

The NUCLEUS

OF THE NORTHEASTERN SECTION OF THE AMERICAN CHEMICAL SOCIETY

Yuletide Greetings

Annual Student Night

HERMAN F. MARK

Polytechnic Institute of Brooklyn

“New Polymers and New Concepts in Polymer Chemistry”

December 11, 1958

Thursday, 8:00 p.m.

PLACES OF MEETINGS

Dinner, 6:30 p.m.

The Campus Room, M.I.T. Graduate House

Address in Huntington Hall (Room 10-250)

The Massachusetts Institute of Technology

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Combined meeting with the Student Chemistry and Chemical Engineering Societies
within the boundaries of the Northeastern Section

THURSDAY, DECEMBER 11, 1958

The Massachusetts Institute of Technology, Room 10-250

Entrance, 77 Massachusetts Avenue or the Dorrance Biology Laboratories

No Afternoon Meeting in December, 1958

6:15 p.m. Dinner (reservations necessary) in the Campus Room of the M.I.T. Graduate House, entrance from the street, 308 Memorial Drive.

Price \$2.75 per person (tax incl.)

Should you desire a place reserved, mail the enclosed post card, at once, or, after 2:30 p.m. Thursday, call UNiversity 4-6900, Ext. 2961.

EVENING MEETING

In Huntington Hall, 10-250, M.I.T.

Howard H. Reynolds, presiding

8:00 p.m. Herman Francis Mark, of the Polytechnic Institute of Brooklyn
"New Polymers and New Concepts in Polymer Chemistry"

9:15 p.m. Social Hour in the Moore Room

Signing and mailing the dinner card or telephoning for reservations must be regarded as an obligation.

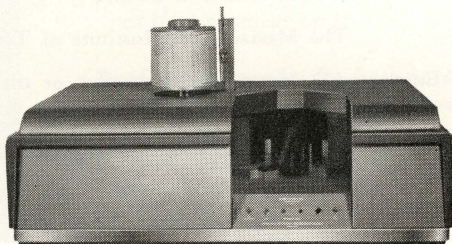
All interested are invited.

After five-thirty o'clock, the Reception Hall of the Campus Room, 308 Memorial Drive, west side of the Graduate House, will be available for members of the Section planning to attend the dinner.

A Committee will be in charge.



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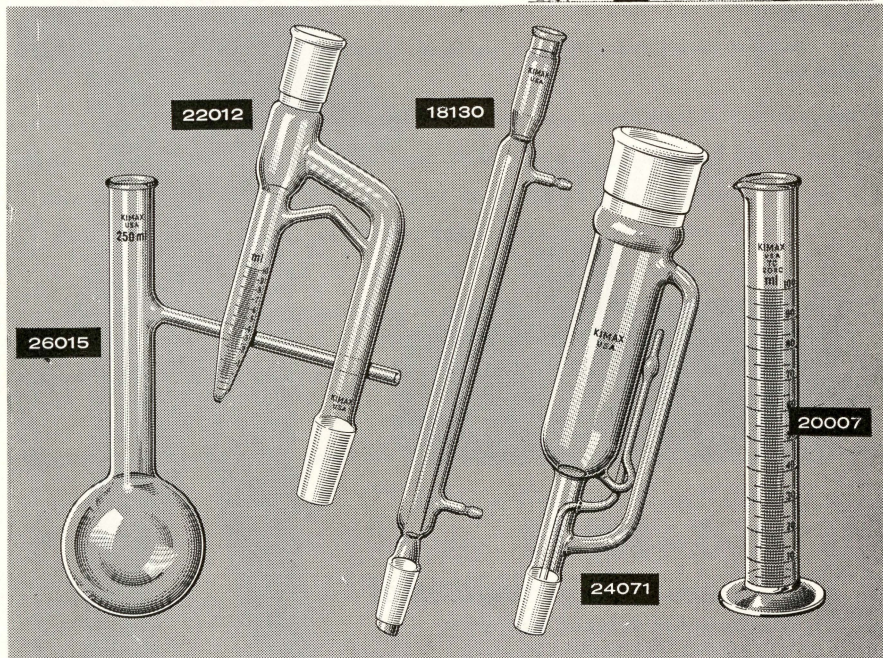
Editorial

HONOR TO OUR STUDENTS

Each December the Northeastern Section devotes its meeting to the many students of chemistry in the schools in its borders. The benefits are mutual. The practicing chemist meets with students early in their careers when their ideals are being built up. The student is given an opportunity to test his plans by talking with his somewhat older brothers in chemical Science. The teacher and the worker in a research or development or control laboratory has an opportunity to gauge the effectiveness of the point of contact he has been using in meeting with the growing generations of new students and newly gainfully employed chemists. The pleasant and relaxed atmosphere of the dinner table makes for a different and perhaps more fruitful approach to problems than does the formal interview where the student is on his metal. Necessarily he is under a strain, knowing that he is under keen observation for qualities which could give him employment. The strain will be absent from the dinner table.

The seating arrangements will guarantee alternation of student with staff at the tables. The contacts so made have the possibility of much more of the desirable man-to-man relationship that interviews are likely to develop.

