SYNTHETIC STUDY ON THE PIPERIDINE ALKALOID

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Last year in this Symposium, we reported a new reaction concerning a stannous chloride effected ring-opening of the singlet oxygen adduct of 1-acyl-1,2-dihydropyridines in the presence of various kinds of carbon nucleophiles, such as silylated ketones, vinyl ethers, enamines, indoles, furan, and N-methylpyrrole, and established a synthetic way leading to a poly-substituted piperidine derivative in a stereoselective manner starting from alkylpyridines. As an example of this finding, a stereoselective synthesis of carpaine (I), a piperidine alkaloid isolated from Carica papaya, is achieved from pyridine as follows.