



THE

# CHESAPEAKE CHEMIST

MARYLAND SECTION  
AMERICAN CHEMICAL SOCIETY

VOL. XXVII

MARCH, 1971

NUMBER 3



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# THE CHESAPEAKE CHEMIST

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## MARCH MEETING



J. H. PERLSTEIN

### DATE:

WEDNESDAY, MARCH 17,  
1971

### PLACE:

Eudowood Gardens Lecture  
Room, Eudowood Plaza, Joppa  
Road near Goucher Boulevard.

### SPEAKERS AND TOPICS:

5:30 P.M. Dr. Jerome H. Perl-  
stein, Johns Hopkins Univ.,  
"Mixed Valence Chemistry in  
The Solid State".

8:30 P.M. Dr. J. L. Burmeister,  
Univ. of Delaware, "Ambiden-  
tate Ligands—The Schizophren-  
ics of Coordination Chemistry".

### SOCIAL HOUR:

There will be a social hour after  
the meeting. Refreshments will  
be served.

MARCH, 1971

### COCKTAILS AND DINNER:

Eudowood Gardens Dining Room.  
Price is \$4.75 per person for  
cocktails (6:30-7:15, unlimited  
quantity) and hot buffet din-  
ner (7:15). Students and their  
spouses may attend the dinner  
for \$3.00. Reservations are nec-  
essary for the dinner, and should  
be made with Mr. Allen Bednar-  
czyk, McCormick and Co., Inc.,  
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Md. 21030, phone 666-3155, no  
later than March 12. It is not  
necessary to be a member of  
the American Chemical Society  
to attend the dinner or the talks,  
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wife and friends to both the  
dinner and the meeting.



J. L. BURMEISTER

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**J. H. PERLSTEIN**

Assistant Professor of Chemistry at the Johns Hopkins University, he has been with the Department of Chemistry since 1967. Previously he received his Ph.D. in solid state chemistry from Cornell University working with M. J. Sienko on the electrical and magnetic properties of metal-metal bonds in transition metal oxides. His present interests are in the area of inorganic and organic solid state chemistry, in particular the study of long range metal-metal bonding in mixed oxidation state inorganic complexes which are presently of interest as models for high temperature super-conductors.

**MIXED VALENCE CHEMISTRY  
IN THE SOLID STATE**

Most inorganic solid state compounds which contain complexed metal ions are electrical insulators because electrons on equivalent crystallographic sites tend to remain localized to minimize electron-electron repulsion. Such complexes usually have all their metal ions in the same oxidation state. Changes in the oxidation state of some of the ions reduces this repulsive interaction and allows for high electron transfer rates between adjacent metal sites. The discussion will focus on several mechanisms for this electron transfer process and the experimental techniques which allow these mechanisms to be sorted out. Applications to mixed valence square planar complexes of platinum and iridium and to "mixed valence" organic donor-acceptor complexes will be described.

**J. L. BURMEISTER**

John Burmeister was born in Fountain Springs, Pennsylvania in 1938. He received his B.S. degree from Franklin and Marshall College in 1959 and his Ph.D. from Northwestern University in 1963.

He served a year as an Instructor in Inorganic Chemistry at the University of Illinois before joining the faculty of the University of Delaware in September of 1964. In 1969, he was promoted

to Associate Professor of Chemistry. He was the recipient of the Gelewitz Award given by Northwestern University in 1963 and the Excellence in Teaching Award given by the Lindbach Foundation and the University of Delaware in 1968. He is a member of the American Chemical Society, the Chemical Society (London), Sigma Xi, and Phi Lambda Upsilon. He is a consultant for the Sun Oil Company, Marcel Dekker, Inc., and Barnes and Noble, Inc., and is a member of the Editorial Advisory Boards of *Inorganica Chimica Acta* and *Synthesis in Inorganic and Metallorganic Chemistry*.

He was associate chairman of the Molecular Structure Section of the 1967 Delaware Science Symposium, is chairman of the Inorganic Group of the Delaware Section, ACS, and executive secretary of the Intercollegiate Student Chemists, and is currently serving on the Section's Membership Committee.

He has published approximately thirty research papers and reviews in the areas of the coordination chemistry of ambidentate ligands and the application of reaction mechanisms to the synthesis of coordination compounds.

**AMBIDENTATE  
LIGANDS**

Our efforts to discover what factors determine the bonding mode adopted by ambidentate ligands in a given situation are being carried out with the eventual goal in mind of achieving a clearer understanding of the bonding in coordination compounds. An ambidentate ligand, such as the thiocyanate ion ( $\text{NCS}^-$ ), is, in a very real sense, a chemical probe of the molecular environment, and its response to controlled electronic and steric stimuli can tell us a great deal about their importance and function. Thus far, seven distinct factors governing the bonding modes have been identified: control by the metal atom, cooperative electronic ligand control, cooperative steric ligand control, control by both anionic and cationic non-coordinated groups, solvent control, control by the physical state, and mechanistic control. Examples of each of these will be presented and discussed within the framework of current bonding theories.

