The Geochemical News

NUMBER 55 APRIL 1972

April 26, 1972

Dear Member:

Next November the Geochemical Society will make the first presentation of two awards for excellence in research. The senior award, the V. M. Goldschmidt medal, will consist of a gold medal awarded anually for outstanding achievements in geochemistry or cosmochemistry. The junior award, the F. W. Clarke medal, will consist of a silver medal, to be awarded annually for a single, outstanding contribution, normally published within five years of the completion of the recipient's formal studies. We believe that the incentive and recognition to be provided by these medals will have a valuable and significant impact in the fields of geochemistry and cosmochemistry.

The cost of design and preparation of dies for the two medals will be on the order of $5,000 and the annual cost for the individual medals and for any expenses associated with their presentation will be on the order of $400. Some years ago P. H. Abelson gave the Geochemical Society the royalties for Volume I of Researches in Geochemistry. Over the years these royalties and interest on the account in which they were placed have built up a fund which is approximately equal to the cost of the dies. The Council of the Society has voted, with P. H. Abelson's accord, to use these funds to pay for the dies.

The Council has further decided that it would be desirable to seek funds to build an endowment which could be used to meet the annual cost of presentation of these awards. Inasmuch as the awards honor the memory of two leaders in geochemistry as well as the achievements of the recipients we feel it would be most appropriate to build this endowment with a large number of modest donations. In this way all members of The Geochemical Society will have the opportunity of making significant, voluntary contributions in support of the awards and their meaning and significance will thus be enhanced.

I hope you will wish to contribute to our Award Fund, in whatever amount you deem practical. Please make your checks payable to The Geochemical Society, Award Fund, and send them to Dr. Bruce B. Hanshaw, Treasurer, The Geochemical Society, U.S. Geological Survey, Washington, D.C. 20242.

Francis R. Boyd
President

NOMINATIONS

Report of Nominating Committee, April 17, 1972

The Nominating Committee recommend to the Council for its consideration the following slate of candidates for officers, to be submitted to the Membership for election:

For President, November 1972-November 1973, Brian J. Skinner
For Vice-President, November 1972-November 1973, C. Wayne Burnham
For Treasurer, November 1972-November 1975, J. Stephen Huebner
For Councilor, November 1972-November 1975, Robert O. Fournier
Geoffrey Eglinton

J. C. Erdman
W. C. Luth
R. F. Schmalz
L. T. Wilver
F. E. Wickman
P. Toulmin, III, Chairman

GEOCHEMICAL SOCIETY COUNCIL MEETING

November 4, 1972, Shoreham Hotel, Washington, D.C.

Attendance: J. A. S. Adams, E. E. Angino, H. L. Barnes, Francis R. Boyd, Jr., R. Brett, P. L. Cloke, J. G. Erdman, F. J. Flanagan, Bruce B. Hanshaw, H. D. Holland, K. A. Kvenvolden, D. M. Shaw, D. R. Wones

REPORTS OF OFFICERS

Secretary's Report: The minutes of previous meeting as distributed to Council by mail were approved. During the year November 1, 1970 to November 1, 1971 the Society had 93 new members, down slightly from last year. Clearly membership is leveling out. We need a concerted push on the part of the membership to add new members. Most active group is OGD. There were (4) four reinstatements during the year and twenty-one (21) deceased and resignations. Adjusting for members as of June 25, 1971, the Society now has a membership of 2004. Few problems with Pergamon Press or AGI were encountered during the year. There was considerable correspondence with various congressional committees and other national groups. This questioning was primarily regarding subjects such as Society's code of ethics, part we play in Geochemist employment, position on collective bargaining, etc. Processing of new membership applications and membership complaints were routine.

E. E. Angino, Secretary

Treasurer's Report For The Period January 1, 1971 to October 16, 1971: The financial status of the Society continued to improve during the 1971 year, at least to date. Some reservations exist, however; 1971 may end up with essentially no net gain or loss. Nevertheless, as of October 16, 1971 income exceeded expenses by $2,626.09.

If one compares the 1970 with the 1971 statement, note the increase in expenses paid the Executive Editor and the increase in the Treasurer's secretarial charges. The latter stems from the one time cost of setting up the computerized membership file. The file is now fully operational and nearly bug-free. All the computing work and program time has been done free-of-charge so far. OGD should use our in-house service for sticky labels for their newsletter since Society's will be up-to-date. The Council owes John Haas a vote of thanks for all the aid he has given the Treasurer in setting this all up.

Bruce B. Hanshaw, Treasurer

INTERIM REPORT OF THE TREASURER
for the period
January 1, 1971 to October 19, 1971

ASSETS:

Operating Fund		
Cash on hand and in bank	$13,482.67	
Accounts Receivable	0.00	$13,482.67
Publications Fund		
Savings Account		5,348.90
		$18,831.57

LIABILITIES:

Operating Fund		
Members equity		$13,482.67
Publications Fund		
Account Balance		5,348.90
		$18,831.57

	Fund Balance	
January 1, 1971		
Operating Fund		
Checking Account	$ 5,858.92	
Savings Account	5,352.94	
Publications Fund		
Savings Account	4,993.62	$16,205.48
October 27, 1971		
Operating Fund		
Checking Account	$ 7,673.16	
Savings Account	5,809.51	
Publications Fund		
Savings Account	5,348.90	18,831.57
Excess income over expenses for first ten months of 1971		$ 2,626.09

Statement of Income, Expenses and Changes in Fund Balances

Income		
Dues	$ 9,490.06	
Interest on Savings Account	209.95	$ 9,700.01
Expenses:		
Executive Editor	$ 2,500.00	
Printing Charges	539.29	
AGI Assessments	1,974.00	
Secretarial Services--Treasurer	1,569.00	
Secretary	465.25	
Postage and Telephone	249.99	
Transfer to Abelson Fund	70.00	7,367.53
Excess income over expenses:		
Abelson Fund Royalties Income	$ 30.59	
Abelson Fund Interest Income	193.02	223.61
Transfer from operating fund*		70.00
Total increase		293.61
No Expenses		0.00
Excess income over expenses		293.61

*To make up minimum deposists of $100.00 for high interest account.

REPORTS OF COMMITTEES

Auditing: The Auditing Committee has examined the accounts of the Treasurer for the period January 1, 1971 to October 16, 1971, and has verified the accuracy of the statements and amounts shown in his report.

William Back, Chairman
F. J. Pearson, Jr.
B. F. Jones

Standards:

I - Task force on microprobe standards. The task force was started in June 1970 to consider all aspects of standards for microprobe use. Correspondence with representatives of Probe Users Groups (*Anal. Chem.*, v. 42, No. 5, April 1970, p. 258R) resulted in several good ideas. For several months, the task force has been a joint venture of the Standards Committee of the Geochemical Society and the Electron Probe Analysis Society of America and the latter has recently established a standards group chaired by one of us (AAC). Announcements of the formation and purpose of the task force have been made at meetings of the EPASA. Correspondence with a representative (A. Schneider, Goettingen) of the Arbeitskreis Mikrosonde of Germany has been started to find out what they are doing so that duplication of effort may be avoided. The Arbeitskreis Mikrosonde, a branch of the Deutsche Gesellschaft fuer Electronenmikroskopie, has about 100 members whose interests are geochemistry, biology, or similar non-metallic fields. There is another Arbeitskreis of the DGE concerned with Scanning Electron Microscopy and similar techniques.

