

PROCEEDINGS OF THE CHEMICAL SOCIETY

JANUARY 1957

THE Proceedings of the Chemical Society at one time occupied a much more important place amongst the Society's publications than has been the case in recent years. Nevertheless the fact remains that the Proceedings now form the only regular link which the Society maintains with the majority of its Fellows. It has long been the wish of Council to strengthen these links and a step in this direction is now being taken by revision of the scope and format of Proceedings. It is my privilege to commend this change to Fellows of the Society and to outline the plans made for the revised and enlarged Proceedings.

As in the past the Proceedings will contain an official record of the Society's business, including notices of forthcoming meetings and records of the election of Fellows, Officers, Local Representatives, and Committees. There will be, however, many changes and additions designed to keep Fellows in touch with the work of the Society and with the general progress of chemical science.

For instance, it is proposed to publish abstracts of papers read at meetings of the Society together with an account of the discussions which followed. This will apply also to Symposia sponsored by the Society, if the papers presented are not to be published in full in the form of Special Publications:

The new Proceedings will contain the Report of the Anniversary General Meeting and the Special Lectures and Obituary Notices which have hitherto appeared in the *Journal*. It is proposed also to establish an entirely new feature by

the publication in the Proceedings of short Communications dealing with work which merits publicity before a full report can be prepared and published. These Communications will be refereed and edited. They are to be confined to scientific matters which can be regarded as of immediate importance to a substantial body of chemists. Details of the mode of operation of the new scheme will be found on page 18 of this issue.

In addition, Letters to the Editor on matters of general interest to chemists will be accepted subject to Editorial discretion, and from time to time it is hoped to include longer articles on subjects of special interest to Fellows.

It is hoped that the new Proceedings will provide something of interest and value to each Fellow, and with this end in view it has been decided to include items of topical interest such as new appointments of Fellows, honours and awards made to Fellows, the expected arrival in this country of scientists from overseas, notices of awards open to competition, announcements concerning kindred organisations, accessions to the Library, and so on.

The Publication Committee has accepted responsibility for the new Proceedings and an Advisory Panel has been appointed to deal with its development. Suggestions, comments, and criticisms will be welcomed by the Editor, and I appeal to all Fellows to assist in any way they can to make the new venture play its full part in maintaining the continued progress of the Chemical Society's activities.

E. L. HIRST

COMMUNICATIONS

"Communications" are required to satisfy each of the three following requirements: urgency, importance, and wide interest. The primary consideration will be that chemists in general shall benefit from information in advance of full publication. The object shall be to share knowledge, not claim priority or reserve a field. Polemics, including prolonged argument about known experimental facts, would not be acceptable.

Details of experimental methods will not be published unless they are an essential part of the "Communications," nor will the physical or chemical properties of intermediates in syntheses or degradations.

"Communications" will be considered for publication whether or not the author is a Fellow of The Chemical Society. They will be subject to refereeing and, if accepted, to editing. Authors are advised to submit, with the manuscript, a statement for the benefit of the referees setting out briefly the reasons why publication in advance of full presentation is requested.

Authors whose "Communications" are accepted should consider themselves under obligation to publish adequate details as soon as possible, or to withdraw the claims made, but not necessarily in a publication of The Chemical Society.

Manuscripts must be marked "Communication for Proceedings" and sent, in duplicate, to the Honorary Secretaries, The Chemical Society, Burlington House, Piccadilly, London, W.1. They should not normally exceed 600 words in length, *i.e.*, three quarto pages of typescript in double-line spacing, including formulæ or diagrams, which should be kept to a minimum and may delay publication.

Authors should observe the Society's conventions for nomenclature, symbolism, etc., outlined in the brochure "The Presentation of Papers for the Journal of The Chemical Society," but references should be given as footnotes (see *Proceedings of The Chemical Society*, July 1955, pp. 79—81).

Dissociation in solid solution in potassium bromide. The monomeric hyponitrite ion NO^-

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THE existence of the series NO_2^+ , NO_2 , NO_2^- suggests the possibility of completing the series NO^+ , NO , NO^- by discovery of the "monomeric hyponitrite" ion NO^- , and it was with this thought that a Raman and infrared spectroscopic study of metal hyponitrites in solution and in solid form was begun.

The first result was the observation of a two-line Raman spectrum (frequencies 1383 and 1115 cm^{-1}) and a moderately rich infrared spectrum (frequencies 504, 863, 1020, 1129, and 2207 cm^{-1}), which obviously could not belong to NO^- . An analysis of these spectra has led us to conclude that, as has been suggested before,¹ the hyponitrite ion is $\text{N}_2\text{O}_2^{2-}$ with a planar, centrosymmetric, *trans*-bent configuration.

It was in the course of this work that we changed our practice of preparing solids for infrared examination from the older mull method to the newer device of compression with potassium bromide into a clear disc. We found that in such preparations the com-

plex infrared spectrum had disappeared and had become replaced by a single new frequency (1445 cm^{-1}). This, we suggest, is the spectrum of the originally sought NO^- , the hyponitrite ion having undergone dissociation to two NO^- ions, which take the place of Br^- ions in solid solution in the potassium bromide. The significance of this result for infrared spectroscopy is that the interpretation of spectra observed when discs of potassium bromide are used needs to take into account the possibilities of the presence of the sample as suspended microcrystals,² as a solid solution,³ and also as a solid solution of dissociation products. Since the investigation of dissociation in solid solution is bound to be protracted, we are reporting this initial result, to draw attention to such dissociation and its implications for infrared spectroscopy. As far as concerns NO^- itself, we hope to study it magnetically and in other physical ways.

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¹ Kuhn and Lippincott, *J. Amer. Chem. Soc.*, 1956, **78**, 1820.

² Ford, Wilkinson, and Price, "Molecular Spectroscopy," Ed. George Sell, Inst. Petroleum, 1955, p. 89.

³ Pliskin and Eischens, *J. Phys. Chem.*, 1955, **59**, 1156. Ketelaar, Haas, and van der Elsken, *J. Chem. Phys.*, 1956, **24**, 624; Jones and Chamberlain, *J. Chem. Phys.*, 1956, **25**, 365.