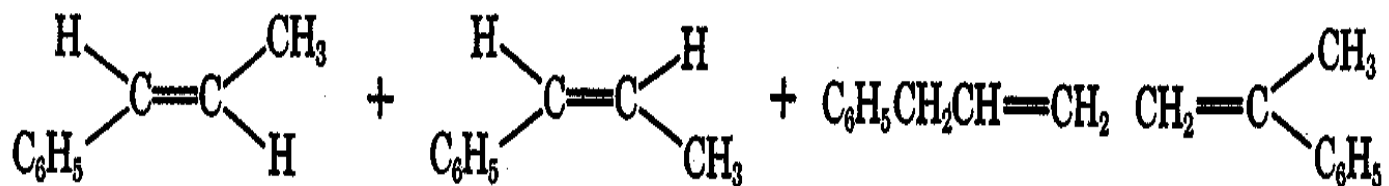
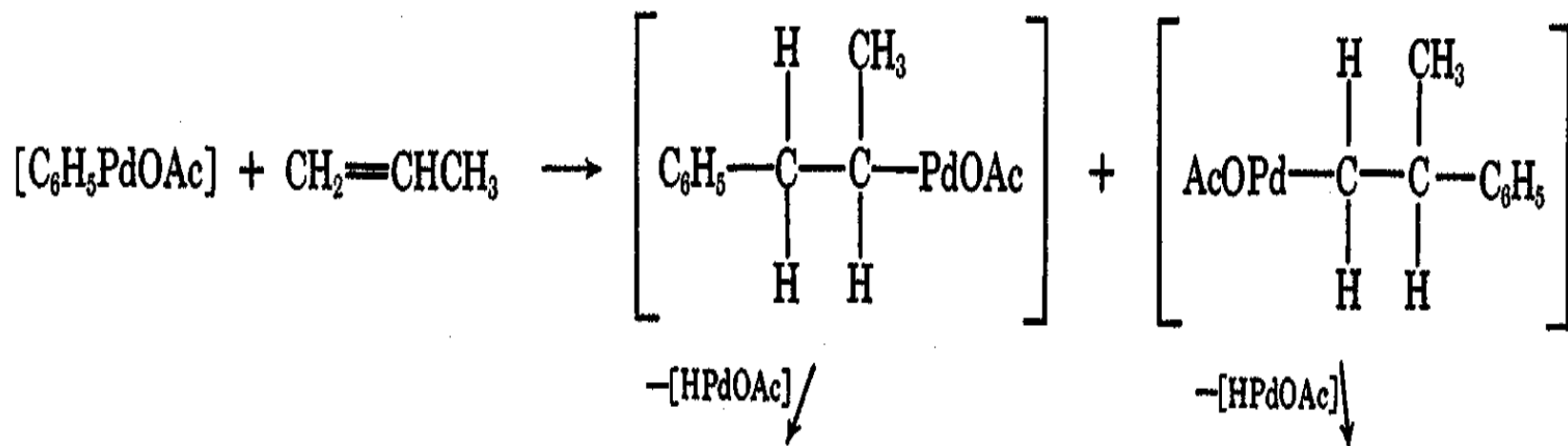
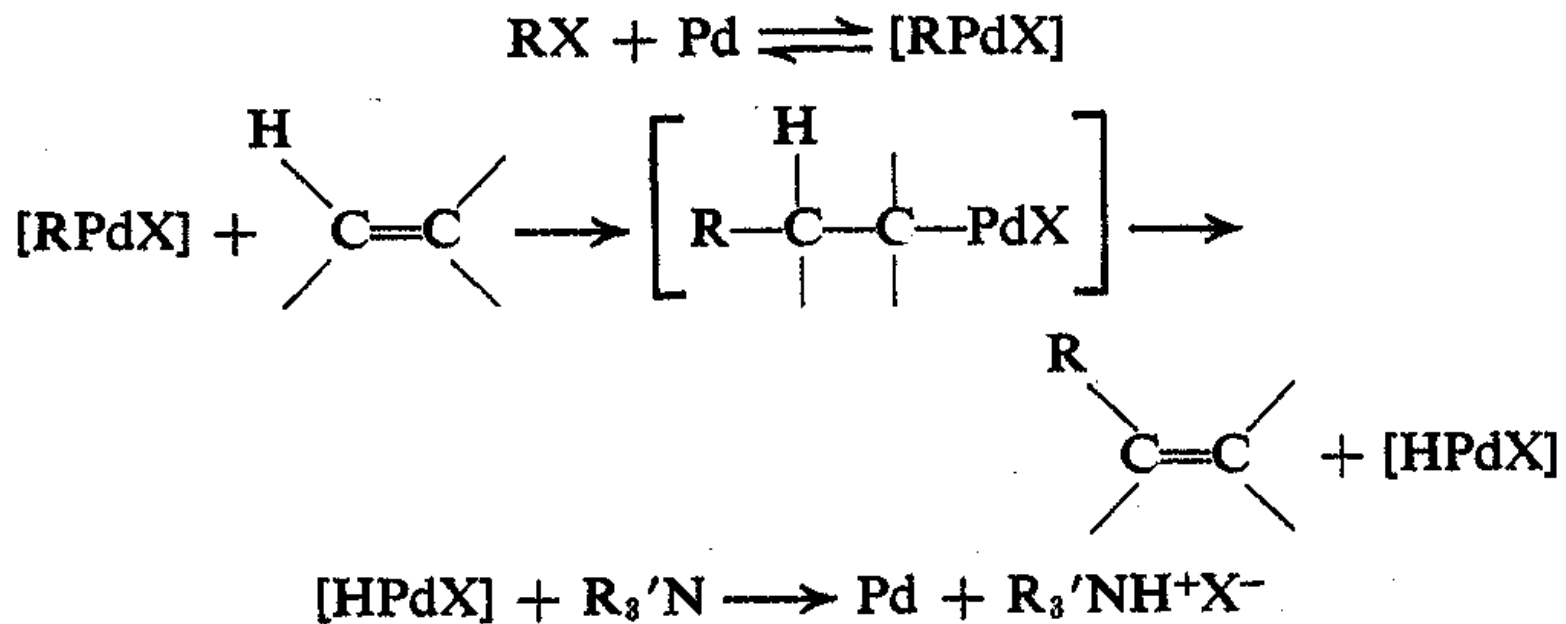