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DECEMBER SPEAKER



HERMAN FRANCIS MARK

Herman F. Mark was born in Vienna, Austria, in 1895, the son of a physician. He studied at the University of Vienna, and obtained his Ph.D. with W. Schlenk, summa cum laude in 1921. In the same year he became instructor at the University of Berlin and one year later joined the Kaiser Wilhelm Institut für Faserstoff-Chemie in Berlin-Dahlem where he worked

first as Research Fellow, later as supervisor and finally as Group Leader until 1926. In 1922 he married Mary Schramek and now has two sons; Hans, born in 1929 and Peter, born in 1931.

In 1927, he joined the research staff of the I. G. Farben-industrie in Ludwigshafen on Rhine as Research Chemist, became Group Leader in 1928 and Assistant Research Director in 1930.

In 1932, he was appointed Professor of Chemistry and Director of the First Chemical Institute at the University of Vienna, Austria, where he stayed until 1938. During this period he also acted as member of the Board of Education of Vienna and President of the Committee on Wood Utilization in the Austrian Department of Commerce. After the invasion of the Nazis, he was dismissed, and left Europe in 1938 to become Research Manager of the Canadian International Paper Company in Hawkesbury, Ontario, Canada.

In 1940, he became Adjunct Professor of Organic Chemistry at the Polytechnic Institute of Brooklyn, where he was promoted to Full Professor in 1942 and appointed Director of the Polymer Research Institute in 1946.

Dr. Mark has published about 350 original and review articles in various
(Please turn to next Page)

HERMAN FRANCIS MARK

(Continued from previous Page)

American, Austrian, Belgian, English, French, German, Italian, Spanish and Swiss Journals and has written the following books:

First Edition of X-rays in Chemistry and Technology, 1926

Second Edition of X-rays in Chemistry and Technology, 1933

The Structure of High Polymers, 1930
Physics and Chemistry of Cellulose, 1932

The Diffraction of Electrons, 1932

Heavy Water, 1936

Physical Chemistry of High Polymers, 1st Edition, 1940

Physical Chemistry of High Polymers, 2nd Edition, 1950

High Polymeric Reactions, 1941

Progress in Physics and Chemistry of Macromolecules, 1950

Copolymerization, 1951

His principle research has been in the field of X-rays and electrons and their use in studying the structure of matter, in the synthesis, characterization reactions and properties of natural and synthetic macromolecules, such as cellulose, rubber, proteins, vinyl-polymers, nylon and other synthetic products.

Dr. Mark is a member of the Church of the Evangel, of the American Chemical Society, the American Society of European Chemists and Pharmacists, the American Institute of Chemists, the American Society for X-ray and Electron Diffraction, the Society of Rheology, the American Association for the Advancement of Science, the Technical Association of the Pulp and Paper Industry, the American Fiber Society, the Faraday Society, the Bunsen Gesellschaft; and he is a fellow of the American Physical Society, the Textile Institute of Great Britain, and the American Academy of Arts and Sciences. He is Editor of the Journal of Polymer Science, Associate Editor of the Textile Research Journal and has been Associate Editor of the Journal of Applied Physics and the Journal of Chemical Physics. He is on the Advisory Board of the Chemical and Engineering News and of the Zeitschrift für Physikalische Chemie.

Dr. Mark is Editor of the Series on Highpolymers and of the Abstract Services "Resins, Rubbers, Plastics" and "Natural and Synthetic Fibers." He is Chairman of the Technical Committee on Wood Chemistry in the Food and Agricultural Organization of the United Nations and Chairman of the Commission on Macromolecules in the International Union of Pure and Applied Chemistry; he is also Chairman of the Committee on Macromolecules in the National Research Council of the United States and Chairman of the Division of Polymer Chemistry of the American Chemical Society. He is a member of the Board of Directors of Interscience Publishers, Inc., 250 Fifth Avenue, New York, and a member of the Management Committee of the Gordon Research Conferences of the American Association for the Advancement of Science.

Dr. Mark was Chairman of several scientific societies in Europe during the period from 1930-38 and is a past Chairman of the New York Section of the American Physical Society, the Metropolitan Long Island Section of the American Chemical Society and of the Gordon Research Conference on Macromolecules. He is Technical Consultant of the U. S. Navy, the U. S. Army Quartermaster Corps and the National Science Foundation.

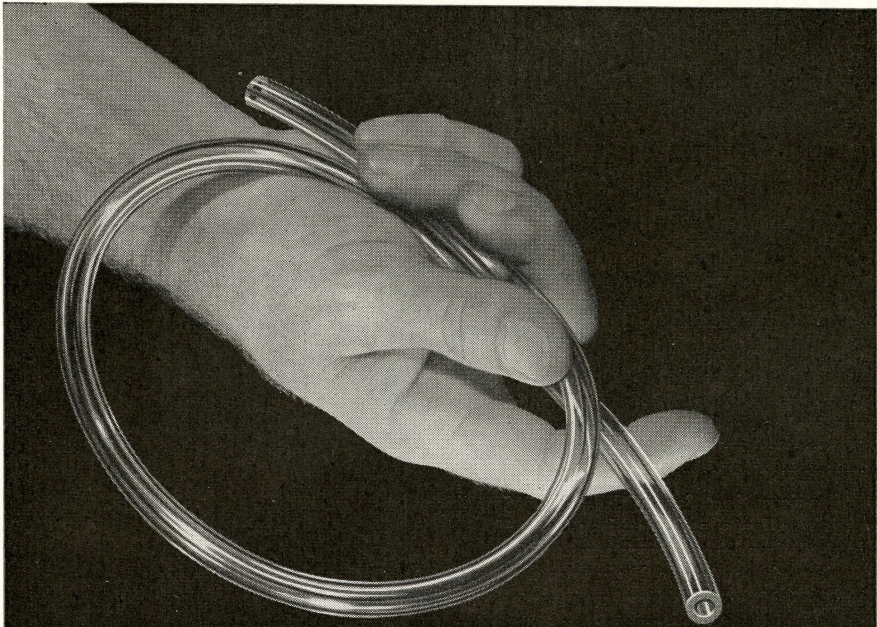
During the second World War, Dr. Mark supervised a Project sponsored at the Polytechnic Institute of Brooklyn by the Quartermaster General and was a Technical Aid of the Office of Scientific Research and Development, where he worked at the development of a snow going vehicle—the so-called "Weasel"—and of an amphibious truck—the "Ducqu".

