ARCS & SPARKS

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THE PRESIDENT'S CORNER

It gives me the greatest pleasure to dedicate this volume of Arcs and Sparks to Canadian Spectroscopy. Each succeeding year we attend the Ottawa Symposium, we become more deeply impressed with both the growth and the depth of Canadian Spectroscopy. As the number of spectrographic laboratories continues to grow, the attendance and interest at Ottawa soars to new highs. As increasing sophistication of analyses becomes the accepted pattern of progress, the greater the anticipation, interest and discussions on the papers given. This year, as if symbolizing the emergence of Canadian Spectroscopy to a new area, the Ottawa meeting was held in the magnificent new National Gallery of Canada. Symbolic, also, seemed the merger of art and science in this outstanding structure . . . predicting, as it were, newer appreciations in the challenging era that is our future. It is to this Canadian future that we, at United, will be pleased to contribute.

GEORGE T. SERMON, *Pres.*
United Carbon Products Co.

Cover Story . . .

Magnificent site of the Eighth Ottawa Symposium on Applied Spectroscopy was the new Lorne Building in central Ottawa. This strikingly modern architectural cube of metal, glass and masonry befits the importance of housing the National Gallery of Canada. Arrayed in discriminating taste are some 1,225 paintings, 83 sculptures, and more than 5,000 drawings and prints. It was in this artistic atmosphere that spectrographic science recorded new achievements during the Eighth Ottawa Symposium. It is in the spirit of scientific advancement that we salute Canadian Spectroscopy with this issue of Arcs and Sparks.

CONGRATULATING THE KEYNOTER of the Annual dinner were: (l. to r.) "Doc" T. W. M. Davis, Food and Drug Directorate, Ottawa; Joseph Irwin, American Brass Co., Waterbury, Conn.; Dr. D. S. Montgomery, distinguished dinner speaker, Senior Scientist, Fuels and Mining Practice Division, Department of Mines and Technical Surveys, Ottawa; Donald Jackson, Canadian National Railway, Montreal; Bill Bennett, Northern Electric Co., Ltd., Lachine, Quebec; and A. W. "Gus" Pross, Canadian Industries, Ltd., McMasterville, Quebec.

OTTAWA IN 1961

One year ago, it was thought that the Ottawa Symposium had reached a peak in attendance and enthusiasm . . . but the Eighth Ottawa Symposium on Applied Spectroscopy, September 18-20, 1961 surpassed all expectations. Recording the steady, sustained growth of one of Canada's specialized sciences, this symposium marked another forward step for the Canadian Association for Applied Spectroscopy.

The optimistic "forward look" of Canadian Spectroscopy was proved by several important factors. Selection of the new Lorne Building which houses the National Gallery of Canada was in excellent taste. Not only the atmosphere but the physical characteristics of the Auditorium, in which the general meetings were held, was reflective of a progressive spirit. This sense of advancement in the science was shared by the increasing list of important sustaining members, numbering many of the outstanding scientific organizations in our field. As final evidence of growth, the number of registrants and the level of enthusiasm shown were at an all time high.

(Continued on page 4)

WHO WOULDN'T BE HAPPY when talking to Martha Zietlow, New York Central Railroad, Research Labs, Cleveland, Ohio. Lucky men are (l. to r.) John Leger, Perkin-Elmer (Canada) Ltd., Montreal; Paul de Lhorbe, Anaconda American Brass Ltd., Toronto; and partially hidden unknown admirer (unknown to this editor, that is.)

PROPERLY TAGGED TRIO, probably comparing mental notes on a paper just read, are (l. to r.) Doug Russell, National Research Council, Ottawa; Peter Tymchuk, National Research Council, Ottawa; and Ray J. McGowan, U. S. Naval Civil Engineering Lab, Port Hueneme, Calif. Good looking group, eh?

SHE'S ENJOYING THEIR COMPANY and all we can say is more power to (l. to r.) John Kelly, Steel Company of Canada, Ltd.; N. Tomingas, Canadian Copper Refineries, Ltd., Montreal East; and, of course, the center of attention is pretty Knista Uudna, Soils Department, Rutgers University, New Brunswick, N. J. They're probably trying to enroll in Rutgers!