PALLADIUM REACTIONS FOR ORGANIC SYNTHESES

**Prof. Richard F. Heck
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Scheme I

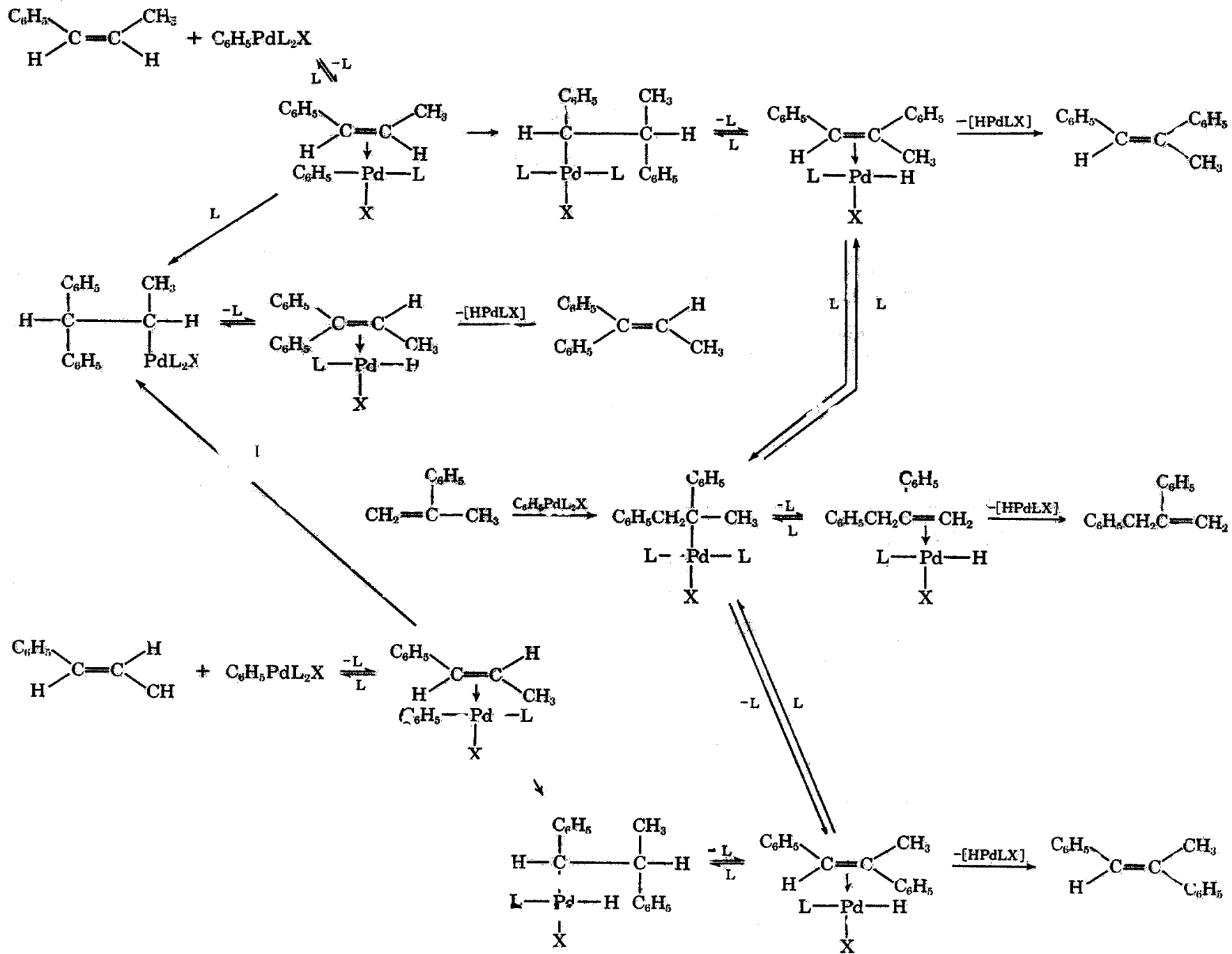
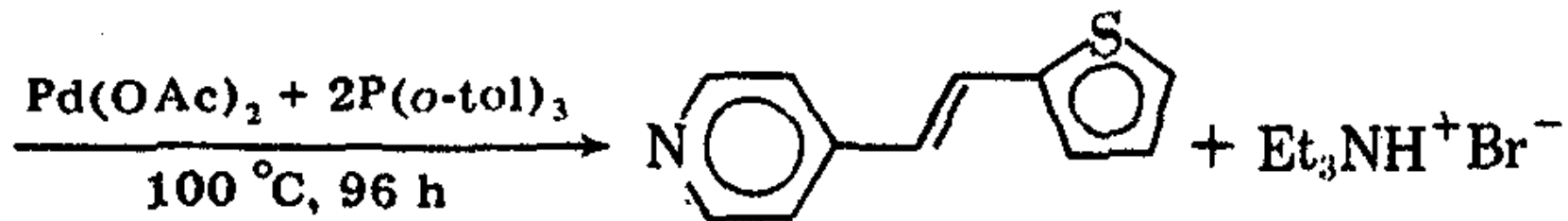
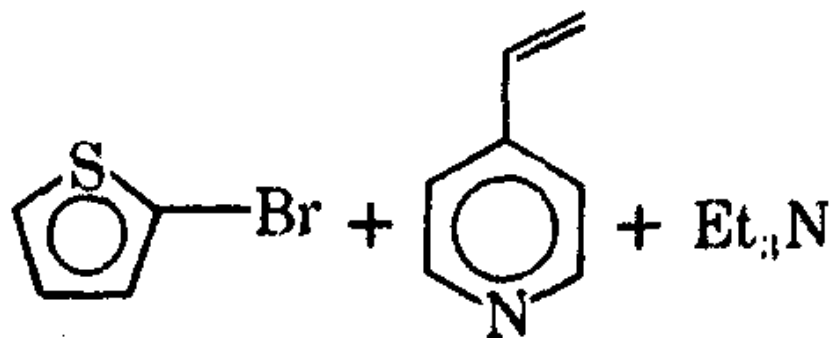
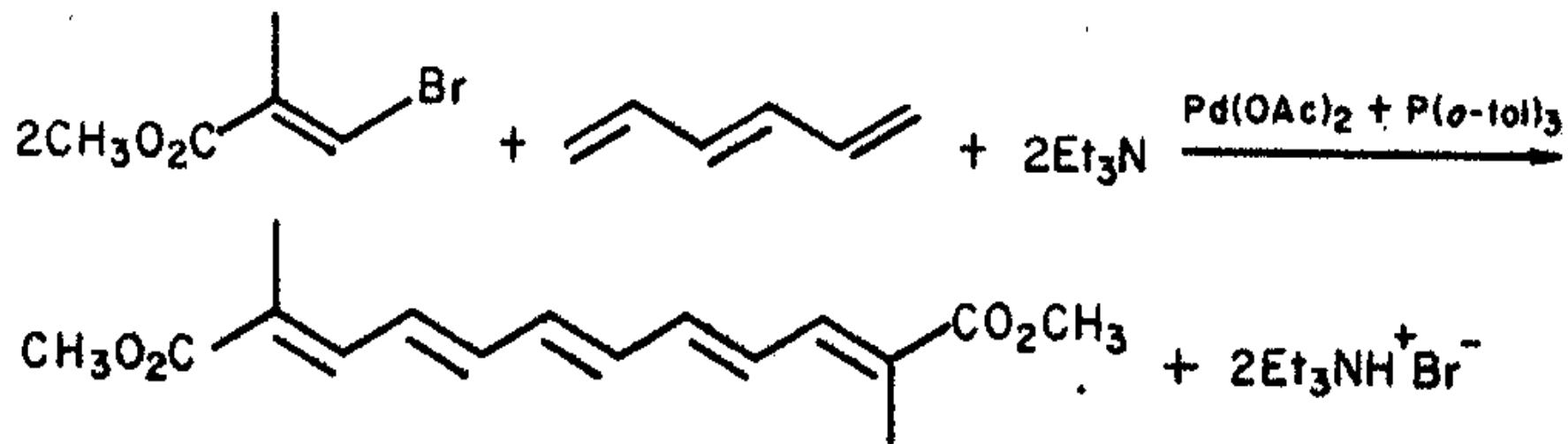