# EXECUTIVE COMMITTEE MINUTES

Minutes of the Executive Committee Meeting of the Maryland Section of the American Chemical Society held on January 12, 1971 at Loyola College.

The meeting was called to order at 8:15 P. M. by the Chairman, Richard Kokes. Present were: T. C. Berenthien, J. Cogliano, D. E. Jones, E. Poziomek, J. L. Kolbe, C. E. Minnier, W. G. Galetto, A. Bednarczyk, M. P. Miller, Y. H. Caplan, N. M. Zaczek, T. C. Simmons, J. Goldenson, E. F. Silversmith, J. Kaufman, and H. S. Aaron.

The minutes of the previous meeting as published in the November 1970 issue of *The Chesapeake Chemist* were read and approved as read.

Theodor Berenthien gave the Treasurer's Report for 1970. It is attached as an addendum to these minutes. The report was discussed. It appears that as a result of the fact that the Section has been operating with a deficit budget over the past few years, the Section will face a financial crisis in the next year or two, if this situation continues to exist.

Mr. Berenthien also presented a cost analysis report on the monthly dinner meetings. This report is attached. Approximately 700 members have attended the eight dinner meetings during each of the past three years. The average cost per meeting to the Section was \$250 in 1967-1968, \$340 in 1969-1970, and \$325 for the first three meetings of 1970-1971. These costs were discussed, but no better alternative was suggested.

Dr. Kokes read a letter from Professor Schleyer which was critical of the conditions under which he spoke at the last meeting. Dr. Kokes stated that he had spoken to the Eudowood management about improvements for the meetings, and they have promised to cooperate to prevent any future disturbances to the speaker.

F. T. Parr, Chairman of a Special Committee to Review the Financial Status of *The Chesapeake Chemist*, presented a report, which is attached. Dr. Caplan also gave a business report on *The Chesapeake Chemist*. The cost for

nine monthly issues can be expected to be about \$2000 to \$3000 per year, depending upon advertising income. Various alternatives to the publication and/or its format were discussed. The Chairman then requested that the Executive Committee vote to express its feeling as to whether we should continue with the present format, or should seek some kind of change if the financial situation of the Section does not improve. A majority of those who voted (10 to 5) indicated that they would be in favor of making a change. The Chairman pointed out that the vote was only intended as a guide for further consideration by the Special Committee. It was pointed out that if the Section should decide to stop publication of *The Chesapeake Chemist* in its present format, it could probably not be resumed again at a future date without considerable expense. The Chairman requested that the Special Committee should meet again to evaluate the entire financial situation of the Section, and to make recommendations regarding its projected future program and activities. He also stated that he would not be in favor of increasing the local dues at this time.

Dr. Silversmith gave a Special Scholarship Report. Only one of the two scholarships was accepted. Nominations are now being sought from local high schools for the second scholarship, to be awarded next fall. A new member of the committee has been appointed: Dr. Horace A. Judson, Morgan State College.

Dr. Kaufman gave a Program Report. She announced that the dates for the 1971-1972 monthly meetings would be, generally speaking, on the third Wednesday of each month, with May 24, 1972, as a tentative Remsen Lecture date. She will try to follow the present double lecture format. The cost, on the basis of an 80 dinner minimum, will be \$5.75 per person, plus 10% gratuity, plus 4%  
(Continued on Page 9)

## EXECUTIVE COMMITTEE MINUTES

(Continued from Page 8)

Maryland sales tax. It was pointed out that since we are a non-profit organization, however, we might not be required to pay the sales tax. Dr. Kaufman stated that she will investigate the matter.

Dr. Jones reported that everything is in order for the 6th MARM. Approximately 350 papers are scheduled, and 20 Exhibit Booths have been sold to-date. An estimated attendance of 1200 will be required to break even. The Maryland Section will receive 25% of any profits. The next MARM will be held in Philadelphia in February, 1972.

Chairman Kokes announced that he intended to reappoint all committee chairmen to continue in their present positions, unless anyone gives notice during the next ten days that he does not wish to serve.

Dr. Kaufman suggested that the Section should take a more active roll in the nominations of candidates for national awards.

Dr. Kokes suggested that the Section should consider the purchase of a portable blackboard to replace that which is now being used at the monthly meetings. The loan of an overhead projector was suggested as a possible alternative. After some discussion, the Chairman suggested that any action be deferred until some information as to cost, size, and storage arrangements for a blackboard could be obtained.

The meeting was adjourned at 11:00 P.M.

Respectfully submitted,  
HERBERT S. AARON,  
Secretary

These minutes are uncorrected, and are published for informational purposes only pending their acceptance at the next meeting of the Executive Committee.