Ottawa in 1961 *(Cont. from page 3)*

Progress like this does not simply happen. Recognition must be accorded to the current officers of the CAAS for their guidance: President, W. J. Bennett, Northern Electric Company, Lachine, Quebec; Vice President, E. G. Herbert, Algoma Steel Corp., Ltd., Sault Ste. Marie, Ontario; Secretary-Treasurer, L. R. Pittwell, Dominion Magnesium Ltd., Haley, Ontario. We salute the excellent management contributed by these men.

And, for a real "roll-up-your-sleeves" group that dug in and worked to insure the success of the Eighth Symposium, we heap our praise on the Symposium Committee: Chairman, Roland Lauzon, National Research Council, Ottawa; and Members J. C. Bartlet, Food and Drug Directorate, Ottawa, Dr. S. Berman, National Research Council, Ottawa, T. W. M. Davis, Food and Drug Directorate, Ottawa, Dr. A. H. Gillieson, Department of Mines and Technical Surveys, Ottawa, G. Lachance, Department of Mines and Technical Surveys, Ottawa, D. S. Russell, National Research Council, Ottawa. Only those who have helped plan, organize, and administer a major symposium really appreciate the time and effort spent by this committee in doing their unexcelled job.

Among the anticipated refinements of the Ottawa Symposium are the accommodations at the Chateau Laurier Hotel. With a charm all its own, this fine hostelry adds immeasurably to the Ottawa welcome. Excellent transportation was furnished to the Golden Totem Restaurant, at the Ottawa Airport Terminal, for the Annual Symposium Dinner which was held Tues-

CANADIAN CAPERS

WE WERE SURPRISED to see Martha Zietlow, New York Central Railroad, Cleveland, in the middle of a Canadian forest! Just like us, Martha wisely routed herself through the magnificent Algonquin Forest in Ontario to take in the breathless beauty of the Fall colors. Imagine her surprise when she ran into a couple of old woodsmen from Bay City, Michigan.

GOURMETS DELUXE are Ray McGowen, U. S. Naval Civil Engineering Lab, Port Hueneme, California, and John C. Bartlet, Food and Drug Directorate, Ottawa. Not satisfied with recommending specific French dishes at Madame Burger's fine restaurant, they led us down the vineyard pathways of several delectable French Wines . . . and, it might be added, we put up only token resistance.

DELIGHTFUL DISTAFF DISTINCTION was afforded the Eighth Symposium by the attendance of Betty Ely, Mellon Institute, Pittsburgh, Pennsylvania. A colleague of Dr. Edwin S. Hodge, of Mellon, Betty added both beauty and brains to many an informal session on matters spectroscopic. It is our belief that every effort should be exerted to attract more women scientists to this meeting. Hear, hear!

MADAME BURGER'S PLACE was usually crowded with crew members from the symposium. And to make the record unmistakably clear, Madame Burger's Restaurant is one of the finest French eating houses in Canada. Located just across the Ottawa River in Hull, Ontario, it was here that many statesiders were initiated into the exquisite temptations of truly fine French cuisine—long live Madame Burger's!

day evening, September 19th. A social hour was provided prior to the dinner which was memorable . . . even outdoing the informal exchanges occurring during the daily coffee breaks. From every angle, the meeting was planned to please.

The heart of the meeting was the presentation of thirty-nine papers covering a wide range of spectrography. In general, they were tailored to the needs and demands of the Canadian economy. Officers commented that the caliber of the papers, and their presentations, were highly satisfactory. Remarks from the audience tended to be extremely enthusiastic and discussion was thorough at all sessions. Pacing the symposium progress, due to the unavoidable absence of Dr. John Convey, Director of Mines Branch, Department of Mines and Technical Surveys, was substitute keynoter Dr. D. S. Montgomery, Senior Scientist, Fuels and Mining Practice Division, Department of Mines and Technical Surveys, Ottawa. Certainly, it was agreed, Dr. Montgomery's dinner address aptly generated the imagination of the entire audience at the Annual Symposium Dinner.

At the conclusion of the Eighth Ottawa Symposium, the first to be held in the National Gallery of Canada, it was fervently hoped that the location could be preserved for next year's meeting. The larger attendance, the delightful new surroundings, and the evident spirit of spectrographic growth signaled this meeting as a milestone. The pattern seems set—one of increasing interest by Canadian and United States spectroscopists in the big Canadian meeting of the year—Ottawa.

