

THE TOTAL SYNTHESIS OF (+)-POLYZONIMINE

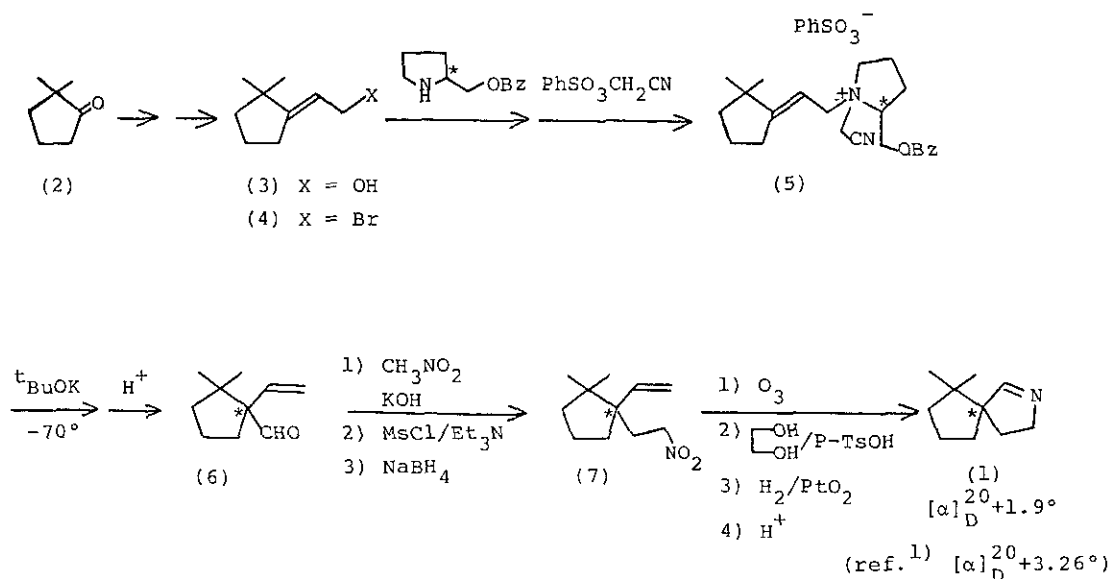
Tsutomu Sugahara, Yuuki Komatsu, and Seiichi Takano

Pharmaceutical Institute, Tohoku University, Aobayama, Sendai
980 Japan

Polyzonimine (1) is an insect repellent isolated from the millipede Polyzoni-
um rosalbum, which has the unique 2-azaspiro [4,4]non-1-ene skeleton¹⁾.

We report a synthesis of (+)-polyzonimine. The allylic bromide (4) derived from cyclopentanone (2) was converted into the chiral ammonium benzenesulfonate (5), which was subjected to asymmetric [2,3]sigmatropic rearrangement²⁾ to give the optical active olefin-aldehyde (6). The transformation of (6) into the (+)-polyzonimine (1) was accomplished by the following steps.

The optical active olefin-aldehyde (6) could be an important intermediate in the preparation of enantiomer of (1). The conversion of (6) to (-)-polyzonimine will be discussed.



References

- 1) J. Smolanoff, et al., *Science*, **188**, 734 (1975).
- 2) K. Hiroi, et al., *Chem. Letter*, **1980**, 1077.