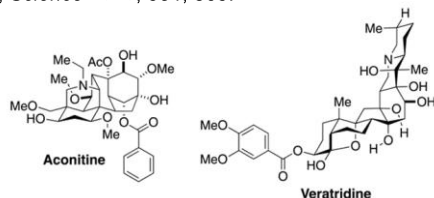
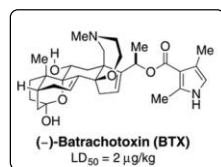


## Batrachotoxin

J. Du Bois and co-workers; *Science* **2016**, *354*, 865.



- Structurally related lipophilic tertiary amine derivatives sharing the same binding site (site 2) in Na<sub>v</sub> (voltage-gated sodium ion channels => membrane proteins with a key role in biosignalling).

- BTX is a full agonist, causing Na<sub>v</sub> to open, inhibiting its (slow or fast) inactivation, and leading to a decrease of ion selectivity.

Veratridine: partial agonist.

Aconitine: partial inhibitor.

=> BTX is a preferential probe for the investigation of ion channel dynamics.

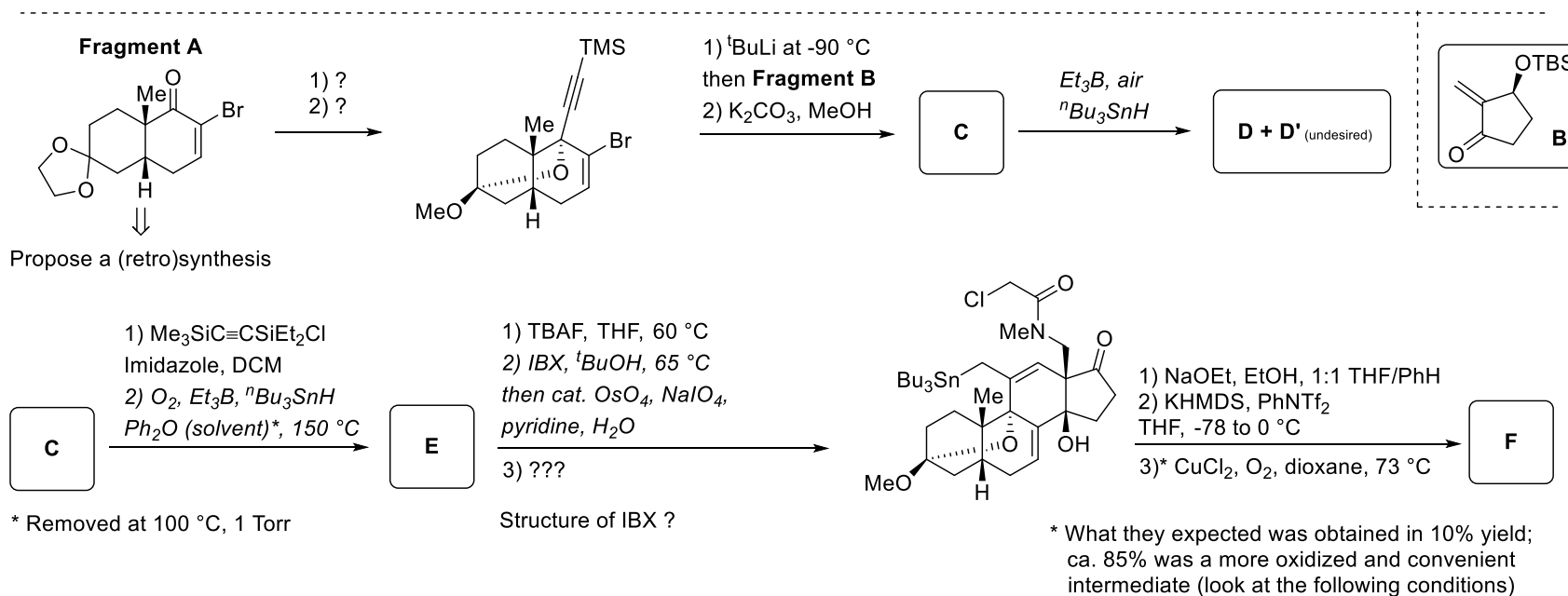


Colombian poison dart frog  
(genus *Phylllobates*)

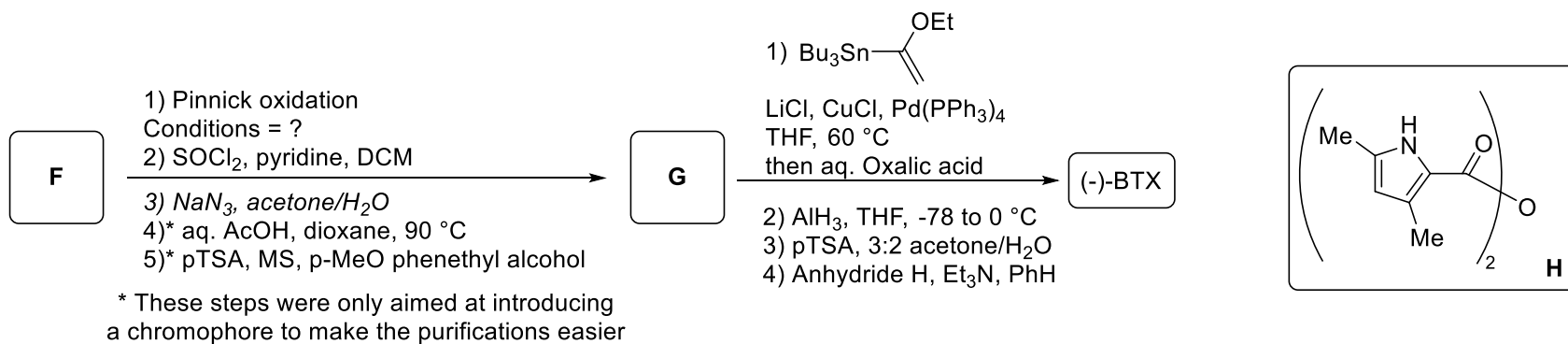
Why to synthesize BTX?

- World supply (initially 1 g) rapidly depleted.
- Dart poison from placed on the endangered species list
- Collection from other sources (birds or beetles) provides insufficient amounts for study purposes

Previous (racemic) syntheses: > 45 steps.



Discuss the mechanism of *the steps in italics*



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If time allows...