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The third meeting of the year will be held on Tuesday, January 20, 1959. The speaker, his subject and the details of the meeting will appear in the January issue of the Nucleus.



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ONE-DAY CONFERENCE ON EXPERIMENTATION

A one-day Conference on Experimentation will be sponsored by the chemical education committee on December 12 (Friday) at the Sheraton-Plaza Hotel in Boston. This meeting, which is open to any interested registrant, will begin at 9:30 A.M.

A general session and four seminar groups will explain a newly developed method which "spotlights vital variables", allowing experimental runs in the course of research, development, or process control, to be made in which many variables are changed at one time. By a relatively non-mathematical technique, a "random balance" is made which statistically shows which variables are most important.

Registration fee will be \$12.50 (if received before December 7) and will include lunch and lesson material. Late registrations (after December 7) will be \$15.00. A detailed mailing on this matter has been sent to members of the Northeastern Section.

All interested persons are invited.

ANALYTICAL GROUP

DAVID N. HUME, Chairman, M.I.T. University 4-6900. Ext. 507.

GEORGE R. SOMMER, Secretary-Treasurer, Howe and French. HANcock 6-5910.

The third meeting of the Analytical Group will be held at 8:00 p.m. on Wednesday, December 17, 1958, in Room 2-131, M.I.T.

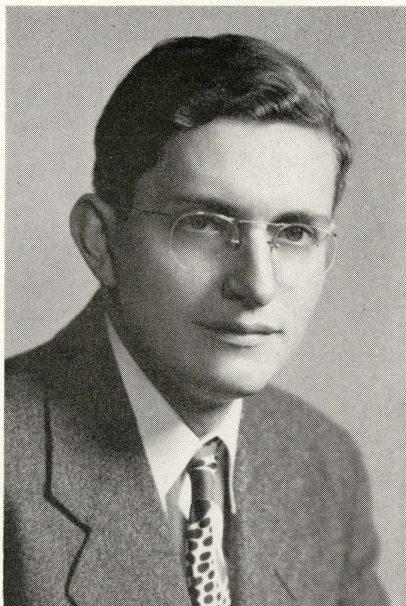
Arnet L. Powell of the Office of Naval Research, Boston, and M.I.T. will speak on

"Tracer Techniques in Organic Chemistry"

Prior to the meeting there will be a dinner at 5:45 p.m. in the M.I.T. Faculty Club on the sixth floor of the Sloan Building at 50 Memorial Drive, Cambridge. Reservations may be made by telephoning Mr. Russell T. Werby of the Werby Laboratories. LI 2-0739.

All interested persons are invited.

ANALYTICAL SPEAKER

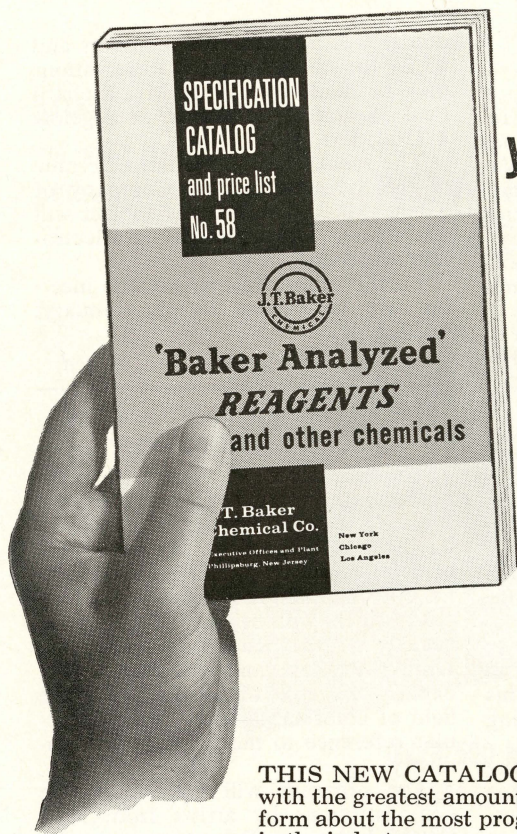


ARNET L. POWELL

Arnet L. Powell, the Analytical Group speaker for December, was born in Worcester, Mass. on Feb. 4, 1915. After receiving his early education in the public schools of Worcester he entered Worcester Polytechnic Institute, receiving the B.S. degree in Chemistry in 1938. He remained there during the period 1938-40 in order to serve as Graduate Assistant in Physics. He was awarded the degree of Master of Science from W. P. I. in 1940, after having performed research on amphoteric indicators. He returned to graduate school in the 1950's, while with the Office of Naval Research, receiving the Ph.D. Degree in 1956 from Clark University. His doctoral research was concerned with ion association in non-aqueous solvents. It is interesting to note that work on his bachelor's thesis led to an early publication in analytical chemistry concerned with determination of halogens in organic compounds.