Table II. Influence of the Organophosphine on the Palladium-Catalyzed Reaction of 4-Bromophenol with Methyl Acrylate^a

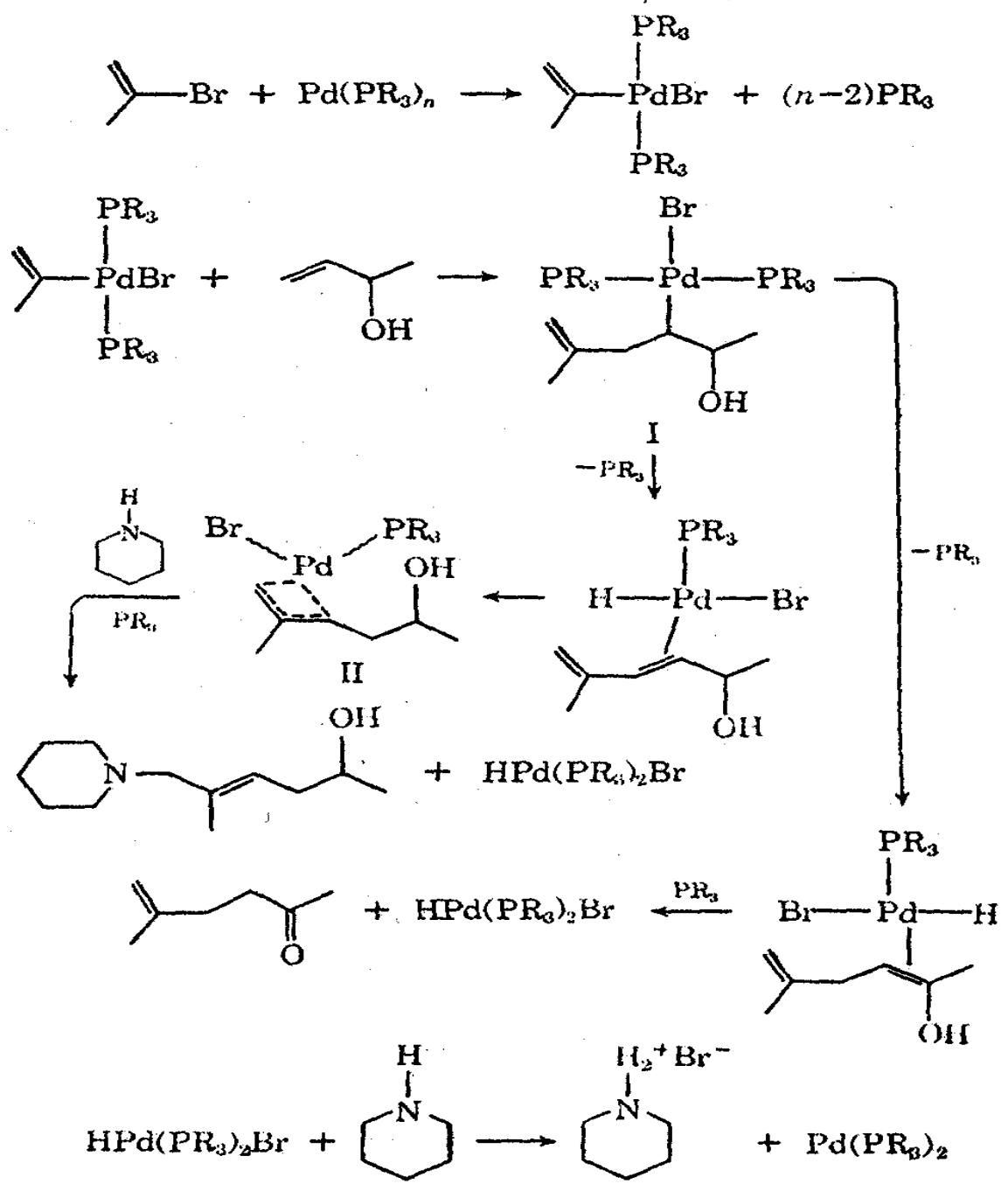
phosphine	registry no.	P/Pd	reaction temp, °C	time, h	% yield (GLC)
Ph ₃ P	603-35-0	2	75	6 ^b	3
Ph ₃ P		6	75	50 ^b	5
(<i>o</i> -tol) ₃ P	6163-58-2	2	75	22	98
(<i>o</i> -tol) ₃ P		6	75	49	95
(<i>p</i> -tol) ₃ P		2	100	45	26
(α -nap) ₃ P	3411-48-1	2	100	45	8
(4-CH ₃ OCOC ₆ H ₄) ₃ P	66417-54-7	2	75	50	4
(4-(CH ₃) ₂ NC ₆ H ₄) ₃ P	1104-21-8	2	75	50	~0
[2,3,4,5-(CH ₃) ₄ C ₆ H] ₃ P	66417-52-5	2	75	90	37
[2,3,4,5-(CH ₃) ₄ C ₆ H] ₃ P		6	75	100	8
(2-C ₂ H ₅ C ₆ H ₄) ₃ P	50777-27-0	2	75	51	43
(2-C ₂ H ₅ C ₆ H ₄) ₃ P		6	75	50	95