Three glass standards, about two pounds each, are being prepared by Corning Glass and were originally funded by the California Institute of Technology. These samples, which contain 8, 8 and 6 elements at about 1% will be tested to determine if they are suitably homogeneous for probe use. They will then be made available to qualified probe users, probably at some minor cost to recover costs and to be a revolving fund to provide other samples as needed. Small amounts of a few natural or synthetic minerals have been accumulated.

A. A. Chodos
K. Keil
C. Klein, Jr.

II - Standards for heat capacity and heat of solution calorimeters. The new standard materials for the comparison and calibration of heat capacity and heat of solution calorimeters have recently been made available through the U.S. National Bureau of Standards. The materials are Standard Reference Material No. 720, synthetic sapphire (Al_2O_3), used for the calibration of high temperature "drop" calorimeters. Samples are supplied with a certified value for the heat content, $(H_T - H_{298.15})$ in the range 298° - 900°C. Standard Reference Material No. 1654, α-quartz, is for the calibration of HF solution calorimeters. The heat of solution of this sample is certified to $\pm$ 0.05 percent for the conditions T=353.15 K (dd.OC) and 24.4 Wt. percent

HF. "Equations are given for temperature corrections of the enthalpy values between 298 and 358 K and for HF concentrations between 18 and 30 Wt. percent". The quartz sample might also serve as a comparison standard for those engaged in accurate x-ray powder measurements. Both samples are obtainable through the office of Standard Reference Materials, National Bureau of Standards, Washington, D.C. 20234.

R. A. Robie

III - Future soil standards. The Southeastern Regional Soil Mineralogy Work Group announces that twelve soils from the southeastern U.S. have been selected as soil reference samples for their clay mineralogy composition and chemical properties. The bulk samples have been stored at the Department of Agronomy, University of Kentucky. Soil fractions have been separated and distributed for analysis in regional soil laboratories. These samples and a research report are to be made available on a cost basis, probably in about two years. R. I. Barnhisel, Department of Agronomy, University of Kentucky, Lexington, Ky., 40506 (606-257-1513) is in charge of the depository.

IV - Medieval ceramics or pottery. Mlle. G. Pigeat, Centre de Recherches Archeologiques Medievales, Universite de Caen, France has organized an inter-laboratory study of ten samples of medieval ceramics excavated from sites in northwestern Europe. A paper, The Analysis of English and American Colonial Period by J. S. Olin and E. V. Sayre, was published in Chapter 3 (Forensic and Archaeological Applications) of *NBS Special Publ.* 312 Vol. 1, 691 p., (1969), "Modern Trends in Activation Analysis." Correspondence indicates that at least two U.S. institutions have "standard pottery samples". Another university has received potsherds from Mexico for trace element analyses by neutron activation. Information on or suggestions about existing or proposed standards for ceramics or pottery would be appreciated.

V - Miscellany. 1972 I. G. C. A. H. Gillieson, Chairman of the Standards Committee of the SSC (Spectroscopy Society of Canada), is planning a session on international standards at the 1972 I.G.C. The session will be limited to several invited papers with emphasis on current status and with ample opportunity for discussion and exchange of ideas. A *NEWSLETTER* on rock lead reference samples is distributed every now and then by Bruce Doe to about two dozen people in the field. We will investigate the possibility of expanding coverage to include Rb/Sr and K/Ar, with the further possibility of having it published in *The Geochemical News.*

The National Institute for Metallurgy (Johannesburg) plans to expand their standards program by adding further rocks and minerals. A compilation of data on their first six rocks should be published either as a research report of NIM or in the *Transactions* of the Geological Society (S.A.).

A. Ando, Geological Survey of Japan, hopes to publish a compilation of data on GSJ-JG-1 and GSJ-JB-1 in the *Geochemical Journal* (the journal of the Geochemical Society of Japan).

F. J. Flanagan, Chairman

Program: The Program Committee of the Geochemical Society (D. Lindsley, S. Hart) and the Mineralogical Society of America (W. Luth, G. Gibbs) worked closely together, jointly evaluating abstracts in geochemistry, mineralogy, and petrology, and organizing coherent sessions so far as possible. The large number of abstracts submitted in these fields (180, or 35% of all abstracts volunteered for oral presentation) dictated that we arrive in Boulder one day early in order to process them.

Out of 541 abstracts submitted, 180 were assigned to MSA and GS by the JTPC. These figures do not include invited abstracts for formal symposia - such as that in Organic Geochemistry - officially sponsored by the JTPC. Although the number of abstracts scheduled for presentation slightly exceeds that recommended by the JTPC, the number of sessions is less. We did not schedule the full number of sessions for two reasons: First, strictures of the over all program format would have required an unacceptable number of simultaneous sessions; and, second, we concluded that the room size allotted to two sessions was at best marginal. We were able to schedule a larger room for those sessions by eliminating two other sessions. To accommodate the accepted papers in the reduced number of sessions, it was necessary to allot only 15 minutes (10 for presentation, 5 for discussion) to each paper. We regret this, but feel that it represents the lesser of evils.

All conflicting sessions in mineralogy, petrology, and inorganic geochemistry are scheduled for nearby rooms to facilitate session-hopping. We were able to do this in part because of the fine cooperation of Jack Reed and Bruce Hanshaw of the JTPC and in part because the large number of rooms available in the Shoreham-Sheraton complex minimized competition for prime space.

Only four extended abstracts for "discussion papers" were received in geochemistry-mineralogy-petrology; these were slated for an evening session. In addition, we arranged for an experimental discussion session in which post-deadline date on lunar studies can be presented informally.

It appears that some members of next year's Joint Technical Program Committee feel that GS and MSA should each have only one representative to the JTPC in the future. In part, this feeling may reflect a belief that since our representatives work jointly we should be treated as a single affiliated Society. This viewpoint is grossly unfair to our Societies, and more importantly, to the disciplines they represent. Both the large volume of abstracts and the diversity of subject matter mandate

that more than two representatives are needed. (Even this year, our joint representatives constituted about one-fifth of the JTPC but handled more than one-third of the volunteered abstracts.) I recommend that the Geochemical Society insist on continuing to have two representatives to the JTPC.

(Secretary's note) GSA has agreed to leave matters as they stand.

Donald H. Lindsley, Chairman

Tellers: No report required for 1971.

Environmental Geochemistry:

(1) The committee arranged a session of papers on Environmental Geochemistry at the Washington meeting from a combination of solicited and unsolicited papers, working in cooperation with Dr. Lindsley, the GS representative on the GSA Program Committee.

