Aryne’t You Doubly Impressed with this Cyclopropenone Insertion?

**Significance:** The authors demonstrate a method to formally insert two aryne units into the carbon-oxygen double bond of a ketone, producing spirocyclic xanthene–cyclopropene scaffolds 1. Mechanistically, a direct formal [2+2] cycloaddition of an aryne with cyclopropenone is followed by the subsequent cycloaddition of the ortho-quinone methide intermediate with the second aryne equivalent.

**Comment:** The reaction relies on the strong nucleophilicity of the ketone oxygen: cyclopropenone proved to be one of the best candidates due to its zwitterionic structure, and attempts to generalize the reaction with other ketones failed. Interestingly, the more electron-rich aryne precursor, when exposed to trace acid, ring-opened to produce xanthylum triflate 2.

Selected examples:

- **Example 1:**
  - Reaction conditions: MeCN, 30–60 °C, 24 h
  - Yield: 80%

- **Example 2:**
  - Reaction conditions: MeCN, 35 °C, 24 h
  - Yield: 78%

- **Example 3:**
  - Reaction conditions: MeCN, 30 °C, 24 h
  - Yield: 56%

**Xanthylum triflate formation:**

- **Example 1:**
  - Reaction conditions: MeCN, 30 °C, 24 h
  - Yield: 37%

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