Dr. Powell has had seven years of varied industrial experience, divided between the Dow Chemical Company and Sylvania Electric Products, Inc.

(Please turn to Page 68)



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ARNET L. POWELL

(Continued from Page 66)

With the former he performed research on electroanalytical methods and corrosion and, during World War II, on ethylbenzene as an intermediate for styrene, one of the components of GR-S synthetic rubber. With Sylvania he was engaged in research and development of small electroluminescent devices.

In 1947 he accepted the position of Chemist with the Office of Naval Research, Boston, where he is still employed. In 1954 he was promoted to Assistant Chief Scientist with that same government agency. His main responsibilities with ONR are coordination and administration of research contracts in the field of chemistry.

In the fall of 1956 Dr. Powell received an appointment as Guest of the Massachusetts Institute of Technology and, since that time, has been collaborating with Professor C. Gardner Swain in research on the mechanism of the Cannizzaro reaction. In this work radiotracer techniques are being extensively employed.

Dr. Powell is a member of the American Chemical Society and the Society of the Sigma Xi. At the present time he is serving the Northeastern Section of the American Chemical Society as Chairman of its Public Relations Committee.

Dr. and Mrs. Powell and their daughter, Noreen, make their home in Wavland, Mass.

BOSTON SECTION OF THE ELECTROCHEMICAL SOCIETY

CHARLES LEVY, Chairman, Watertown Arsenal,
Watertown 4-8540, Ext. 685.

RICHARD PEAK, Secretary-Treasurer, Raytheon
Mfg. Co., Bigelow 4-7500, Ext. 407.

The third meeting of the year of the Boston Section of the Electrochemical Society will be held at 7:45 p.m., Monday, January 19, 1959 in the Arthur D. Little, Inc. Laboratories at Acorn Park, Concord Turnpike, Cambridge. There will be a social hour at 5:30 p.m., followed by a dinner at 6:30 p.m. The cost of the

dinner will be \$2.75 for members and \$3.25 for non-members. Reservations may be made by calling Mr. Richard Peak, Secretary-Treasurer, at Bigelow 4-7500, Ext. 407.

The speaker will be Charles Jerome of the Sylvania Electric Company of Salem, Massachusetts. His subject will be "Recent Developments in Electroluminescence."

Further announcement of the meeting will be carried by the January, 1959, Nucleus.

All interested persons are invited

DECEMBER TV PROGRAM ON COLOR LITHOGRAPHY

The December program of the current monthly series sponsored by the society's television sub-committee will be broadcast Monday, December 15, at 6:00 P.M., on WHDH-TV (Channel 5), on *Dateline Boston*. This telecast, which will be produced for the society by the Rust Craft Division, United Printers and Publishers, will explain the rôle of chemistry in the field of color lithography, with particular reference to the greeting card industry.

The program will consist of live demonstrations by artists from Rust Craft's Litho Art Department, supplemented by short clips of color film taken at the company's modern greeting card plant in Dedham.

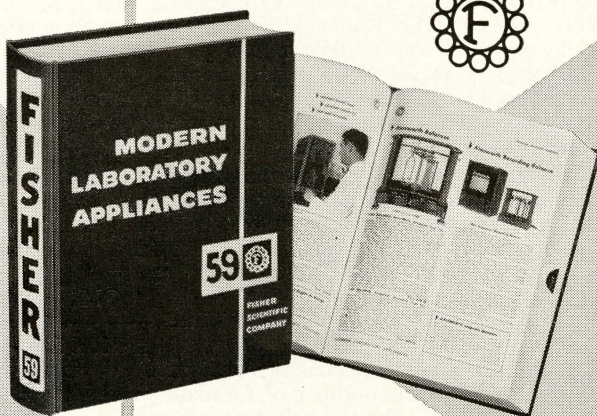
The following points will be covered:

1. A brief history of lithography (known in Europe as "chemical printing").
2. How chemistry has contributed to the industry's growth.
3. Some of the ways in which modern lithography is used.
4. The complete series of processes involved in producing greeting cards.
5. Future developments anticipated through chemical research.

The program is being coordinated for the society by Earle B. Hodgdon, chairman of the television sub-committee of the public relations committee. Dr. Arnet L. Powell is chairman of the public relations committee. This will be the sixth monthly program sponsored by the society in the current series.

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"96,493 COULOMBS"

By JAMES J. LINGANE

DEPARTMENT OF CHEMISTRY, HARVARD UNIVERSITY, Cambridge 38, Mass.

Summary of an address before the Northeastern Section, November 13, 1958

Recognition of the precise equivalence between quantity of chemical change at an electrode and the associated quantity of electricity (coulombs) is one of Michael Faraday's best known contributions to physical science. Indeed it was a major contribution to analytical chemistry, but it has taken us a century to appreciate the analytical potentialities inherent in the statement reproduced so faithfully in chemistry textbooks for generations, that "one equivalent of chemical change at an electrode during electrolysis corresponds to the passage of 96493 coulombs of electricity." At long last, however, the faraday has become a recognized unit of analytical measurement, and *coulometric analysis* has been added to the analytical chemist's roster of tools.