.... at the EIGHTH

SNAIL SOCIETY . . . before leaving the delights of the appetite, we wish to report a subversive movement among well-travelled spectrographers. Seems a certain group of gregarious gourmets are silently organizing the Snail Eaters Association . . . or the SEA. Now, let's face it—some of us don't mind the SEA, but others of us . . . whoops!

ACCOLADE AT OTTAWA this year befits the keynote address by Dr. D. S. Montgomery, Senior Scientist, Department of Mines and Technical Surveys, Ottawa. It was hard to substitute for Dr. John Convey, but Dr. Montgomery carried it off great and was most pleasing to the assemblage.

SWEET SUITE was held at United's quarters in the Chateau Laurier. George T. Sermon, President, and Carl Leistner, Technical Advisor to the President, were indeed grateful and pleased with the many friends who visited with them. Holding to the philosophy that it "pays to relax", all visitors to the United suite were encouraged to unwind from the rigors of the symposium . . . and, judging from the reaction, the idea caught on very well.

WEDDING OF ARTS AND SCIENCES took place when the Eighth Symposium opened in the new Lorne Building which houses the National Gallery of Canada. This magnificent structure, with its hundreds of objects d'art captivated the visiting spectroscopists. Perhaps, they agreed, the world of art emphasizes the emotional rather than the reason . . . but, certainly, it is appreciated. Who knows, some spectroscopist might take up painting as an avocation and end up another Picasso.

THEY PROBABLY JUST ATE, judging from the pleased expressions on their handsome countenances. They are (l. to r.) J. F. Gamble, Soils Dept., Rutgers University, New Brunswick, N. J.; Prof. Ben Stallwood, Department of Chemistry, Clarkson College of Technology, Potsdam, N. Y.; and L. R. Pittwell, Secretary- Treasurer of the CAAS, and Chief Chemist, Dominion Magnesium, Haley, Ontario.

FANCY FREE FOURSOME delving into either spectroscopy or gastronomy are (l. to r.): Dr. A. H. Gillieson, Department of Mines and Technical Surveys, Ottawa; Betty Ely, Mellon Institute, Pittsburgh, Pa.; Dr. Dorothy Harper, Research Lab, Howard Smith Paper Mills, Ltd., Cornwall, Ontario; and Dr. Lloyd Thompson, Department of Physics, McGill University, Montreal, Quebec.

GOURMETS ALL and looking ready for an aperitif are (l. to r.): Ed Warren, Technical Service Laboratories, Toronto, Ontario; J. C. O'Neill, Technical Service Laboratories, Toronto, Ontario; George T. Sermon, United Carbon Products Co., Bay City, Mich.; and John Burgener, Technical Service Laboratories, Toronto. Let's keep an eye on those waistlines, fellows.

personal tragedy spurs . . .

ARMCO TECHNICIAN'S INSPIRING STORY

Can you remember what circumstances spurred you into the field of spectroscopy? Of the many hundreds of motivations, none coming to our attention have been more inspiring than that of Mrs. Leslie Canody, Armco Steel Corporation, Middletown, Ohio.

During World War II, Mrs. Canody's husband was severely injured by a flame thrower in Italy. Seriously burning his face, the damage created scar tissue over the pupils of the eyes. Rated totally blind by the U. S. Government, Mr. Canody nevertheless learned the profession of physical therapist at the Red Cross Institute for Blinded Soldiers at Johns Hopkins Hospital. While self-supporting, a time for decision came when news of a new type operation reached them . . . an operation which might restore his sight. In the words of Mrs. Canody, "We just had to try it!"

Each eye had to be operated upon separately and the time for convalescence was lengthy. During this period Mrs. Canody's bills piled up . . . she and her two sons struggled on until she felt she must find a job opportunity to keep the family afloat and to aid the convalescence of her husband. Having great amounts of curiosity and intelligence—but lacking specific job experience—it was with well founded nervousness that Mrs. Canody approached Armco Corporation in Middletown for a job. She wondered just what could she do?

With her guardian angel's wings flapping over her, it just happened that the Armco Research Lab needed a sampler to prepare materials for spectrographic analysis. Would she take the job—you bet! With one slight interruption, Mrs. Canody has spent more than fourteen interesting years in Armco Spectrographic analysis work. Receiving "on-the-job-training" and supplementing this with intensive reading and private research, she now operates spectrographic equipment over a wide range of analyses. In her own words, "The work is a challenge. I do various sample analyses, ranging from ores to finished metals, lubricating oils, or even flu dust."

