more complex alkyl residues was effected by manipulating the equilibrium in Scheme III.[10] This equilibrium was influenced by the quantity of alkylating agent, RX, and by the volatility of the leaving methyl halide. Dialkyl phosphonates **10** and **12** are not favored, apparently because of the greater thermodynamic stability of tetrabutylammonium phosphonate vs. tetrabutylammonium halide under the reaction conditions.[11]

The utility of the transesterification technique was demonstrated by synthesis of phosphonate monoesters unobtainable by direct phosphorylation. Carboxymethyl and carbamylmethyl phosphonate esters **11h** and **11i** were prepared using this method. The labile prodrug ester[12] **10j** was synthesized in a one-pot procedure. Transesterification of **9** with (pivaloyloxy)methyl chloride, followed by methylation with dimethyl sulfate, afforded mixed diesters **10j** in 84% yield from **9** (Scheme III).

In summary, 3-(acylamino)azetidinones were selectively phosphorylated at the N-1 position without loss of chirality at the C-3 position. Biologically active N-1 phosphonate monoesters were obtained by selective cleavage of phosphonate diesters or by hydrolysis of N-1 phosphonyl chlorides.[13] The utility of the monoalkyl 2-oxoazetidine-1-phosphonates was expanded by transesterification of the tetrabutylammonium salts of the simple methyl esters. Ester interchange by this method should be applicable to the synthesis of a variety of sensitive substrates containing phosphoric esters.

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Registry No. 1a, 80082-81-1; **1b**, 80582-03-2; **1d**, 80543-45-9; **1e**, 72229-74-4; **2a**, 84486-00-0; **2b**, 84486-58-8; **2c**, 84486-32-8; **2d**, 84486-03-3; **3a**, 85719-53-5; **3b**, 85760-77-6; **3c**, 85710-24-3; **3d**, 85710-25-4; **4a**, 84486-06-6; **4b**, 84520-10-5; **4c**, 84486-33-9; **4d**, 84486-07-7; **4e**, 84486-48-6; **4f**, 84486-41-9; **4g**, 84486-54-4; **5e**, 85710-26-5; **5f**, 85710-27-6; **5g**, 85710-28-7; **6**, 85710-29-8; **7**, 85710-31-2; **8**, 85710-32-3; **9**, 84520-20-7; **10j**, 85710-37-8; **11h**, 85760-79-8; **11i**, 85710-34-5; **11j**, 85710-36-7; $ClPO(OCH_3)_2$, 813-77-4; $ClPO(OCH_2CH_3)_2$, 814-49-3; H_2NCSNH_2, 62-56-6; *n*-$BuOP(O)Cl_2$, 1498-52-8; $F_3CCH_2OP(O)Cl_2$, 462-56-6; $PhOP(O)Cl_2$, 770-12-7; TMSBr, 2857-97-8; $BrCH_2COOBu$-*t*, 5292-43-3; ICH_2CONH_2, 144-48-9; $ClCH_2OCOBu$-*t*, 18997-19-8.

Supplementary Material Available: Listing of physical and spectral data for representative compounds (2 pages). Ordering information is given on any current masthead page.

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[11] In a typical procedure only a 1–4-fold excess of alkylating agent was required. Significant dialkylation is not observed even in the presence of a 10-fold excess of alkylating agent.

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Additions and Corrections

Effect of Particle Size on the Activity of Supported Palladium Catalysts [*J. Am. Chem. Soc.* **1982**, *104*, 5249–5250]. YOSHIO TAKASU,* TSUTOMU AKIMARU, KENJI KASAHARA, YOSHIHARU MATSUDA, HIROYUKI MIURA, and ISAMU TOYOSHIMA.

Page 5249, second paragraph, last sentence: The sentence should be read as follows—These workers found a dramatic *increase* in the rate of carbon formation, as the average particle size decreased.

Effect of Electron Correlation on Theoretical Equilibrium Geometries. 2. Comparison of Third-Order Perturbation and Configuration Interaction Results with Experiment [*J. Am. Chem. Soc.* **1982**, *104*, 5576–5580]. DOUGLAS J. DEFREES, KRISHNAN RAGHAVACHARI, H. BERNHARD SCHLEGEL, and JOHN A. POPLE.*

Page 5578: In Table I the MP3/6-31G* bond length for N_2 should be 1.106 Å. The values in Table II are not affected while the MP3/6-31G* number for N≡N in Table III should be +8.

Micellar Effects upon Spontaneous Hydrolyses and Their Relation to Mechanism [*J. Am. Chem. Soc.* **1982**, *104*, 6654–6660]. H. AL-LOHEDAN, C. A. BUNTON,* and M. MHALA.

Page 6655, Table I: The value of $10^3k_w'$ for PhCOCl should be 860 s^{-1}.

A Systematic Investigation on the Structure and Stability of the Lowest Singlet and Triplet States of Si_2H_4 and SiH_3SiH and the Analogous Carbon Compounds SiH_2CH_2, SiH_3CH, CH_3SiH, C_2H_4, and CH_3CH [*J. Am. Chem. Soc.* **1982**, *104*, 5884–5889]. HANS JOACHIM KÖHLER and HANS LISCHKA.*

Pages 5886 and 5887: Due to an error in processing off diagonal elements of the force constant matrix the harmonic vibrational frequencies for the structures containing SiH_3 and CH_3 groups in Table V (p 5886) and in Table VIII (p 5887) are incorrect. The correct values are given below. These modifications affect to a very small extent zero-point energy corrections but have no influence on our conclusions concerning relative stabilities.

Table A. Harmonic Vibrational Frequencies (cm^{-1}) and Zero-Point Energy ϵ_0 (kcal/mol)

	methylmethlene		methylsilylene		silylmethylene	
symmetry	$^1A'$	$^3A''$	$^1A'$	$^3A''$	$^1A'$	$^3A''$
a'	3280	3368	3275	3278	3209	3410
	3146	3251	3170	3204	2295	2285
	3119	3183	2083	2249	2245	2266
	1625	1642	1548	1616	1005	1028
	1502	1572	1419	1431	985	1015
	1374	1261	1018	955	893	799
	1120	1131	679	688	672	738
	965	876	644	599	542	543
a''	3178	3222	3221	3275	2249	2259
	1632	1627	1633	1602	1128	1010
	986	1093	651	856	960	691
	134	334	518	209	506	476
ϵ_0	31.5	32.2	28.4	28.5	23.8	20.0

Selective Coupling of [(Alkylthio)allyl]titanium Reagent with Carbonyl Compounds. Facile Entry to Alkenyl Oxiranes and 2-(Arylthio)-1,3-butadienes [*J. Am. Chem. Soc.* **1982**, *104*, 7663]. YOSHIHIKO IKEDA, KYOJI FURUTA, NORIYUKI MEGURIYA, NOBUO IKEDA, and HISASHI YAMAMOTO.*

NMR values of **6** and **7** given in the text and in the supplementary material should be exchanged.

6: ^1H NMR (CCl_4) 1.76 (s, 3 H), 4.76–5.37 (m, 3 H), 6.65 (dd, 1 H, 10.4 and 17.6 Hz); IR (CCl_4) 2920, 1800, 1645, 1595, 1440, 990, 900 cm^{-1}.

7: ^1H NMR (CCl_4) 1.71 (d, 3 H, 1.5 Hz), 4.72–5.39 (m, 3 H), 6.24 (dd, 1 H, 10.8 and 17.6 Hz); IR (CCl_4) 2920, 1780, 1640, 1610, 1440, 990, 890 cm^{-1}.