(2) Discussions were initiated with the Organic Geochemistry Division and the general conclusion seems evident the Society and the OGD should participate in one common committee of the Society with adequate representation of the OGD on it.

(3) The future role of the Committee is unfixed and is open to discussion and experimentation as we see how the subject moves in the next few years. It may continue to concentrate on offering a forum for papers or it might try other things instead of or in addition to sessions of papers. Perhaps the most important item on the agenda is whether the committee should not only concern itself with environmental problems of genuine intrinsic research interest in geochemistry but with questions of environmental policy as well.

(4) In getting the Committee started I want to thank all of the GS officers and council and the members of the Committee for their help and ask your indulgence for sins of omission and commission that I am responsible for.

Raymond Siever

Membership: As indicated by the Secretary's report, Membership in the Society has leveled out and will probably drop when new dues structure becomes effective on January 1, 1972. Council approved setting up a new 3-man Membership Committee (to be appointed by President Boyd) with Keith Kvenvolden to be OGD Chairman representative. Charge to this committee is to report to the New President on endowments, membership drive and means of retaining present members when the new arrangement with Pergamon goes into effect. A report is due council next year.

REPORTS OF THE EDITORS

Geochmmica et Cosmochimica Acts:

1. The journal continues in a healthy state. The effect of the dues change has not yet become apparent, but the total number of subscriptions has dropped by about 100 from 2340 in March 1971.

2. Rejection rate has decreased from 40% last year to about 25%. Our standards have not changed, so far as I am aware.

3. Professor John M. Hayes, Department of Chemistry, Indiana University, Bloomington, has assumed Associate Editor responsibility for Organic Geochemistry, following the resignation (overwork) of Dr. I. Breger. Dr. Breger's valuable service has been sincerely appreciated.

4. Publication times:

Articles, notes - 4½ to 5 months (this figure is largely dependent upon how fast an author returns his proofs to the publisher).

Letters - 2 months (a recent example is Taylor et al., Apollo 14 paper, mailed to the publisher July 5 and published in the No. 9, September issue.

5. The move of the Editorial Office was completed smoothly owing to excellent cooperation, help and advice from the retiring Executive Editor, A. A. Levinson. He still has a backlog of several papers to be processed through his office, but these should shortly be tidied up.

6. Delivery time of issues has improved markedly. Loss of Mrs. B. Allen, Production Controller, Pergamon Press through pregnancy is much regretted. Her successor will be appointed shortly.

7. In the period October 1, 1970 to September 30, 1971, 215 manuscripts were received by the editor, Within this period, 116 papers, totaling 1329 pages were published. Additional details on Executive Editor's activities are available upon request to him.

8. A less detailed report was made to the Meteoritical Society at its Tuebingen meeting.

Denis M. Shaw

Journal Translations: I again must report that the funding picture for the AGI translations program (which includes *Geochemistry International*) continues to be bleak. The recent AGI "Translagram" is self-explanatory and describes the precarious state of all translations programs receiving NSF support. At this writing, December 31, 1972, remains as the deadline set by the NSF for translations programs to become self-supporting. Even with the proposed increase in subscription rate to $100.00 (presently "frozen" in accordance with federal economic rulings), the goal of self-sufficiency cannot be achieved without an increase in the number of subscriptions as well. The seriousness of the current situation is compounded by the fact that NSF itself is caught up in problems of budgetary priorities. Thus, at the moment, the 1972 calendar (and volume) year for *Geochemistry International* does not bode well.

Against this background of fiscal uncertainty, the production of *Geochemistry International* nonetheless maintained a pace about that reported at the 1970 Council Meeting. However, due to publication difficulties, the final number of Volume 7 (1970) has been delayed slightly but should appear about the second week in November. Translations of *Geokhimiya* through the July issue (1971) have been received, and more than half of the material has already been edited.

As the renewal notices have not yet been sent, pending final actions with regard to the proposed increase in subscription rate, the total subscription to the 1971 volume of *Geochemistry International* is not yet known. However, the current subscribers are distributed as follows:

Subscribers to *Geochemistry International* (As of October, 1971)

U. S.			270
Canada	55		
P.U.A.S.*	19	Total	
Europe	128	foreign	335
Other	137	TOTAL	605

*Postal Union of the Americas and Spain.

A study of the subscription figures for the past several years indicated that the number of subscribers has stabilized around the 600 level.

Obviously, a significant increase from this 600 "plateau" will be needed, if *Geochemistry International* is to become self-supporting.

This is my final report to the Council. Due to upcoming commitments requiring a move from Washington, I cannot continue as Journal Translations Editor. Fortunately, two of my U.S. Geological Survey Colleagues here in Washington, L. Paul Greeland and Frederick Simon, have kindly agreed to assume co-editorship, of course, with the approval of the Council. As most of you know, Paul has filled in for me previously on many occasions and, accordingly, is well aware of the procedures and responsibilities involved, not to mention the frustrations. Because neither Paul nor Fred has sufficient time to assume the entire editorship singly, they have agreed to do it jointly with Paul primarily responsible for technical matters, and Fred for managerial matters. As both men are located in the same laboratory, this arrangement should pose no logistical problems. I highly recommend them both to the Council.

In closing, I would like to express my thanks to all Society members who have been helpful in so many ways during my tenure as Journal Translations Editor.

Robert I. Tilling

The Geochemical News: During the past year, effort was devoted primarily to attempts to correct the numerous errors in the copy of the membership lists, reproduced from the AGI files and to devising a more satisfactory procedure for production of the *News*. The latter became urgent as a consequence of the excessive time of three months which transpired between the submission of rough draft to the typist and the completion of final copy for issue no. 52. This was due to an increasing lack of available secretarial time because of more urgent business, as well as to an apparent over-perfectionist attitude on the part of the secretary. (At any given time during this three months it appeared that copy would soon be finished and, hence, it seemed better to wait than to start over with a different secretary.)

During the time I obtained bids from three local printers for preparation, printing, and mailing of the *News* from rough draft. All these were comparable, and I decided there was little reason to change from the firm used in the past. This does, of course, involve higher charges from the printer. On the other hand, the cost of shipping the entire issue to AGI, paying AGI's mailing charge, and the considerable delay we have experienced before AGI actually did the mailing are eliminated. To save additional costs the type size has been reduced and a mailer including a bulk mailing permit printed on the last page of the issue. Although the net results of these changes are not yet evaluated, the treasurer and I think the total costs will be less. Moreover, the time from rough copy to mailing should now average two to three weeks.

Paul L. Cloke

Book Translations: The status of book translations is good and bad. J. Clarke has developed a breakthrough in expediting typesetting-publishing, and is producing several volumes of existing translations, including some earlier translations by Michael Fleischer. The NSF looked with favor on the part of our proposal to finish the Water monograph, but wanted a formula to permit phase-out of its assistance before considering the additional preparation costs. I have been temporarily snowed under by Deep Sea Drilling and Black Sea monograph deadlines, and was unable to pick up the ball for the past several months. I deserve firing, and will not contest replacement if you so desire. Or maybe putting a good organizer with me would have been a wiser idea to assure effective leadership.

