Soluble and Stable Zethrenebis(dicarboximide) and Its Quinone

Significance: Despite first being synthesized decades ago by Clar and co-workers, zethrene only recently began attracting major interest due to its potentially interesting optoelectronic properties. Poor air and light sensitivity of unsubstituted zethrene would not have aided its cause. A more convenient route to zethrene was found in the 1960's during attempts to synthesize and isolate the unstable tetradehydrodinaphtho[10]annulene, a precursor of zethrene. This was not successfully done until last year.

Comment: Employing the same strategy discovered by Staab and Sondheimer in the 1960’s, the authors take advantage of the automatic transannular cyclization of the tetradehydrodinaphtho-[10]annulene to form the butadiene core of the zethrene. Meanwhile, the overall improved stability of 1 no doubt makes it an interesting compound for further optoelectronic studies. Extremely notable as well is that attempts to brominate 1 using N-bromosuccinimide in the presence of DMF unexpectedly leads to the formation of the respective quinone 2.