(2,5- <i>i</i> -Pr ₂ C ₆ H ₃) ₃ P	63600-29-3	2	75	53	27
(2,5- <i>i</i> -Pr ₂ C ₆ H ₃) ₃ P		6	75	50	68
[2-CH ₃ -5- <i>t</i> -BuC ₆ H ₃] ₃ P	66417-48-9	2	75	51	87
[2-(CH ₃ -5- <i>t</i> -BuC ₆ H ₃)] ₃ P		6	75	49	95
(2-CH ₃ -4-(CH ₃) ₂ NC ₆ H ₃) ₃ P	66417-47-8	2	75	50	20
[2-CH ₃ -5-CF ₃ C ₆ H ₃] ₃ P	66417-45-6	2	75	35	29
[2-CH ₃ -5-CF ₃ C ₆ H ₃] ₃ P		6	75	49	95
2,6-(CH ₃ O) ₂ C ₆ H ₃ PPh ₂	66417-43-4	2	75	8 ^b	1
(NCCH ₂ CH ₂) ₃ P	4023-53-4	2	75	4 ^b	~0

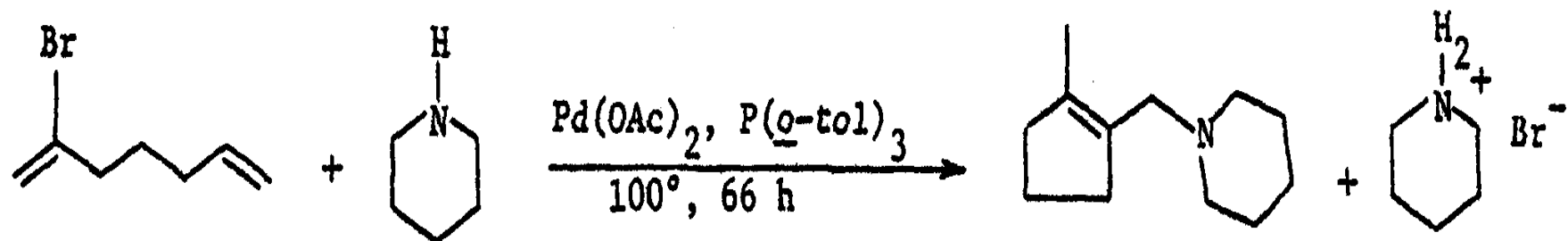
^a Carried out with 1 mol % of palladium acetate based upon the aryl halide. ^b No further increase in yield was observed with longer reaction time.