In any event, the NSF position is now decidedly anti-support for translations. On the other hand, it supports efforts at reduction (i.e. intensive editing, extraction and summarizing of foreign literature) and regarded our proposal in this light. We can therefore obtain support for translation, provided that the dirty word, "translation", is down pedaled.

Thus, we have a viable plan for future operation of the book translations committee. The mail lack to date has been in sufficient time and effort on the part of the editor.

Frank T. Manheim

MISCELLANEOUS REPORT

Organic Geochemistry Division:

New officers for Division are: Richard D. McIver, Chairman
V. Swanson, Secretary

The OGD Division has just completed a successful new membership drive. Simultaneously, a complete updating of its list has been completed with Treasurer's help and efforts of Ellis Bray.

BY-LAW CHANGES

III. Nominations for office shall be made by the Council, one nomination for each office, with due consideration of the recommendations of the Nominating Committee. The nominations shall be made known to the members at least six months prior to the next annual meeting, at which time the new officers are to take office. Other nominations may be made in writing by any ten members; these nominations, and the nominees' acceptances, must be in the hands of the Secretary at least four months before the annual meeting. (The rest of By-Law III remains as is. The changes are for eight to six and five to four months as underlined above.)

VIII. 1.b) F. W. Clarke Medal. This award, consisting of a certificate and prize of $500. shall be awarded to a young scientist for a single outstanding contribution (ordinarily a single paper) to geochemistry or cosmochemistry, normally published within 5 years of completion of his formal studies. (The change is the dropping of the underlined portion and substituting in its place the words "a silver medal, a certificate, and a one (1) year subscription to *Geochimica et Cosmochimica Acta*.) The remainder of the By-Law VIII. 1.b) remains as is.

COUNCIL ACTIONS

Treasurer's Report: Council voted that the Society pay $2.00 per stipulated member to AGI effective with March 1972 Membership compilation. Council accepted treasurer's report and voted that John Haas be sent a letter of thanks for his work on mailing list. He was also voted a 2-year paid up membership in Society for his efforts on Society's behalf. A new membership list should be available by April 1, 1972. Council voted to ask treasurer to serve on emergency basis for one more year.

V. M. Goldschmidt & F. W. Clarke Awards: Council voted to award two medals (hopefully in 1972) at its annual meeting. These awards will consist of a gold medal, carrying a bust of V. M. Goldschmidt, to be awarded for distinguished research in geochemistry, and a silver medal, carrying a bust of F. W. Clarke, to be awarded to a younger scientist for a distinguished contribution in geochemistry. Specifications require changes in By-law VIII of Society and are published in this issue under that heading.

Certification: A report by Brett and Adams on results of a meeting on accreditation of earth scientists was discussed with considerable concern. Council voted to have President write a letter to AGI requesting them to examine this problem and draft a model registration law, covering accreditation and ethics. This draft should accommodate the interests of geoscientists in all research fields. Council voted that a member be appointed to attend AIPG meetings.

(Secretary's note: AGI has a draft registration law).

Geochimica et Cosmochimica Acta: Council approved John Hayes as new Associate Editor. He was appointed as OGD editor. The Society officially expressed its thanks to Irving Breger for his past work in this capacity and requested the new president send a letter of appreciation to Breger.

Lunar Conference papers (Jan. 1972) will be published. Efforts are being directed toward seeing this appears as GCA Suppl. 3.

National Funding for Geochemistry: Long discussion on lack of funding for Geochemical Research from NSF, AEC, and NASA. All are cutting back. The funding situation is poor and will continue to be so for some time.

International Geochemical Program: Council voted to set up a committee to investigate possibilities of subject matter. New President will discuss with H. L. Barnes who made the suggestion.

Membership Notification: Council approved a change in By-law III of Society. Changes are indicated in this issue under By-law headings.

Vice Presidental Duties: By vote of Council, Vice President is appointed as a one man committee to come to Council each year with committee chairman nominations, beginning with November 1972. Continuity of committees will be assured in this manner, furthermore; the incoming president will not be in question concerning committee responsibilities and chairman.

GSA Minority Report: The Council voted its approval on purposes of GSA report on training and employment of minority groups (Johns report) in geosciences.

National Medal of Science: By vote of Council, the Goldschmidt Medal committee is to submit names to AGI governing body for nominations for National Medal of Science through the Geochemical Society representative to AGI. The representative nominee of the profession.

NRC-NAS Matters: Council appointed H. D. Holland, for a three year term, as its representative to speak for the Society at NRC-NAS matters.

Journal Translations: Council regretfully accepted resignation of Robert Tilling as editor of Journal Translations. Tilling's recommendation for co-editors was approved.

Standards: A suggestion by Hugh Greenwood that the Society be prive mover for continual updating of thermodynamic data on minerals was discussed and deferred owing to lack of time and the impression that this was properly a function of NBS.

ERRATUM

Due to an oversight on the Editor's part an outdated Membership Application was included in the last issue of *The Geochemical News.* Please destroy this form. A new form is included with this issue. Apologies to all for the consternation and inconvenience caused by this error.

P. L. Cloke

BOOK REVIEWS

MINERAL OPTICS - Principles and Techniques, by Wm. Revell Phillips, ix + 249 pages, 128 illustrations (including 1 fold-out-chart and 14 plates in full color. W. H. Freeman and Co., San Francisco, 1971. $12.50

As the author states in his preface, this work is designed to prepare students for the study of rocks in thin section. When considered in this light, this book gives an excellent elementary presentation of mineral optics. Phillips devoted 170 pages to flat stage measurements and curiously weds this to 60 pages on universal stage measurements. This is surprising because U-stage techniques are rarely taught in an introductory course in optics. In the first 170 pages Phillips covers the topics of isotropic, uniaxial and biaxial minerals using only ray velocity and indicatrix surfaces. The photographs illustrating the Becke line, oblique illumination, relief and interference colors, among others, are far superior to the usual idealized sketches. No tables compiling optical properties of common minerals are included. One error worth noting is Phillip's claim (p. 161) that ($h_1k_1l_1$) cleavages show parallel or symmetrical extinction in orthorhombic minerals for some other ($h_2k_2l_2$) viewing direction. This is also a common misconception among petrologists. In fact inclined extinction will generally be observed in this case. Fortunately (hkl) cleavages are rare indeed in orthorhombic silicates.

The final 60 pages of this book are clearly written and give the petrologist a long-needed manual on the U-stage. Plotting techniques, so difficult for the beginner to visualize, are admirably clarified in the authr's drawings. For designation of rotation axes, Phillips unfortunately uses Berek's A_1, A_2, A_3, etc., rather than the more explicit and easily remembered system of Emmons: IV, OV, NS, etc. No application of U-stage measurements to petrofabric studies is given in this book. Phillips continues to make tilt corrections even though Kamb (*Amer. Min.*, 1962) shows that these corrections are seriously in error and should be ignored. Finally, the bibliography is unusually complete and up-to-date.