In a coulometric analysis the substance being determined, contained in an electrolysis cell, is caused to undergo a stoichiometrically exact reaction in such a way that its quantity can be computed via Faraday's Law from the measured number of coulombs of electricity passed. Provided that no extraneous reaction is involved, the weight W of the substance is given by

$$W = \frac{QM}{n \cdot 96,493} \quad (1)$$

where Q is the quantity of electricity (coulombs), M is the formula weight of the substance, and n is the number of faradays (1 faraday = 96,493 coulombs) associated with the reaction of one formula weight.

"Provided that no extraneous reaction is involved. . . ." This is the key to a successful coulometric analysis. The conditions of electrolysis must be such that the sum of all the reactions at the working electrode yields a quantity of electricity that accords via eq. 1 with the quantity of substance being determined. To satisfy this condition the cardinal requirement is that the potential of the working electrode be controlled so that it is prevented from attaining a value at which some extraneous reaction could occur.

Depending on the technique employed to control the potential of the working electrode two kinds of coulometric analysis have come into being: coulometric analysis at constant potential, and coulometric titration at constant current.

In coulometric analysis at controlled potential the potential of the working electrode against an external reference electrode is maintained at the appropriate value by continuous adjustment of the total voltage applied across the cell as the electrolysis proceeds. The potential control can be achieved automatically with a *potentiostat*. Under this condition the current usually decays exponentially with time and asymptotically approaches zero. The quantity of electricity passed is then evaluated from the reading of a coulometer or equivalent current-time integrator in series with the cell.

In coulometric titrations at constant current a redox buffer is added to the test solution and the product of the electrode reaction of the redox buffer reacts with the substance being determined. The end point can be determined by any of the means employed in classical titrimetry.

The two techniques of coulometric analysis are fundamentally similar in that they both rest on control of the potential of the working electrode. They differ in the manner used to achieve this control. The direct or external control employed in constant potential coulometric analysis has the virtue of great selectivity; the potential can be controlled at any desired value and reactions

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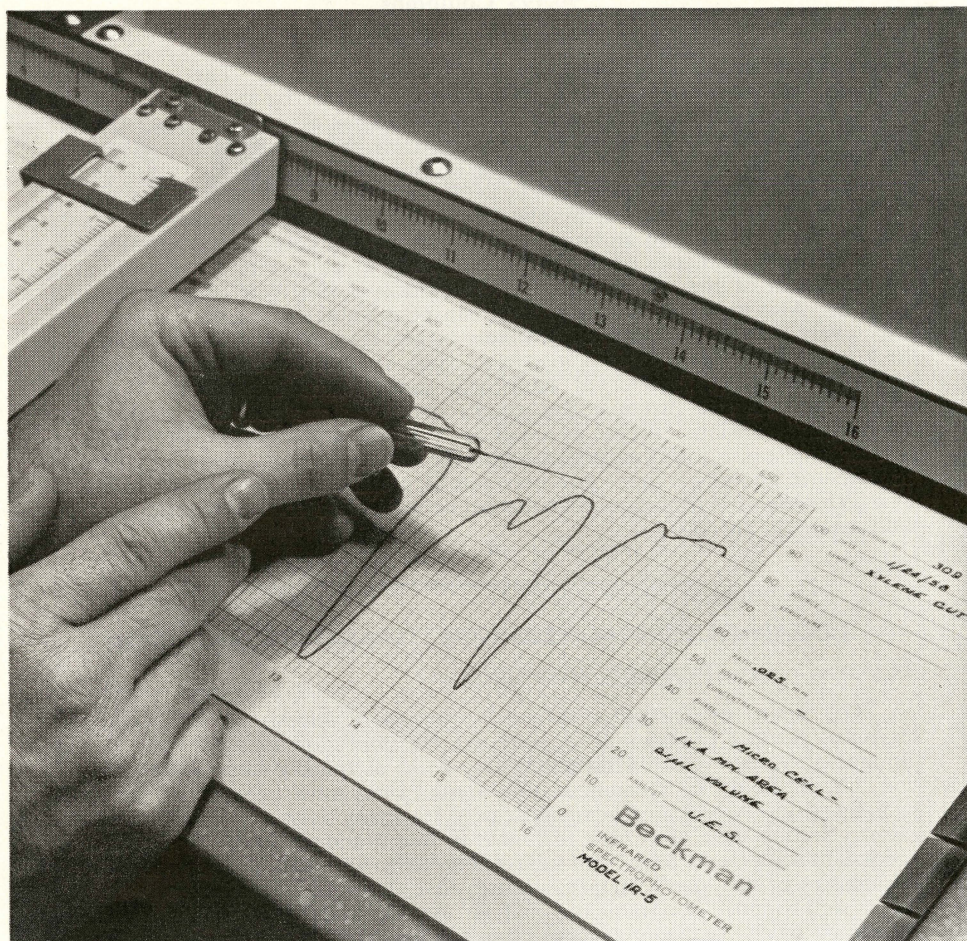


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96,493 Coulombs

(Continued from Page 70)

whose potentials differ by as little as 0.2 v. can be separated. The internal control achieved in constant current coulometric titrations by the use of a redox buffer is less selective, in that only a limited number of control potentials corresponding to the operating potentials of suitable redox buffers is available.