Our banners are waving for the Armco Corporation and Mrs. Leslie Canody—mother . . . helpmate . . . and a proud member of Armco's spectrographic lab.

MRS. LESLIE CANODY is shown in these photographs hard at work in the spectrography lab of the Armco Corporation, Middletown, Ohio. Her story of family tragedy played the major role in guiding her into spectrography . . . a story that can be an inspiration for all of us.

a report directly from the field . . .

An Electrode System for the Analysis of Flammable Liquids

Richard F. Scheideman and John E. Shott, Jr.

The emission spectroscopy laboratory at the Gulf Research and Development Company at Harmarville, Pennsylvania is equipped with an Applied Research Laboratories 2-meters Production Control Quantometer. This instrument provides for the direct rapid analysis of many liquid materials using the rotating electrode technique. The use of the reflected beam channel of the Quantometer provides an internal standard which consists of a portion of the total radiation emitted by the sample and is an excellent standard for many organic liquids. It also obviates the addition of another element as an internal standard and thus increases the speed with which analyses may be made.

Although this method has been found successful for many types of materials the analysis of flammable liquids has been a problem. The use of even the weakest spark is usually sufficient to ignite the sample and make the analysis impossible or at least inaccurate. Elaborate gas chambers have been devised to provide controlled atmospheres and these are useful for many applications; however, a simple expedient has been used in this laboratory for some time and provides the necessary quenching effect without sacrificing precision. The method consists of using a hollow upper electrode to conduct dry nitrogen directly into the spark gap. The electrode is made by drilling an ⅛" hole lengthwise through a four inch length of ¼" diameter UCP ultra purity graphite. The electrode tip is then surfaced in the cutter used to obtain a 120° included angle tip. The electrode may be resurfaced and used over provided care is taken to remove all contamination. One end of a length of plastic tubing is connected to the upper electrode and the other to a controlled source of dry nitrogen. The sample may be obtained in a small (6/0) Coors porcelain crucible with the rotating electrode (UCP-861) dipping into the liquid. With this small crucible chance of flash-over to other portions of liquid is eliminated and cooling from the gas is adequate to prevent overheating. A gas flow of 10 cu. ft. per hour has been used successfully and may be controlled by adjusting the pressure of the gas in the system.

One of the applications for which this method has been used is the determination of boron in isooctyl alcohol where the concentration range of interest is below 10 PPM. The analysis may be made directly and is rapid and reproducible. There are numerous other applications of this technique to organic liquids, including gasolines.

BIOGRAPHICAL NOTES

RICHARD F. SCHEIDEMAN

B.S., Thiel College (1935); M.S., University of Pittsburgh (1938); Latrobe Steel Company (1935-36); U. S. Navy Metals Laboratory (1939-58); Gulf Research and Development Company, 1958 to date. Emission Spectrographer, Emission Spectroscopy Laboratory Duties: Optical emission and flame photometric methods, development and special problems in optical emission spectroscopy.

JOHN E. SHOTT, JR.

B.S., Carnegie Institute of Technology (1948); Gulf Research and Development Company, 1948 to date. Group Leader, Emission Spectroscopy Laboratory Duties: primarily x-ray emission (fluorescence) spectrography, with some technical assistance with optical emission and flame photometric work. Work consists principally of analytical method development and the handling of special problems associated with the petroleum industry.

(EDITOR'S NOTE: The electrode described in this paper is available from United Carbon Products Company and is designated as UCP 7234.)

IBM's THOMAS J. WATSON RESEARCH CENTER

By Gordon L. Evans and Wilhad Reuter

Just off the Taconic State Parkway, on a wooded hill above New York City's New Croton Reservoir, stands the world's largest known structure dedicated to research in computer technology. This imposing edifice, designed by the late renowned Eero Saarinen, is the embodiment of decisions by IBM Management to consolidate all major East Coast research staff members in one building so as to achieve maximal concentration in the basic research program which IBM is directing toward the problems associated with high-speed computers. Formally dedicated last April as International Business Machines Corporation's Thomas J. Watson Research Center, it has assumed its intended role as the focus of this intensive research effort.