The first 170 pages of this book are particularly suited for a two-hour or half-semester course in optical mineralogy. The last 60 pages provide an excellent introduction to the U-stage unavailable elsewhere in succinct form.

Eric Essene
The University of Michigan

SHORT CLASSIFICATION AND DESCRIPTION OF THE VARIOUS ROCKS, by Abraham Gottlob Werner. English translation by Alexander M. Ospovat, 194 pages. Hafner Publishing Co., New York, 1971. $13.95.

This is a handsome little book, of scholarly quality, well worth the attention of anyone seriously interested in the history of mineralogy. It consists chiefly of the facsimile of the original text (1786, in German) in juxtaposition with the translation, a happy arrangement. The translation is buttressed by 47 pages of erudite "Notes on the Text" which discuss the meanings and extrapolations of specific terms and phrases in modern geological-mineralogical context. Next follow three appendixes: I. Glossary of the Minerals and Rocks Mentioned in the *Kurze Klassifikation*, with their Modern Equivalents, Werner's Terms, and Brief Remarks; II. Glossary of Geographical Names Mentioned in the *Kurze Klassification* with Brief Remarks; III. Werner's Writings. The book concludes with a bibliography and index.

The book serves as the "companion volume" to the translation by A. V. Carozzi of Werner's *On the External Characters of Minerals* (University of Illinois Press, Urbana, 1962).

E. Wm. Heinrich
The University of Michigan

DOSAGE DES ELÉMENTS A L'ETAT DE TRACES DANS LES ROCHES ET LES AUTRES SUBSTANCES MINÉRALES NATURELLES: Colloques Nationaux, No. 923, 468 pages, 18 figures. Editions du Centre National de la Recherche Scientifique, Paris, France, 1970. FF95 + taxes.

This book is a collection of papers given at a Symposium on trace elements held at Nancy, France in 1968. Contributions were received from a cross section of analysts in French universities, National Research Institutes and industry. There are 35 papers describing most of the common methods of analysis for trace elements. The only major instrument of analysis not included is the electron microprobe, a notable omission. The presentations are grouped in sections as follows: general problems (2 papers), X-ray fluorescence (3), optical emission direct reader methods (4), optical emission spectrography (5), spark source mass spectrometry (2), atomic absorption (5), polarography, chromatography, titrimetry (3), nuclear methods (7), and analysis of microscopic objects (4). An abstract in English precedes each paper, and the discussions at the Symposium are included at the end of each section.

The topics discussed under each method cover both general problems and procedures of analysis as well as analytical procedures for specific elements in minerals, rocks or soils. However, the papers presented in the X-ray fluorescence and emission spectrograph sections are solely concerned with matrix effect corrections. The trace element determinations presented as results are commonly compared to U.S.G.S. standards, but there is a noticeable lack of consistent evaluation of both accuracy and precision of various methods and procedures. Discussions following the papers are often enlightening and add to the value of the papers presented.

This volume, available three years after the Symposium, is still timely for those persons already involved in trace element analysis using the methods discussed. The price (~U.S.$20.00) is within the range of the personal library of the analyst and the book should be included as an addition to most geochemical libraries.

Judith B. Brown
McGill University

ORE DEPOSITS (2nd Edition), by Charles F. Park, Jr. and the late Roy A. McDiarmid, xiii + 522 pages, 159 illustrations. W. H. Freeman and Co., San Francisco, 1970. $11.00.

This book represents the second edition of "Ore Deposits" which was first published in 1964. This edition has been expanded considerably and a short chapter on metallogenic provinces and epochs added. Chapter One presents an interesting if somewhat incomplete survey on the development of modern theories of ore deposition.

The remainder of the book can be divided conveniently into two sections, the former dealing with general principles of ore fluids, ore deposition, alteration, zoning and related subjects.

The discussion of ore bearing fluids (Chapter 2) is generalized and somewhat lacking in clear focus, and there are very few references to studies published after 1965. As a result the reader is left with a confused impression of modern knowledge on ore bearing fluids.

The migration of ore-bearing fluids (Chapter 3) is dealt with in terms of diffusion at great depths and physical flow at shallow depths. This is an important subject, the quantitative aspects of which have been sorely neglected by ore deposits workers, and the chapter reflects many of the uncertainties that still surround this subject.

In Chapter Four the authors deal at some length with the deposition of ores, mainly in terms of physical and chemical controls, and depositional textures, and some excellent examples are provided to illustrate the importance of physical and

chemical controls of ore deposition. The discussion of criteria for recognizing replacement, however, places undue faith in the interpretation of microscopic ore textures. Strong emphasis is also placed on colloidal deposition of ores. a process that is probably of very minor significance.

The importance of understanding alteration and gangue mineral patterns are emphasized in the following chapter, and several examples are given. This section would be considerably strengthened if the authors had included a more detailed discussion of alteration patterns associated with porphyry copper deposits, and quantitative data on the solubility of common gangue minerals.

In Chapter Six the authors discuss paragenesis and zoning. The former is dealt with very briefly, but the phenomenon of zoning is documented with excellent descriptions of the Cornwall-Devon, England; Tonopah, Nevada; and Red Mountain, Colorado ore districts. The authors' choice of the Southeastern Piedmont Province as an example of regional zoning, and the Ammeberg district of Sweden as an example of metamorphic zoning, must be regarded as debatable. The causes of sequential deposition are also discussed and our poor understanding of this phenomenon emphasized.

The chapter on geothermometry is of major importance to the book in view of the authors' use of this parameter to classify hydrothermal ore deposits. Unfortunately, a reading of this section illustrates the uncertainty related to most techniques for assessing temperatures of ore deposition. The most reliable technique for obtaining temperatures of ore deposition (i.e. fluid inclusion studies) is given inadequate treatment, and virtually no mention is made of the several important fluid inclusion studies made in the mid and late sixties.

The short chapter on the classification of ore deposits marks the division point between the preceding chapters dealing with general principles and the following chapters which are of a more descriptive nature. The classification schemes discussed are mainly those of Niggli, Schneiderhoehn and Lindgren. No mention is made of the important contributions of Bilbin and McCartney who both emphasize the relation of ore deposits to regional structural environments.

Prof. Park's approach of using descriptions of specific mineral deposits is certainly commendable, but under such a system the choice of illustrative examples is clearly of critical importance. Chapter Nine deals with magmatic segregation deposits and includes the chromite deposits of the Moa district, Cuba, the titanium deposits of Allard Lake, Quebec and the iron deposits in this category. The author's choice of the Palabora copper-carbonate complex as a good example of a magmatic segregation deposit is questionable. The following chapter on pegmatites deals with simple and complex pegmatites and provides a good description of the Petaca district, New Mexico.