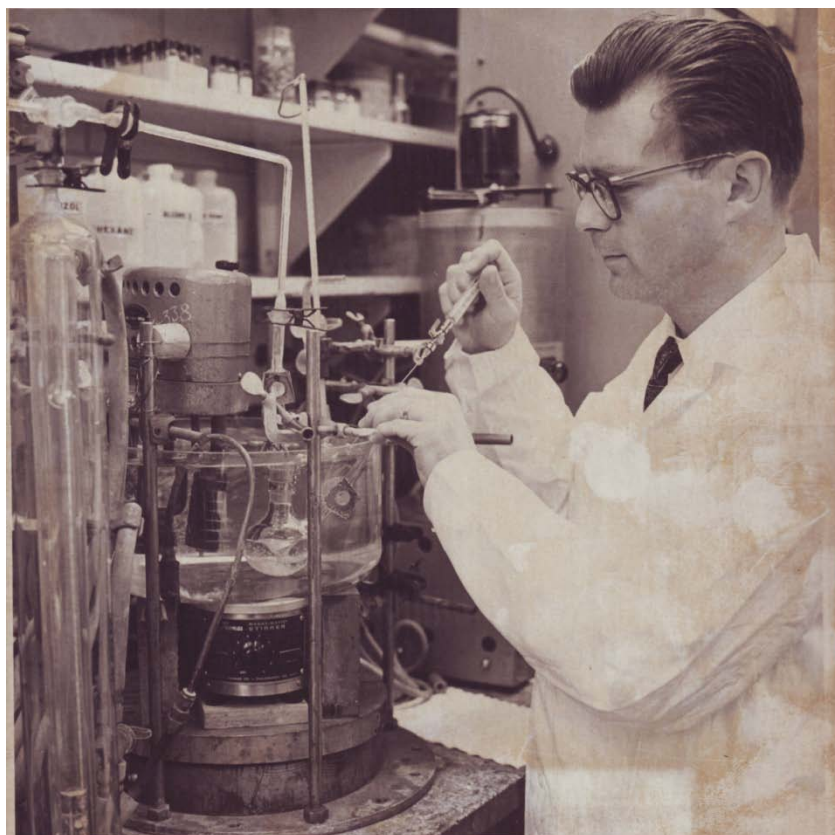
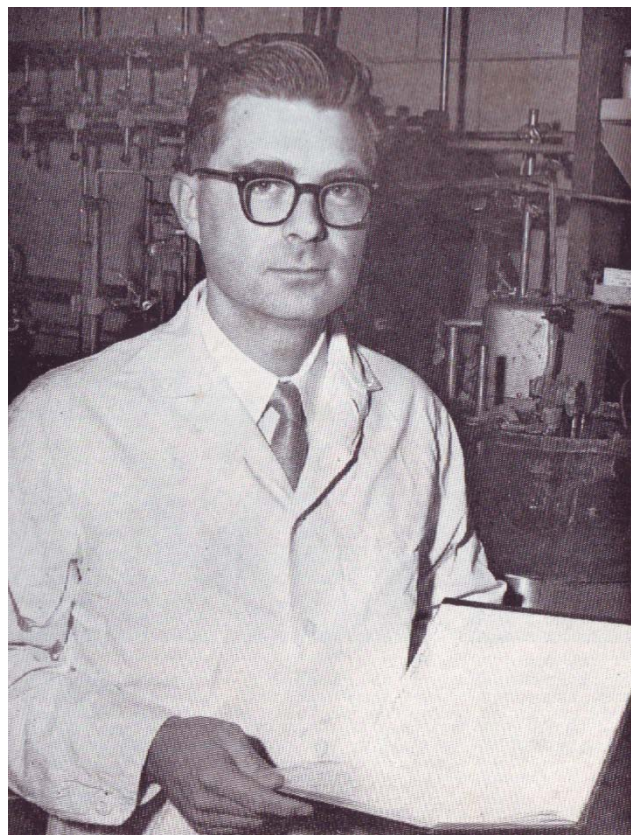
36%





71%

III



Acknowledgments

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