

# This Week's Citation Classic

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Bowden K Heilbron I M, Jones E R H & Weedon B C L. Researches on acetylenic compounds Part I. The preparation of acetylenic ketones by oxidation of acetylenic carbinols and glycols. *J. Chem. Soc. (London)* 1946:39-45.

**A new and convenient synthesis of acetylenic ketones by chromic acid oxidation of the corresponding secondary alcohol in acetone solution is described. By this means, ethynyl ketones, previously practically unknown, became readily available. The reactions of these compounds are described in subsequent papers. [The *SCI*<sup>®</sup> indicates that this paper has been cited over 1240 times since 1961.]**

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"To recall events that happened over thirty years ago is an exercise fraught with pitfalls, but the circumstances and people then involved were exceptional and are not easily forgotten. The work was carried out during wartime in the Chemistry Department of the Royal College of Science, London, a building erected from part of the proceeds of the 1851 Exhibition. At first, air raids at night were common and to get sleep was often more important than the danger of death or mutilation. Later, during daytime, pilotless bombs could be seen as they appeared to fly close to the towers of the Imperial Institute on the other side of the road. One night, when I was alone in a laboratory pressing sodium wire into ether, I heard the approach of one of these missiles. The beads of perspiration

that fell from my forehead, nearly igniting the sodium, were, however, a greater danger!

"This might give the impression of a sombre situation, but such was not the case. There were, in that Victorian building, groups of talented and colourful scientists, many of whom later were to become distinguished. The professor of organic chemistry was Sir Ian Heilbron who, with the now Sir Ewart Jones, had built up an outstanding research school working on, amongst other topics, the synthesis of vitamin A and related compounds. They had long realized that a systematic investigation of the chemistry of acetylene and related compounds was desirable.

"Previous workers had laid the foundations for the preparation of acetylenic ketones before I joined the department and my task was to prepare and investigate this class of compounds. Preparation involved the oxidation of acetylenic alcohols in acetone with chromic acid. This proved to be an elegant method and gave rise to the term 'the Jones reagent' when it was found applicable to the oxidation of a variety of compounds. I had been granted my Bachelor's degree before joining the department and had some years' experience in industrial research. However, I found work on acetylenic compounds to be quite a new experience, but one soon learned from the expertise of colleagues. Sometimes it was necessary to run down the corridor with a new compound to give it to the department's competent analyst before it decomposed. It was a period when rubber bungs or a Dewar flask were treasured possessions and apparatus was often homemade. Structural determination of a compound often depended on an ultraviolet spectrum obtained photographically in a spark spectrometer by Dr. E. A. Braude. There were giants in those days."