Chapters 11 through 16 successively deal with igneous-metamorphic, hypothermal, mesothermal, epithermal, telethermal and xenothermal deposits and after each chapter bibliographic data are supplied for one or more deposits thought to fit that category. The weakness of the classification scheme chosen by the authors becomes readily apparent in this part of the book for the basic parameter used for subdivision is temperature, and yet virtually no specific data on depositional temperatures are provided. For example porphyry copper deposits are considered to be of mesothermal type (200 - 300° C), but are now known to form at considerably higher temperatures (400 - 600° C).

The authors' failure to recognize metamorphosed sulfide deposits leads him to present the gold deposists of Morro Velho, Brazil and the Broken Hill, N.S.W., lead zinc deposits as type examples of hypothermal deposits. Furthermore, the inclusion of the Sudbury copper-nickel ores in this same category as opposed to the magmatic segregation category is puzzling indeed. Although this group of chapters contains many good, well illustrated geologic data, many of the genetic interpretations are extremely dated and references to work published after 1965 all too rare.

Chapter Seventeen deals with sedimentary deposits, both chemical and mechanical. Iron and manganese deposists receive adequate attention, but sedimentary deposits of base metals are afforded less than four pages and the volcanic-exhalative theory of ore genesis only mentioned in passing. An excellent short description of the Witwatersrand gold deposits concludes the section on mechanical accumulations.

Weathering and supergene sulfide enrichment are covered in the following two chapters both of which are illustrated by good descriptions of well chosen examples of these processes. Metamorphism of ores is discussed briefly in Chapter 20, and the book concludes with a three page review of ideas relating to metallogenic provinces and epochs.

Conspicuous in their absence from the book are discussions of ore deposits with respect to geologic time and regional geologic setting, and the significance of stable isotope studies in the understanding of ore deposits. The extremely important massive sulfide deposits found in volcanic and metavolcanic environments are virtually ignored, and as a result the reader emerges with little feeling for the broad systematics of many basic ore deposit types. The important advances made in our understanding of ore deposits in the late sixties are not given adequate treatment.

In spite of these shortcomings the book is well written, well illustrated, reasonably priced and does contain a great deal of information of interest to those working in ore deposits.

F. J. Sawkins
The University of Minnesota

ANNOUNCEMENTS

Symposium on fluid inclusions at 24th International Geological Congress in Montreal, 1972

The third international symposium on fluid inclusions, sponsored by the Commission on Ore-Forming Fluids in Inclusions ("COFFI"), will be held on Aug. 22 and 23, 1972, in Montreal, in connection with the IGC. These two sessions will be held at 1400 hours, so they will not conflict with any regular IGC sessions. Although sponsored by COFFI, these will not be limited to studies of inclusions of ore-forming fluids, but will also include papers on instrumentation, and on the interpretation of data for magmatic (silicate melt), metamorphic, and sedimentary inclusions as well. Abstracts will be published in a forthcoming issue of *Fluid Inclusion Research - Proceedings of COFFI*. All correspondence and abstracts should be sent to Dr. Edwin Roedder, U. S. Geological Survey, Washington, D.C. 20242 U.S.A.

Gordon Research Conference in Organic Geochemistry
Holderness School, Plymouth, N.H., August 14 - 18, 1972

Registration and Reservations. Individuals interested in attending the Conferences are requested to send their applications to the office of the Director. These applications should be received no later than two months prior to the Conference.

Special Fund. A special fund is provided from the registration fee and is made available to the Chairman of the Conference for the purpose of increasing the participation of research scientists who could not otherwise attend and participate because of financial limitations. Its use is not limited to scientists who have been invited by the Chairman as a speaker or discussion leader. The money is to be used as an assistance fund only and may be used to contribute toward Conferees' travel expenses, registration fee and/or subsistence expenses at the Conference, or both. Total travel and subsistence expenses usually will not be provided.

Fees:

Conferees:		
Fixed Fee		$130.00
(Registration, resident conferee)	$50.00	
(Subsistence, including services)	80.00	
Registration (non-resident)		65.00
Deposit--conferee		30.00
Resident Guest Charges		80.00
(Subsistence, including services for 5 Conference days)		
Deposit--guest		30.00

Membership. Requests for membership in the Conferences, or for additional information, should be addressed to:

Dr. Alexander M. Cruickshank, Director
Gordon Research Conferences
Pastore Chemical Laboratory
University of Rhode Island
Kingston, Rhode Island 02881
Tel. 401-783-4011

Although attendance is limited to 100, geochemistry conferences tend to be undersubscribed. Please do not hesitate to apply. See the enclosed *OGD Newsletter* for titles of papers.

Environmental Consultants

An annual Directory of Environmental Consultants, will be published beginning in 1972. Environmentally concerned professionals interested in having their name and short resume appear in the Directory should send a No. 10 self-addressed, stamped envelope to: Directory of Environmental Consultants, P.O. Box 8002, University Station, St. Louis, Missouri 73108.

CALENDAR

May	
16 - 19	Mineral & thermal waters, intl symposium, Karlovy Vary, Czechoslovakia. (Alexander Zaporozec, Dept. of Geology, University of Wisconsin, Madison, 53706)
June	
13 - 15	Trace substances in environmental health, mtg at University of Missouri, Columbia. (D.D. Hemphill, 426 Clark Hall, University of Missouri, Columbia, 65201)
13 - 21	International Field Year for the Great Lakes, seminar, Burlington, Ont. (C.J. Callahan, NOAA, Rockville, Md. 20852)
25 - 30	Intl Clay, Conference, Madrid. Also: Intl. Geological Correlation Program, working group on correlation of kaolin genesis & age. (Juan I. Martin Vivaldi, Departamento de Cristalografia i Mineralogia, Faculdad de Ciencias, Ciudad Universitaria, Madrid 3)
July	
11 - 20	Feldspars, NATO advanced study institute, Manchester, England, (W.S. MacKenzie, Dept. of Geology, University, Manchester M13 9PL, England)
August	
7 - 11	Natural Radiation Environment II, Symposium, Houston, Texas. (Prof. J.A.S. Adams, Rice Univ., Dept. of Geol., P.O. Box 1892, Houston, Tx. 77001)
14 - 18	IAGC, Symposium on cosmochemistry, Cambridge, Mass. (Prof. A. G. W. Cameron, Belfer Graduate School of Science, Yeshiva Univ. Amsterdam Av. and 186 St., N.Y., N.Y. 10033)
15 - 20	Scientific Committee on Antarctic Research, mtg. in Canberra, Australia. (Committee on Polar Research, National Academy of Sciences, 2101 Constitution Ave. NW, Washington, D.C., 20418)
21 - 30	Intl Geological Congress, Montreal. (J. E. Armstrong, Secretary General, 24th International Geological Congress, 601 Booth St., Ottawa 4)
23	Geological Assn. of Canada, ann. mtg, Montreal. (C.R. Barnes, Dept. of Earth Sciences, University of Waterloo, Waterloo, Ont.)
August 27/ Sept. 7	Intl Union of Crystallography, congress, Kyoto, Japan. (Yoshihiko Saito, Science Council of Japan, 22-34, Roppongi 7 chome, Minato-ku, Tokyo 106) Abstracts deadline: March 15.
September	
11 - 14	Clay Minerals Society, ann. mtg., Woods Hole, Mass., with symposium on clays in marine environment & field trip to Martha's Vineyard. (R.T. Martin, Room 1-343A, Dept. of Civil Engineering, Massachusetts Institute of Technology, Cambridge, Mass., 02139)
October	
11 - 13	Meteoritical Society, ann. mtg., Univ. of Chicago. (T. Bunch, Ames Research Center, Moffett Field, Calif., 94035)
November	
10 - 12	Precambrian iron formations of the world, field trip & symposium by the Society of Economic Geologists; Duluth. (Paul Sims, Minnesota Geological Survey, University of Minnesota, 1633 Eustis St., St. Paul, 55108) Invited: regional papers on North & South America, Africa, Australia; topical papers on origin, age & metamorphism.
13 - 15	Geological Soc. America, ann. mtg., Minneapolis. (GSA headquarters, Box 1719, Boulder Colo., 80302)
13 - 15	Geochemical Society, ann. mtg., Minneapolis, Minn. (Dr. Ernest Angino, State Geological Survey, Univ. of Kansas, Lawrence, Kansas 66044)