The wide area of research interest involved is apportioned among six Departments:

Mathematical Sciences;
General Science;
Solid State Science;
Engineering Science;
Experimental Machines; and
Experimental Systems.

Responsibility for chemical analytical services to the Research Center lies within the Solid State Science Department in the Analytical Research Group directed by Dr. Richard D. DeMars. Included in this Group are facilities for:

Classical Analysis;
Microanalysis;
Electroanalysis;
X-Ray Emission Spectroscopy;
Optical Emission Spectroscopy; and
Electron Microscopy.

The Analytical Research Group must be prepared at all times to analyze any material of interest to members of the research staff. The wide variety of samples submitted to the group for analysis includes magnetic single crystals and thin films, semiconductors, and photoconductors. The restrictions imposed by techniques used for synthesis of these research samples very often severely limit the size of sample submitted. As a consequence, an ever-increasing demand is evident for determination of very small amounts of intentional or accidental impurities in very small samples of such materials, as for example the determination of silicon in the parts-per-million range in a very pure crystal of germanium weighing only a few milligrams or the estimation of zinc in a complex ferrite sample of similar size. Recent requests for analysis of microgram samples of gallium-indium alloys provide further evidence of this trend.

In such cases as these, the optical emission spectrograph in

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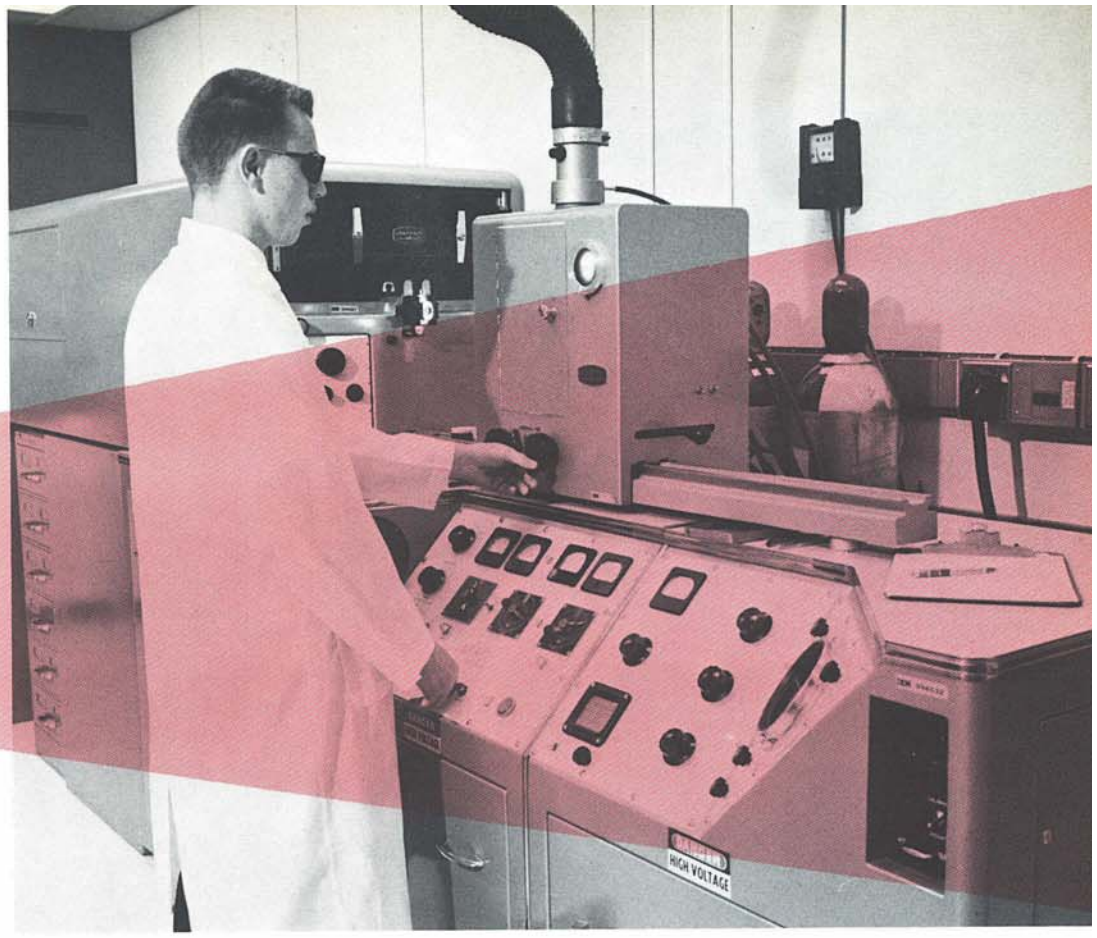
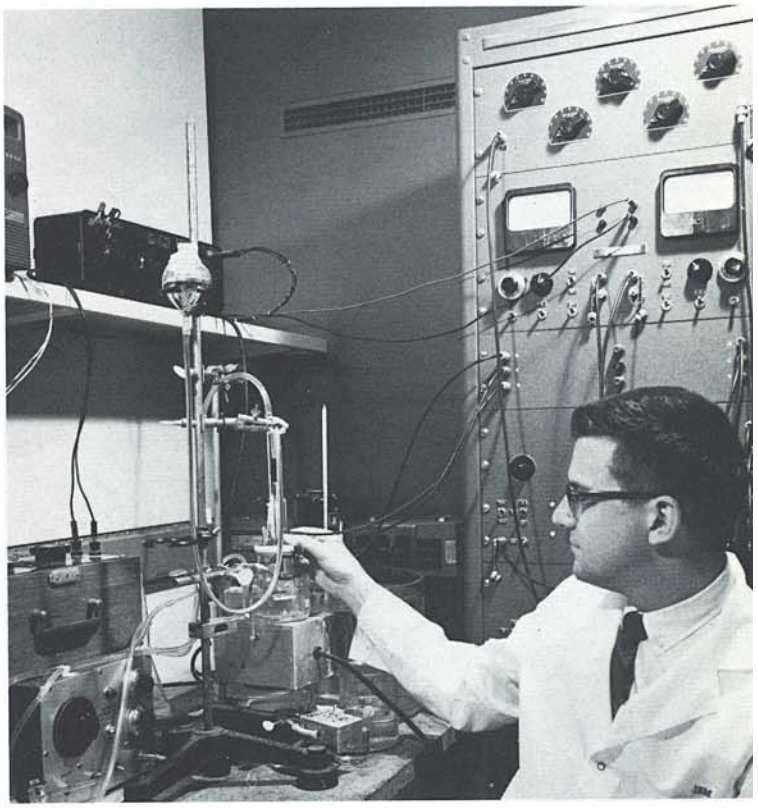


