

Letter to the editor

## On the pheromone of the Asparagus fly, *Platyparea poeciloptera*

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Received 20 March 2001; accepted 11 April 2001

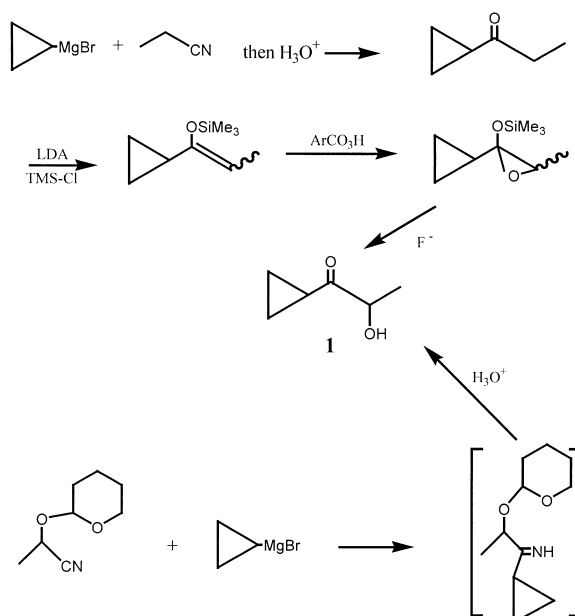
**Keywords:** Pheromones; Asparagus fly; *Platyparea poeciloptera*; 1-(Hydroxyethyl) cyclopropyl ketone

Sir: In a recent demonstration of solid-phase microextraction–gas chromatography–direct deposition infrared spectrometry techniques for the identification of volatile natural products, 1-(hydroxyethyl) cyclopropyl ketone (1-cyclopropyl-2-hydroxypropan-1-one) **1** was tentatively identified as a male-produced pheromone of the Asparagus fly, *Platyparea poeciloptera* Schrank (Diptera: Tephritidae) [1]. We here report the synthesis of racemic **1** by two unambiguous pathways (Scheme 1, experimental details available on request), and have determined that the physical properties of the synthetic material **1** do not match those of the presumed pheromone. Thus the structure of the *P. poeciloptera* pheromone remains unknown, and investigations will continue subject to availability of additional samples.

### Experimental

The physical data reported below were collected in the US Laboratory with a Hewlett-Packard 5890 gas chromatography–mass spectrometry (GC–MS) sys-

tem at 70 eV and a General Electric QE 300 MHz nuclear magnetic resonance (NMR) spectrometer. Non-identity with the natural product was confirmed in the French Laboratory on the equipment described in the original communication [1]. Mention of a



Scheme 1. Synthetic pathways to 1-(hydroxyethyl) cyclopropyl ketone **1**.

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Synthetic 1-(hydroxyethyl) cyclopropyl ketone **1** had b.p. 93–96°C, 0.3 Torr (1 Torr=133.322 Pa), MS ( $m/z$ , %): 114 (0.5,  $M^+$ ), 71 (16), 69 (100), 55 (7), 45 (70), 43 (27), 42 (18), 41 (88), 40 (8). IR (neat,  $\text{cm}^{-1}$ ): 3515, 2990, 1800, 1390.  $^1\text{H-NMR}$  ( $\text{C}^2\text{H}_2\text{Cl}_2$ , 300.65 MHz),  $\delta$  0.90 (4H, m, cyclopropyl  $\text{CH}_2$ ), 1.42 (3H, d,  $J=7.2$  Hz,  $\text{CH}_3$ ), 2.01 (1H, m, CH), 3.76 (1H, s, OH), 4.40 (1H, q,  $J=7.2$  Hz, CH),

$^{13}\text{C-APT-NMR}$  ( $\text{C}^2\text{H}_2\text{Cl}_2$ , 75.6 MHz),  $\delta$  11.46 ( $\text{CH}_2$ ), 11.84 ( $\text{CH}_2$ ), 16.91 (CH), 20.20 ( $\text{CH}_3$ ), 73.48 (CH), 213.12 (CO).

## References

- [1] J. Auger, S. Rousset, E. Thibout, B. Jaillais, J. Chromatogr. A 819 (1998) 45.