Crystallized from amyl acetate–amyl alcohol solution. [c] Crystallized from amyl acetate. [d] Crystallized from ethyl acetate. [e] The oily product was dissolved in acetic anhydride and precipitated over a period of months by layering with dry ether.

methyl iodide in toluene solution. The reaction was vigorous and required cooling. The average yields were 65–80%.

β-Aryloxy and β-alkoxy-propyl-diethyl amines were treated with excess ethyl iodide in toluene solution. The mixture was heated on a water-bath under reflux for several hours. The yields obtained were 35–50%. Table I gives the properties of the substances prepared.

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p-Bromophenacyl Esters

Three unreported p-bromophenacyl esters of acids have been prepared by the method outlined by Shriner and Fuson.[1] The melting points were taken with calibrated total immersion Anschütz thermometers.

p-Bromophenacyl Oxalate.—The fine white plates from acetone, which were nearly insoluble in absolute alcohol, melted at 242° with decomposition.

Anal. Calcd. for $C_{18}H_{12}O_6Br_2$: C, 44.65; H, 2.50. Found: C, 44.50; H, 2.56.

Methyl p-Bromophenacyl Succinate.—Methyl hydrogen succinate was prepared by reaction of succinic anhydride with methanol, the product being recrystallized from carbon disulfide. The p-bromophenacyl ester formed white plates when recrystallized from dilute methyl alcohol, m. p. 104.6–104.8°.

Anal. Calcd. for $C_{13}H_{13}O_5Br$: C, 47.43; H, 3.98. Found: C, 47.45; H, 4.08.

Methyl p-Bromophenacyl Glutarate.—Sodium methylglutarate was prepared by a method analogous to that reported for sodium ethylglutarate.[2] White plates of the p-bromophenacyl ester are formed on recrystallization from dilute methyl alcohol, m. p. 46.6–46.8°.

Anal. Calcd. for $C_{14}H_{15}O_5Br$: C, 48.91; H, 4.41. Found: C, 48.96, 48.99; H, 4.53, 4.57.

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(1) Shriner and Fuson, "Identification of Organic Compounds," John Wiley and Sons, Inc., New York, N. Y., 1935, p. 144.

(2) Mol, *Rec. trav. chim.*, **26**, 379 (1907).