MR. WARNECKE adjusts the electrode gap during a sample burn in this general view of the 3.4 meter Ebert spectrograph.

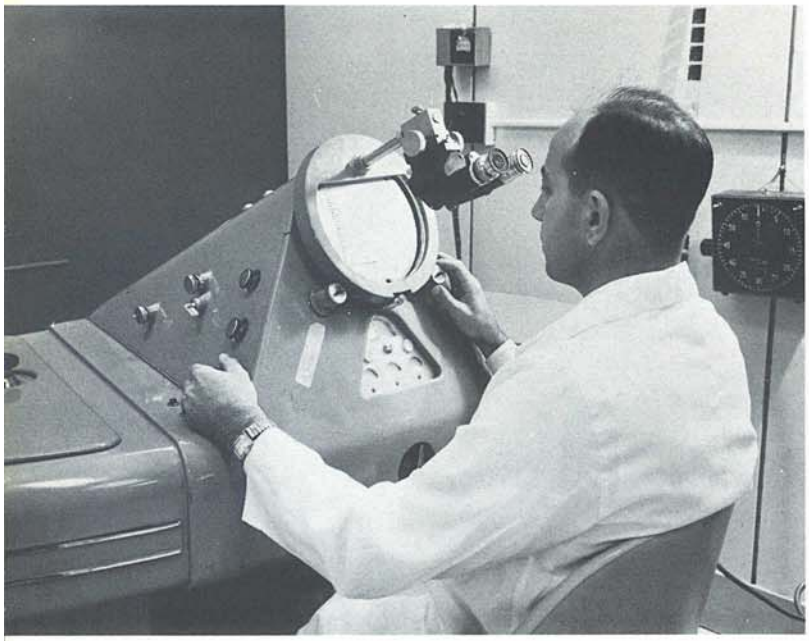
the capable hands of Dr. Wilhad Reuter, with the assistance of Messrs. John Kuptsis, Al Warnecke, and Jack Webber, has proved most useful. This instrumentation comprises a Jarrell-Ash 3.4 meter Ebert Spectrograph with Custom Varisource, a JACo 1.5 meter Wadsworth Spectrograph, a JACo Console Microphotometer for plates and film, a JACo Photoprocessor, a Beckman Model DU Flame Spectrophotometer, and various peripheral apparatus. The versatile source unit allows any of five variable discharge circuits to be selected, while the electrode stand offers the use of other special techniques, such as inert gas atmospheres and the rotating electrode for solutions. The analytical capabilities of this laboratory will be extended by the planned addition of atomic absorption spectroscopy to the list of techniques in use, the 1.5 meter Wadsworth instrument being modified for this purpose.

