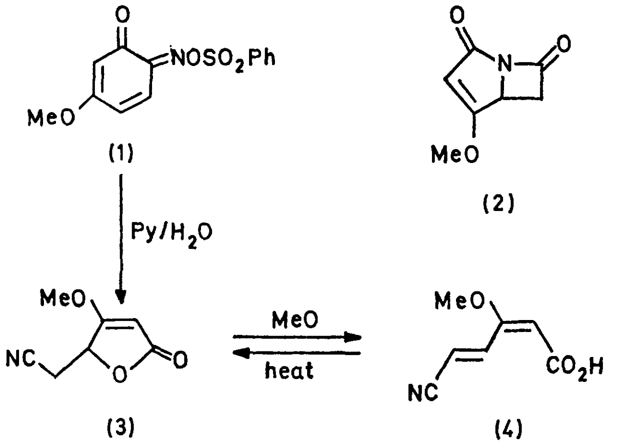
A Revised Structure for the Product from the Decomposition of an *o*-Quinone Oxime Benzenesulphonate

By Ian Fleming*
(*University Chemical Laboratory, Lensfield Road, Cambridge* CB2 1EW)
and N. Hatanaka, H. Ohta, O. Simamura, and M. Yoshida
(*Department of Chemistry, The University of Tokyo, Bunkyo-Ku, Tokyo*)

Summary The product from the decomposition of 4-methoxy-*o*-benzoquinone 1-(*O*-phenylsulphonyl)oxime (**1**) is not 4-methoxy-1-azabicyclo[3,2,0]hept-3-ene-2,7-dione (**2**); it is γ-cyanomethyltetronic acid methyl ether (**3**).

In a recent paper,[1] a bicyclic imide (**2**) was reported to be the product from the thermal decomposition in aqueous pyridine of the oxime benzenesulphonate (**1**). This was a mistaken structural assignment: the neutral product, m.p. 128·5—129·5°, is in fact the tetronic acid methyl ether (**3**). This formulation is entirely consistent with the spectroscopic and degradative evidence given in the original paper. Indeed it fits those data better than the original formulation does: its conversion into the cyano-acid (**4**) by treatment with base is mechanistically reasonable, as the corresponding reaction on a compound with the original formulation is not. The reverse reaction, the conversion of the cyano-acid (**4**) into the tetronic acid methyl ether (**3**) is similar in general outline to a known method for the synthesis of tetronic acids.[2] Proof of the structure (**3**) is provided by the i.r. spectrum, which shows a relatively weak band at 2250 cm^{-1}, overlooked in the original work.



(*Received*, 15*th December* 1971; *Com.* 2132.)

---

[1] N. Hatanaka, H. Ohta, O. Simamura, and M. Yoshida, *Chem. Comm.*, 1971, 1364.

[2] I. Fleming and J. Harley-Mason, *J. Chem. Soc.*, 1963, 4778.