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Unexpected Formation of α -(N-Methyl)-aminoalkanephosphonate

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In contrary to a known² reaction of 2<u>H</u>-azirines with triethyl phosphite in the presence of ethanol, prolonged heating of 5,5-dimethyl-1-pyrroline <u>1</u> (or its 1-oxide) with trimethyl phosphite in methanolic medium yields a new ester <u>4</u>, $\mathcal{E}_{H}(CCl_{4})$ 0.86 and 1.12 (2xMe,2xs), 2.35 (NMe,s), 3.68, and 3.75 (2xOMe,2xd,<u>J</u>=10.3 and 9.9 Hz)

$$\begin{array}{c|c}
 & P(0Me)_3, \Delta, \text{ Ar} \\
\hline
 & Xylene/Me0H, 1:1
\end{array}$$

$$\begin{array}{c|c}
 & \overline{N} \\
\hline
 & N \\
\hline
 & P(0Me)_2
\end{array}$$

$$\begin{array}{c|c}
 & \overline{N} \\
\hline
 & N \\
\hline
 & P(0)(0Me)_2
\end{array}$$

$$\begin{array}{c|c}
 & N \\
\hline
 & N \\
\hline
 & N \\
\hline
 & Me
\end{array}$$

$$\begin{array}{c|c}
 & P(0)(0Me)_2\\
\hline
 & Me
\end{array}$$

$$\begin{array}{c|c}
 & \underline{A} \\
\hline
 & \underline{A}
\end{array}$$

The course of N-alkylation in the investigated system, which may occur via 2 and/or 3, will be discussed according to spectroscopic data.

- (1) PAN Project CPBP 01.13.3.7.
- (2) D. Redmore, Top. Phosphorus Chem., 8,515-583 (1976).