Most requests to the spectrographic laboratory, while not being in the category of the routine, are met successfully by adaptations of existing methods requiring relatively little development as such. Often, however, particular samples require rather intensive research in order to devise methods giving satisfactory specificity, sensitivity, or precision. Within the past few months, for example, quantitative methods have been developed for the determination of gallium in germanium, of tin and tellurium in bismuth, of various bivalent cations in alkali halides, of rare earth substituents in certain garnet crys-

(Continued on page 10)



DR. DeMARS transfers a mercury drop prior to anodic oxidation on the linear-sweep voltammetric apparatus, which is especially useful where very high sensitivity is required.



OF USE principally to elucidate the physical nature of thin films, the Phillips EM-100 Electron Microscope is shown being operated by Mr. C. F. Aliotta.

MR. WEBBER, at the microphotometer, consults Dr. Reuter regarding a new technique for estimation of gap temperatures.

IBM *(Continued)*

tals, of indium in zinc telluride, and of tin and indium in their admixtures. Semiquantitative methods have likewise been developed for the estimation of ultratrace impurities in metals, semiconductors, and photoconductors. This extensive analytical program, of course, places stringent demands upon the carefully designed and executed program for preparation of standards, proportionate emphasis being placed upon this aspect of the experimental work.

The Analytical Research Group also maintains avenues of collaboration with two other IBM Research locations (San Jose, California, and Zurich, Switzerland) as well as all IBM plants through an organization called the IBM Central Analytical Committee. Under the General Chairmanship of Mr. Gordon L. Evans, the CAC provides a channel of communication among the various analytical groups so as to allow a maximum interchange of information. This coordination provides access to additional techniques, such as electron diffraction, mass spectrography (and vacuum fusion), radiochemistry (activation, dilution, and tracer), and chemical microscopy, as well as coordinating analytical work on a Company-wide basis in such applied areas as standard samples, thin films, and semiconductors.

9th DETROIT ANACHEM CONFERENCE

NINTH ANACHEM AWARD folder being presented to Dr. I. M. Kolthoff, Professor of Chemistry, University of Minnesota (left) by Award Chairman, Dr. Walter Wagner, University of Detroit.

Midwest attention focuses on Detroit conference at Wayne State University.

The continuation of a successful growth pattern was much in evidence at the 9th Detroit Anachem Conference, October 16-18, 1961, held at the McGregor Memorial Conference Center, Wayne State University, Detroit, Michigan.

Under ideal conditions, some fifty excellent papers were given and twenty-eight exhibitors displayed. On Tuesday, October 17th, the coveted Anachem Award in Analytical Chemistry for 1961 was made to Dr. I. M. Kolthoff, Professor of Chemistry, University of Minnesota, and chemist of international acclaim. Another feature was the Conference Address, "Some Surface Effects in Electroanalytical Chemistry", given by Dr. Herbert A. Laitinen, Professor of Analytical Chemistry, University of Illinois.

Conference committees and officers of the Association get our vote for running a good show today and growing for the future.

Successful Eastern Symposium

Record registration, awards, and longer list of exhibitors add up to a success in new surroundings at the Statler-Hilton.

A big increase in attendance plus new surroundings in the Statler Hilton Hotel in New York City, November 15-17, 1961 capped the most successful Eastern Analytical Symposium to date. Officers, committees and registrants alike were pleasantly surprised and pleased with the interest shown.