However, viewing the other face of the coin, constant potential coulometric analysis is relatively slow; the current decreases more or less exponentially with time and approaches zero asymptotically. Completion of the electrolysis usually requires from 30 min. to an hour. A constant current coulometric titration can be completed in a matter of two or three minutes by employing a relatively high concentration of the redox buffer which permits a relatively large generating current. Also the fact that the current can be maintained strictly constant permits a very simple evaluation of Q merely by clocking the time to the end point. In a controlled potential coulometric analysis, on the other hand, Q must be evaluated by a coulometer or equivalent current-time integrator. Constant current coulometric titration also excels over constant potential coulometric analysis in precision. Errors as small as $\pm 0.1\%$ are commonplace with the former, whereas $\pm 1\%$ is more usual with the latter. In short, constant potential coulometric analysis is more advantageous as a catholic *analytical method* than as a *determinative technique*, but the converse applied to coulometric titration with constant current.

LOCAL DUES FOR THE NORTHEASTERN SECTION

MEMBERS OF THE NORTHEASTERN SECTION:

The Board of Directors of the Northeastern Section of the American Chemical Society is planning to authorize the collection of local dues in the amount of \$2 per year. This action may come as quite a surprise to some of you, but it should be recognized that annual dues have been levied by most sections of the American Chemical Society for many years. We in the Northeastern Section have been very fortunate in that National Society contributions and local endowments have been sufficient up to now to maintain solvency. Careful analysis of this year's budget indicates that about \$5,700 is needed to carry out a well-rounded program and that an income of only \$4,500 is available. Projection of the section's proposed expenditures over a five-year period indicates that by 1963-64, taking into account both desirable expansion in activities and inflationary trends, the annual cost of operation will rise to something in the neighborhood of \$8,000.

The most important areas which necessitate increased support are Publications, Public Relations, and Chemistry Education. These three committees have been doing a splendid job for some time, and not only are the over-all costs of their programs increasing, but they have a number of worthwhile projects which either cannot be continued or will have to be drastically curtailed if ways and means for raising more money for the Section cannot be found.

You are all familiar with the "Nucleus" and are aware of its important mission as our local section journal. Rapidly rising publication costs are making it necessary to find additional support for this activity. Despite marked increases in the number of advertisements this year, it is still not possible to raise sufficient revenue by this means to ensure continuance of this organ in its present very effective form. The officers of the Nucleus are not paid any fee and none is contemplated.

The Chemistry Education Committee has greatly expanded its organization and has a truly remarkable program which is now just getting under way. A

(Please turn to Page 74)

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LOCAL DUES FOR THE NORTHEASTERN SECTION

(Continued from Page 72)

high school contact group has been assembled, the purpose of which is to reach all the high school chemistry teachers in the greater Boston area in order to provide maximum service to them. A pilot project was carried out in October in Norfolk County in the nature of a joint meeting for the science teachers. With the assistance of this contact organization, the Chemistry Education Committee conducts a variety of projects of benefit to high school science teachers including a summer employment bureau, technical meetings, training courses on special subjects (last year's session on rocketry is an example) and, in cooperation with the Public Relations Committee, a Speakers' Bureau.

The Public Relations Committee is sponsoring a very active program designed to publicize the various activities of the Section and to better acquaint the public with the contributions of the chemist to the general welfare. Press relations have been greatly improved in the last year or two, and acceptance of releases by Boston and suburban newspapers has undergone a sharp upturn. This is in large measure due to engagement of a paid press consultant on a part-time basis, and his continued services are deemed essential. A monthly television program in which local industries, universities, and government installations participate has proved to be a very effective medium for acquainting the public with the varied work of chemists. This program appears once a month on "Date Line Boston" on WHDH-TV, Channel 5. The section also sponsors the ACS radio program "Objective", which appears on WHDH every Thursday evening at 10 p.m. Plans are under way to launch a series of high school science quiz programs on local radio stations during the year.

It should be pointed out that the Public Relations Committee of the Northeastern Section was cited by the National Society in a recent issue of Chemical & Engineering News for its outstanding program.

BOARD OF DIRECTORS
NORTHEASTERN SECTION
AMERICAN CHEMICAL SOCIETY
November 13, 1958

MEETING OF THE DIRECTORS

The November meeting of the Board of Directors was held in the Moore Room, MIT, on Tuesday, November 4, 1958. The meeting was called to order at 4:00 P.M. with Chairman Howard H. Reynolds presiding. The following were present: Edward R. Atkinson, Avery A. Ashdown, John T. Blake, Robert D. Eddv. Austin W. Fisher, Jr., Thomas R. P. Gibb, Jr., Lawrence J. Heidt, James H. Gardner, Arno H. A. Heyn, Henry A. Hill, David Howell, Paul C. Maybury, Lloyd H. Perry, Arnet L. Powell, Marco H. Scheer.

Chairman Howard H. Reynolds opened the meeting by presenting the Budget Committee report in the absence of Budget Chairman Lloyd H. Perry. He closed with a proposal to

have local section dues of \$3.00.

Discussion followed evaluating the need of this increase and the merits of the proposed program. In general it was felt that the efforts which are being put into Public Relations, Chemical Education and Publications are worth continuing and extending. And, since these steps tend to improve professional status, they will benefit the membership of the Northeastern Section. It was pointed out however, that this is one direction of improvement, perhaps external and that other avenues should be explored to increase active participation in meetings by the membership. This is perhaps an internal problem.

