We then turned to ordinary saturated esters in order to see whether this effect of impeding the attack of the Grignard reagent on the ester carbonyl is a general one, and we now want to report that this indeed appears to be the case. The results are shown in Table 1.

TABLE 1

YIELDS IN PERCENT OF TERTIARY ALCOHOLS FORMED BY UNCATALYZED OR COPPER(I) CHLORIDE CATALYZED REACTIONS OF ESTERS WITH BUTYLMAGNESIUM BROMIDE

sec-Butylester unless otherwise indicated	*Uncatalyzed*			*Catalyzed*		
	Yield	*Ester recov.*	*Yield based on consumed ester*	*Yield*	*Ester recov.*	*Yield based on consumed ester*
Cyclopropanecarboxylate	53	41	63	22	68	67
Cyclopropane-1,1-dicarboxylate	90	2	92	73	8	80
Propionate	47	not determined		31	not determined	
Butyrate	55	31	80	15	80	72
Caproate	52	28	71	29	63	78
Caproate, reaction with methylmagnesium bromide	64	28	90	67	14	78
Ethyl caproate	77	5	81	71	14	83
Isobutyl methyl ketone	79	10[a]	88[a]	81	10[a]	90[a]

[a] Read ketone instead of ester in the column head.

In the reactions with the *sec*-butyl esters of propionic, butyric and caproic acids with butylmagnesium bromide, the yields of tertiary alcohol were considerably reduced by the presence of copper(I) chloride. We are now pursuing further studies as to the nature of this effect and its relation to other effects, on the course of Grignard reactions previously reported[1]. At the present time there may be some evidence that a steric effect is involved, since the effect is not observed in the case of a methyl ketone, and only a feeble effect, if any, is found in the case either of an ethyl ester reacting with butylmagnesium bromide or of a *sec*-butyl ester reacting with methylmagnesium bromide.

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ERRATUM

In the article VINYL DERIVATIVES OF METALS. XVIII, *J. Organometal. Chem.*, 1 (1963) 141, the abscissa of Fig. 2. shoud read: 6.0 5.0 4.0 3.0 2.0

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