### COVER PHOTO

Submitted by Mrs. J. W. Seager,  
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There is no charge made for this service, nor does the Editor assume any obligations for the accuracy of the information supplied by the applicants. Ads will run 2 months unless otherwise notified. Applicants should submit a short paragraph indicating data to be published including type of job wanted, location, asking salary, etc.

037101—Male, *Molecular Luminescence Specialist*, Ph.D., 3 years postdoctoral experience, publications. Background in Physics and Physical Chemistry. Seeks industrial or teaching position.

037102—Male, *Analytical/Mass Spec.*, Ph.D., recent graduate with thesis in chemical ionization mass spec., also experience in pharmaceutical analysis. Meetings & publications.

037103—Male, *Paint Chemist*, M.S., 20 years experience in formulation, R&D, extensive laboratory supervision, technical sales service. Fluent in German & French. Active in local professional organizations. Present position abolished.

037104—Male, *Pigment Chemist*, B.S., 1 year's experience in color development, formulation and plant production. Taught Science one semester in Junior High.

### COPY DEADLINE

Copy for the *Chesapeake Chemist* should be forwarded to the Editor not later than the tenth of the month preceding publication.

# WELCOME...

The following people have recently joined the Maryland Section of the American Chemical Society. The Local Section welcomes each one and invites each member to attend Local Section meetings and to participate in Local Section activities.

- Dr. Peter R. Adams, Seminary Ave.,  
Lutherville.
- Fred Ronald Albright, JHU, Baltimore.
- Dr. C. Stafford Brandt, Holly Dr. E.,  
Annapolis.
- Dr. Frank J. Christoph, Elkton.
- Leslie Eng, E. Reider Ct., Edgewood.
- Janice Ruth Fisher, Woodhill Dr.,  
Glen Burnie.
- Dr. James R. Graham, Wash. Res. Ctr.,  
Clarksville.
- Keith Ki Kim, Duke of York Lane,  
Cockeysville.
- Roger Jean Lussier, Town & Country  
Blvd., Ellicott City.
- Paul A. Martino, River Bay Rd.,  
Annapolis.
- Cornelius Ulic Morgan, Duncan Lane,  
Baltimore.
- James Louis Pilvinis, Edgewood Arsenal.
- Dr. Joseph James Rocchio, Warwick Dr.,  
Aberdeen.
- Miss Florence Rosolowski, N. Chas. St.,  
Baltimore.
- Michael Rubinson, Edgewood Arsenal.
- Dr. Hans H. Schuster, JHU, Baltimore.

- Louis Shnidman, Northbrook Rd.,  
Baltimore.
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- Jeffery Joel Sterling, N. Calvert St.,  
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- Richard D. Towner, Walter Martz Rd.,  
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- Dr. Mary Susannah Vennos, Milldale  
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### ..... Tear-Out Dinner Reservation Form .....

There is enclosed \$..... (\$4.75 per person)\* for cocktails and dinner at Eudowood Caterers, Eudowood Plaza, on Wednesday, March 17, 1971 for the following persons.\*\*

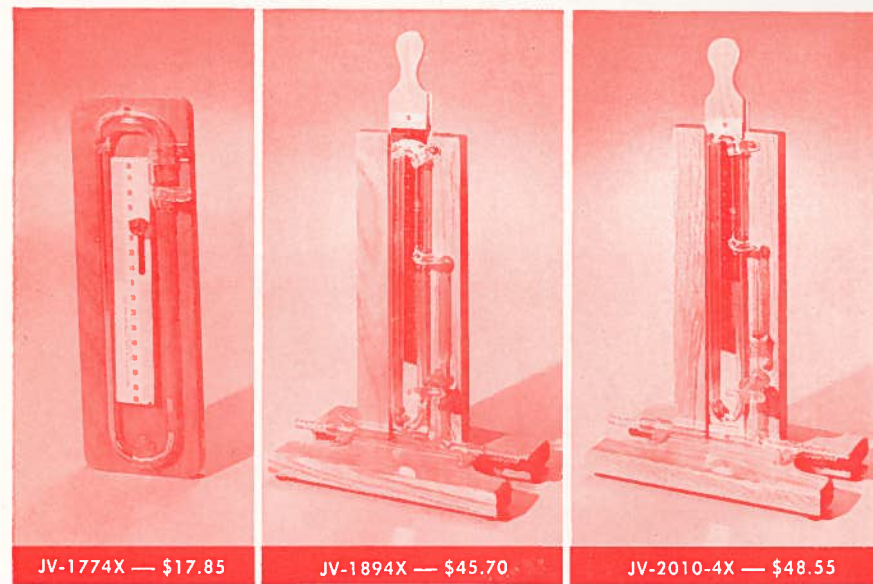
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