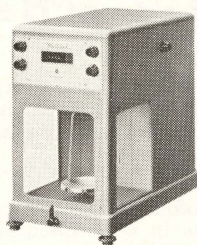
Chairman Howard H. Reynolds presented to the Directors the following
(Please turn to Page 77)

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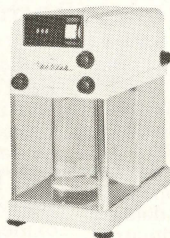
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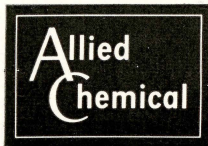
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MEETING OF THE DIRECTORS

(Continued from Page 74)

forecast which has arisen from discussions of various committees concerned with the principal areas of expenditure.

"Our analysis of the budget indicates that we need to spend approximately \$5700 (this is a *minimum* figure), and we have an income of only about \$4500. The Budget Committee has suggested that if we wish to expend the amount of money indicated to maintain the efforts of these three major groups at the level we would like, we will have to find other funds. They have suggested the institution of dues of \$2 and \$3 per year.

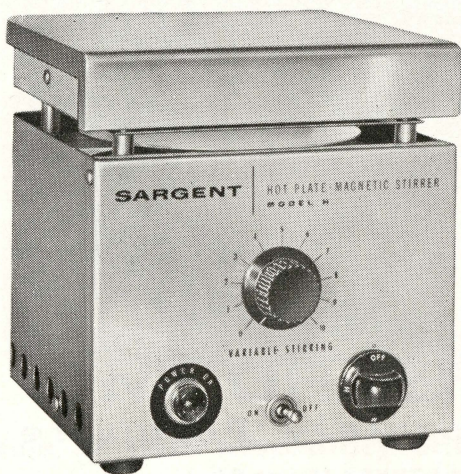
We have also spent some time projecting a five-year forecast of expenses of the Section. Assuming that the Section wishes to fulfill its obligations as a professional society, we find that in the year 1963-64, taking into account the increasing

costs, this Section would expect to spend in the neighborhood of \$8,000. The number of members of the society cannot be expected to increase proportionately to this figure, and therefore, consideration must be given to the problem of raising this increased amount of money over and above our present budget. Consequently, in considering the possibility of dues, we should look at the problem from the long-range as well as the short-range standpoint."

Some consideration was given to the availability of funds. The question was raised as to a possible increase in per capita allotment from the National society. This was not considered to be a likely source since the increase could only come about through an increase in National dues. It was noted that practically all other large sections have local dues in the order of \$2 and \$3.

The mechanism of increasing dues
(Please turn to Page 79)

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MEETING OF THE DIRECTORS

(Continued from Page 77)

was considered. After some consideration by the Directors and reference to the By-laws, it was decided that it is within the scope of the Directors to authorize dues if they deem it necessary. However, it was decided that the feeling of the Section should be determined in so far as possible.

On a motion duly made and seconded, it was VOTED: that the Budget which totals \$5675 be adopted.

In order to inform the membership of the Directors' position on this matter, the following resolution was proposed:

The Directors have considered and have approved the proposed budget. Realizing that the present income is not adequate to cover this budget, the Directors see no alternative means for continuing the proposed program except by instituting chapter dues.

The Directors were unanimous in their approval of this resolution to notify the membership of their position. The matter will be studied and voted on at the January Directors meeting

Thomas R. P. Gibb Jr. reported that there are no changes imminent in the National Society By-Laws governing changes in councilors. He presented the following suggested changes for the Northeastern Section which may be acted on the next meeting.

"1. ARTICLE VII—Section 1

"A Councilor shall not be eligible for re-election until after a lapse of one year."

Revised by insertion to:

"A Councilor who is not a member of a committee of the Council, shall not be eligible for re-election until after a lapse of one year."

2. ARTICLE VII—Section 1

"The Board of Directors shall have the power, if necessary, to retire, by lot, a Councilor in order to produce nearly equal distribution of terms."

Change to read:

"The Board of Directors shall have the power to retire a Councilor when the number of Councilors is greater than the number specified by the American Chemical Society, except that a Councilor who is a member of a committee of the Council shall not be so retired. Ordi-

(Please turn to Page 80)



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MEETING OF THE DIRECTORS

(Continued from Page 79)

narily, the Councilor longest in office shall be retired, but the Board of Directors may decide the matter by lot."

Chairman Reynolds reported on the symposium on Random Balance which will be sponsored by the Chemical Education Committee. It is to be a one-day program held on December 12, 1958 at the Hotel Sheraton.

According to Mr. Reynolds, the selection of Committee Chairmen for the coming spring ACS meeting in Boston is complete.

Ladies Entertainment—

Elizabeth C. Dearborn

Personnel—David M. Howell

Equipment—William T. Barker

Plant Tours—Austin W. Fisher, Jr.

The Treasurers report was turned over to the Secretary.

Treasurers Report, October 31, 1958:

Balance September 30, 1958 \$1,767.90

Expenses

Preprandial Committee

Funds \$175.12

Public Relations 31.50

Dinners October 19.25

Chem. Education 7.50

Coffee Committee 15.39 248.76

Balance October 31, 1958 \$1,519.14

Balance Breakdown

National Fund 788.92

Local Section Fund 238,68

Chairmans Fund 491.54

\$1,519.14

Arno H. A. Heyn reported on membership.