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THE GEOCHEMICAL SOCIETY

ORGANIC GEOCHEMISTRY DIVISION NEWSLETTER

April, 1972

COMMENTS FROM RICHARD D. McIVER, CHAIRMAN OGD

Because of a change in procedures, our last Newsletter was delayed. Again, your attention is called to some of the important matters, particularly a proposed amendment to the OGD By-Laws. As far as new business is concerned, I am pleased to announce that J. B. Smith has consented to serve as Chairman of the Nominating Committee for this year. Serving with him will be Tom Hoering and G. W. Hobson. Their slate of candidates will appear in the July newsletter.

My request for recollections on the early years of the OGD (originally the OGG) has not been very successful; only one respondent so far – but I do hope that we can compile an official record of that history before the November meeting.

A perusal of the list of the many meetings either entirely devoted or partly devoted to organic geochemistry during the next 12 to 15 months disturbs me. Undoubtedly such an abundance of conferences and symposia will result in repetitious exposure of essentially the same concept or material – and will make it more difficult to put together sessions of uniformly high quality. For this reason, I would like to invite any one of you who has information about such sessions in the future, while they are in the formative stages, to ask the organizers to communicate with one of the members of the OGD Executive Committee (list of members below). Eventually and ideally, we could point out potential duplications and steer each meeting's emphasis to a specific area of research that did not embrace the topics included in several other meetings. Unfortunately, proliferation of such meetings will cut back attendance at all of them – and communications between organic geochemists and scientists in related fields will suffer.

Again, we solicit your suggestions and advice for a better Division, and your information and articles for a better Newsletter.

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1972

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*If approved by amendment to By-laws.

CARBON COMPOUNDS IN LUNAR SAMPLES

Keith A. Kvenvolden

At the Third Lunar Science Conference, January 10-13, 1972, Houston, Texas, ten technical papers were presented which considered a number of aspects of lunar carbon chemistry. These papers were based on studies from Apollo missions 11, 12, 14 and in some cases 15, but the principal emphasis was on results from Apollo 14 samples. In general most of the reported work confirmed previous findings and provided a more comprehensive picture of the chemistry of carbon on the moon. It was generally agreed that many of the carbon compounds on the moon may have had a dual, extralunar origin – solar wind implantation and meteoritic impact.

The total carbon in Apollo 14 samples was distributed as follows:

(1) dark fines, 90–160 μg/g; (2) light gray fines from Cone Crater, 42–80 μg/g; (3) basalt, 35 μg/g; (4) fragmental rocks and breccia, 21–150 μg/g.[1] The carbon isotopic abundances (relative to PDB standard) were +11.0‰ for dark fines[2,3] and –17.3‰ for a breccia[2] (27 μg/g total carbon). This negative value may represent a true isotopic value for indigenous lunar carbon.[2] A sample of Apollo 15 with 100 μg/g total carbon had a carbon isotopic composition of +15.8‰.[2]

The state of the carbon in lunar samples was determined by application of the techniques of extraction, acid hydrolysis, acidolysis or dissolution, and pyrolysis. Water extraction followed by acid hydrolysis of water extracts produced trace amounts of amino acids, principally glycine.[4,5,6] The amino acids found may not be indigenous to the lunar surface, but may arise from as yet unidentified precursors in the lunar samples.[4] Extraction of lunar samples with benzene-methanol produced no extractables at the level of concentration of 10^{-9} g/g[7] and no porphyrins at 2×10^{-14} moles/g.[8]

Hydrolysis, acidolysis or dissolution with deuterated and non-deuterated acids shows that methane,[7,9,10] ethane[7,9,10] and propane[7] are present as gases indigenous to the lunar surface or as possible terrestrial contaminants. The latter possibility was discounted for some samples by a series of experiments involving deuterated reagents.[9]

Concentrations of CH_4 and CD_4, released by treatment with DF or DCl, were proportional to the surface area (surface correlated).[9,10] The deuterated hydrocarbons were generated by the reaction of the deuterated reagents on carbide or carbide-like substances[7,9,10] much of which was demonstrated, by correlations with surface areas, ^{36}A content, and radiation damage and by simulations involving irradiation of lunar fines with $^{13}C^+$ and D_2^+, to result from implantation of carbon on the lunar surface by solar wind.[9] The indigenous hydrocarbons probably resulted from the same process.[9] Experiments with DF also produced DCN, an important protobiological substance.[10]

Pyrolysis of lunar samples over a range of temperatures released CH_4, CO_2 and CO as the main products[5,7,10] with CO being the principal substance formed at high temperatures above about 800°C.[7,10] Much of the CO_2 and H_2O released by pyrolysis below about 400°C was believed to represent contamination.[7,10] In support of some of the hydrolysis results, HCN was also released during pyrolysis.[5,10] Carbon isotopic abundances of pyrolysis fractions of one sample of fines ranged from –5.7‰ to +11.9‰ with condensable material produced at 400° – 600°C having an unusually high value of 31.8‰[3]. Carbon released by this procedure is present in more than one form as suggested by hydrolysis experiments producing a range of carbon isotopic compositions[2] and by pyrolysis experiments as previously mentioned. This carbon may not be of solar wind origin as suggested by irradiation experiments in which simulated solar wind carbon was not released as CO and CO_2 upon pyrolysis.[9] Nevertheless, solar wind implantation of carbon in lunar fines appears to play a major role in the synthesis of hydrocarbons and carbides on the lunar surface.

REFERENCES

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1. Moore, C.B., C. F. Lewis, J. Cripe, W. R. Kelley, and F. Delles, "Total carbon, nitrogen and sulfur abundances in Apollo 14 lunar samples," p. 550.

2. Sakai, H., C. Petrowski, M. B. Goldhaber, and I. R. Kaplan, "Distribution of carbon, sulfur and nitrogen in Apollo 14 and 15 material," p. 672.

3. Ponnamperuma, C., S. Chang, J. G. Lawless, K. A. Kvenvolden, and I. R. Kaplan, "Carbon in the Apollo 14 samples," p. 612.

4. Fox, S. W., K. Harada, and P. E. Hare, "Amino acid precursors in lunar fines from Apollo 11, Apollo 12, and Apollo 14," p. 277.

5. Hamilton, P. B., J. E. Modzeleski, V. E. Modzeleski, M. A. Jabbar Mohammed, L. A. Nagy, B. Nagy, W. S. McEwen, and H. C. Urey, "The carbon compounds in Apollo 14 Lunar Samples," p. 354.

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7. Flory, D. A., S. Wikstrom, S. Gupta, J. M. Gilbert, and J. Oro, "Analysis of organogenic compounds in Apollo 11, 12 and 14 lunar samples," p. 271.

8. Rho, J. H., A. J. Bauman, E. A. Cohen, T. F. Yen, and J. Bonner, "Analysis of Frau Mauro surface fines for porphyrins," p. 646.

9. Cadogan, P. H., G. Eglinton, J. N. M. Firth, J. R. Maxwell, B. J. Mays and C. T. Pillinger, "Survey of lunar carbon compounds II: The carbon chemistry of Apollo 11, 12, 14 and 15 samples," p. 113.

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Future Meetings of Interest

The next "big" gathering of organic geochemists will be the Gordon Research Conference on Organic Geochemistry to be held at Holderness School, Plymouth, New Hampshire, 14–18 August. An interesting and varied program for the five day meeting has been assembled by Gordon Hodgson, Chairman, and John Winters, Vice-Chairman. A special feature of this year's meeting is a session devoted to research "quickies" – last minute results hot from the lab. Whether you are a newcomer to the Gordon Conference or an old regular, please make plans to attend. Applications may be obtained from:

Dr. A. M. Cruickshank, Director
Gordon Research Conferences
Pastore Chemical Laboratory
University of Rhode Island
Kingston, Rhode Island 02881

The following is a list of projected speakers and titles:

J. C. Winters: Microbiology in the development of petroleum.
N. J. L. Bailey: The bacterial degradation of crude oil.
E. Bray: A re-examination of normal paraffin distributions.
A. Marzec: Correlation of crude oils.
E. Peake: Evolution of petroleum in Arctic Sediments.
B. Balogh: Stereochemical studies of polycyclic biological markers with ^{13}C Fourier transform nuclear magnetic resonance.
J. Maxwell: Stereochemistry.
J. M. Hayes: Organic cosmochemistry.
Panel discussion: S. Chang – solar wind; J. G. Lawless – mass spectrometry; K. A. Kvenvolden – organic compounds; K. C. Pering – aromatic hydrocarbons.
G. Eglinton: Environmental geochemistry.
W. Henderson: Sterols, triterpenoid alcohols, amino acids, carbohydrates, hydrocarbons and fatty acids.
B. Simoneit: Organic geochemistry of the deep sea drilling project cores, legs 5–15.
D. J. Casagrande: Evolution of homologous porphyrins.
G. Mueller: Crystallographically oriented particles in oil filled inclusions in fluorides.
A. Nissenbaum: Biogeochemical studies in a hypersaline environment.
J. Smith: Aspects of the distribution and isotopic composition of sulfur in sediments.
W. L. Orr: The sulfur cycle in estuarine environments.
P. H. Given: Sulfur forms in peat.
A. Nissenbaum: Teaching organic geochemistry.
To be followed by an international round table discussion.

For those whose interests include environmental problems or water chemistry, two additional sessions may be of interest. Chemical Oceanography is slated for 31 July – 4 August and Environmental Sciences: Water is on tap for 28 August – 1 September.

Professional News

Keith Kvenvolden has been appointed Chief of the Chemical Evolution Branch, NASA – Ames Research Center, Moffett Field, California.

Editorial Comment

As noted in the last Newsletter, the mechanics of Newsletter preparation are undergoing modification. The previous reproduction and mailing procedures had become prohibitively expensive. In consultation with our parent organization, The Geochemical Society, it was decided to combine issues of the Geochemical News and OGD Newsletter whenever possible. For our Newsletter, this means an earlier press deadline because of the additional time required for typesetting, proofing, corrections, etc. The previous procedure involved xeroxing a typed original with a turnaround time of about ten days (i.e. time between mailing typescript and arrival of Newsletter). The new turnaround time is expected to be about 30 days.

Because of the unforeseen problems associated with any new procedure, the January 1972, Newsletter was unavoidably delayed. We hope you will be understanding until we are able to put the Newsletter on a regular schedule again.

PUBLICATIONS BY OGD MEMBERS

Following is a list of publications by OGD members received since January 1972. Please submit publications to be included in future supplements as follows:

Hodgson, G. W. and Baker, B. L. (1967, "Spectra of selected geochemically significant porphyrins and chlorins," Chem. Geol., 2, 187–198.

Mail these and any news of professional interest to:

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Editor OGD Newsletter
Geosciences Division
University of Texas at Dallas
P. O. Box 30365
Dallas, Texas 75230

BAKER, B. L.

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SMITH, J. E.

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GEOCHEMICAL SOCIETY

Membership Application
Candidature au titre de membre
Antrag auf Mitgliedschaft

Date _____

Name _____
(Nom – Name)

Address _____
(Adresse – Anschrift)

Date and Place of Birth _____
(Date et lieu de naissance – Geburtsdatum und -ort)

College Degrees (with dates) _____
(Diplomes universitaires – Akademische Grade)

Fields of major interest _____
(Domaines d'intérets – Interessengebiete)

Present position or occupation _____
(Situation présente – Gegenwartiger Beruf)

Membership effective (year) _____
(Membre a dater de (annee) – Aktive Mitgliedschaft seit (Jahr))

Important – Do you wish to be affiliated with the Organic Geochemistry Division? ☐ Yes ☐ No

Signature _____

Membership in the Society is open to those qualified to advance the objective of the Society. ("To encourage the application of chemistry to the solution of geological and cosmological problems.") Applicants should indicate whether they desire their membership to begin with the current year or the year following. The annual dues for all members shall be fifteen dollars (US $15.00). Ten dollars (US $10.00) of the dues shall be paid by the Society to Pergamon Press, for which the member shall receive the monthly journal *Geochimica et Cosmochimica Acta.* A portion of the dues shall be paid by the Society to the American Geological Institute. All members shall receive the monthly journal *Geotimes* from the Institute. A member with dues more than three months in arrears is automatically dropped from the rolls. The check for $15.00 (U.S. total) should be made payable to The Geochemical Society, and sent with this application to the Secretary of the Society.