Total as of 9-30-58 2521

New 18

Moved In 34

Moved Out 24

Died 1

Total as of 11-4-58 2548

Program Committee Chairman John L. Oncley announced that the January 8 meeting will be held jointly with the American Association of Clinical Chemists.

Errors were pointed out in the minutes of the last two meetings: The name of Edward R. Atkinson should be inserted as present at the annual

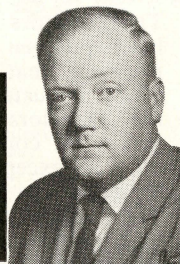
MEMBERSHIP BLANKS

With the December issue of the Nucleus there will be found an Application for Membership in the American Chemical Society for 1959. Let this blank seek out an eligible non-member to bring him into the ACS.

meeting July 30 and the name of Robert D. Eddy should be included among those present at the September 30 Directors meeting. Following these



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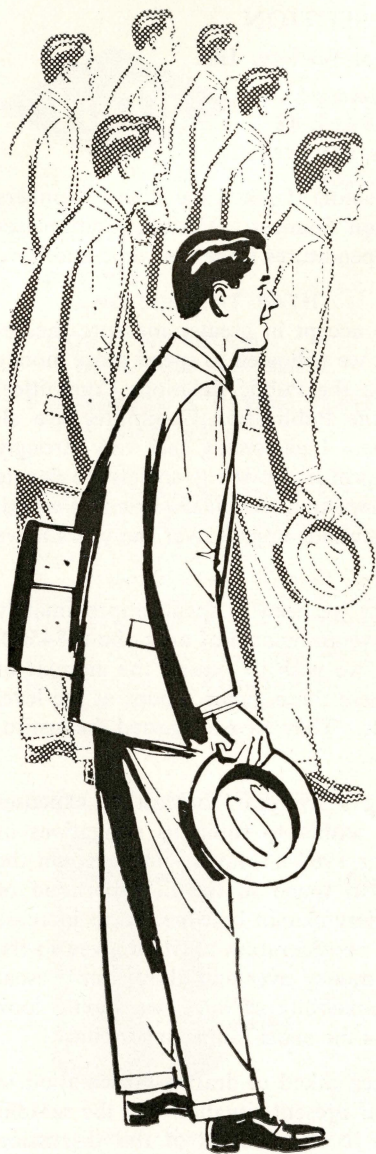
corrections, the minutes of the July 30 and September 30 meetings were approved as published in the NUCLEUS.

Since there was no further business, the meeting was adjourned at 6:30 P.M.

Respectfully submitted

FRANCIS J. RODERICK

Secretary, Northeastern Section
American Chemical Society



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NORTHEASTERN SECTION
of the American Chemical Society, Inc.
Board of Directors

LETTER TO THE DIRECTORS OF THE NORTHEASTERN SECTION:

At the last meeting of the Board of Directors, I asked the Board members to give some thought to Northeastern Section finances. Various Committees have met and discussed the major areas of expenditures since that time and have made several recommendations.

It is quite obvious that if we intend to accept in greater measure the responsibilities of our profession in the Section, we will need to spend more money than we take in. Most of us are agreed that the Public Relations Committee, the Chemistry Education Committee, and the Publication Committee are all activities which should be increased in scope. I personally feel very strongly that we have a responsibility, not only to our profession, but to society, to devote increasing efforts to help solve problems involved in a technically oriented world. The three groups mentioned can have a tremendous impact over the years if we are willing to put forth the effort.

Our analysis of the budget indicates that we need to spend approximately \$5700 (this is a *minimum* figure), and we have an income of only about \$4500. The Budget Committee has suggested that if we wish to expend the amount of money indicated to maintain the efforts of these three major groups at the level we would like, we will have to find other funds. They have suggested the institution of dues of \$2 or \$3 per year.

We have also spent some time projecting a five-year forecast of expenses of the Section. Assuming that the Section wishes to fulfill its obligations as a professional society, we find that in the year 1963-64, taking into account the increasing costs, this Section would expect to spend in the neighborhood of \$8,000. The number of members of the society cannot be expected to increase proportionately to this figure, and, therefore, consideration must be given to the problem of raising this increased amount of money over and above our present budget. Consequently, in considering the possibility of dues, we should look at the problem from the long-range as well as the short-range standpoint.

The Public Relations Committee has been asked to draft a presentation to Northeastern Section members, describing our present situation and the reasons why we will need to have dues. We hope to have copies of this discussion available at the next Board meeting.

We, as Directors of the Northeastern Section, have a very serious problem. I hope that you will be able to be present at our meeting on November fourth, and that we can at that time decide on a specific course of action.

Sincerely,
HOWARD H. RENVOLDS, *Chairman*
October 22, 1958



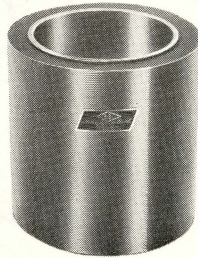
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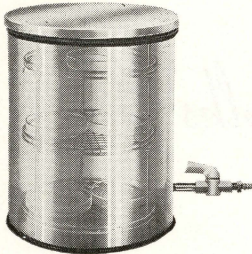
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