Registration was indicated at 2060 for a new record. Hundreds of visitors swelled these official figures. The planning was a tribute to the sponsoring organizations: American Chemical Society, Analytical Groups, New York and New Jersey Sections; SAS, Baltimore-Washington, Delaware Valley, New York and New England Sections; and the Metropolitan Microchemical Society.

Highlights of the Symposium were: the SAS Journal Award to W. K. Baer and E. S. Hodge for their paper "The Spectrochemical Analysis of Solutions: A Comparison of Five Techniques" . . . the medal award to Bourdon F. Scribner for outstanding accomplishments toward the advancement of spectrochemical analysis . . . and the change this year from a dinner to two well-attended social mixers.

The imposing list of some eighty-four exhibitors were well pleased with both the interested traffic at their displays and the brightly lighted terraced mezzanine where they located their exhibits. Conveniently adjacent were meeting rooms for the presentation of papers, panels and discussion groups. Our congratulations to all the Conference Committees and to the Officers of the Participating Associations for the planning and the work which so greatly contributed to the success of this Eastern Analytical Symposium and Instrument Exhibit of 1961.

RECEIVING CONGRATULATIONS on his medal award is Bourdon F. Scribner, National Bureau of Standards, Washington, D. C. Happy friends are (l. to r.) Mrs. Orrin B. Clark, Mr. S. Richard Wiley, D. L. Fry, G. M. Research, Detroit, Michigan, and our own Nicholas Grondin.

WINNER of the SAS Journal Award, with W. K. Baer is Dr. E. S. Hodge, Mellon Institute, Pittsburgh, Pa., pictured at the left. Congratulators are (l. to r.) Father J. J. Devlin, S.J., Boston College, Boston; Paul A. Leichtle, Chase Copper & Brass, Waterbury, Conn. and United Carbon Product's Robert E. Gallion.

Rocky Mountain Holds 4th

Once again, the "mile-higher's" met, August 11-12, 1961, at the Park Lane Hotel, Denver, Colorado for the Fourth Annual Rocky Mountain Spectroscopy Conference. Beside many fine papers, an open panel discussion on Infrared Spectroscopy was m.c.'d by Edward Vejvoda, Dow Chemical, Denver and proved extremely popular. Conference Co-Chairmen A. L. Schalge, Ohio Oil, Littleton, Colorado, and Francis S. Bonomo, Denver Research Institute, Denver, Colorado are to be congratulated as are the R.M.S.S. officers. We can never report on this fine meeting without mentioning the Social Hour and Banquet held in the "pool vicinity" at the Park Lane Hotel—boy, that's really living!

R.M.S.S. OFFICERS 1961, looking handsome and pretty are (l. to r.): Treasurer, Richard L. Beno, Dow Chemical, Denver; President A. R. Ronzio, Radiological Research Institute, Inc., Denver; President-Elect, M. W. Skougstad, U. S. Geological Survey, Denver; Secretary, Frances H. Fry, Colorado School of Mines, Denver.

SELDOM a symposium goes by but we hear the phrase, "Fassel at Iowa State". The experience of V. A. Fassel and his concern with the progress of Spectography is most evident in the following biography . . . one which gives us a pardonable measure of pride in this Spectroscopist of the Month feature.

Born, raised and achieving his success in Missouri and Iowa, Velmer is an outstanding example of the scientific progress of our great Mid-West. Born April 26, 1919 in Frohna, Missouri, he spent his childhood in this state and graduated in 1941 with honors in chemistry from Missouri State College where he majored in physics and chemistry. He gained his Ph.D at Iowa State College, Ames, Iowa in 1947 and has, since then, been unswervingly loyal to his school and his chosen field.

His rise at Iowa State was steady, and consistently sprinkled with outside activities. Immediately upon graduation he accepted a position as Graduate Assistant in the Department of Chemistry at Iowa State University. Upon the advent of World War II, "V. A." organized, at the school, an analytical spectroscopy laboratory for the Manhattan Project. The purpose of this lab was to provide spectrographic analyses for the uranium production facilities. After the war, this lab became the Spectrochemistry Section of the Ames Laboratory and Institute for Atomic Research.

From 1947 to 1956, Velmer climbed the ladder within the University from positions of Associate Chemist, Ames Laboratory, and Assistant Professor, Department of Chemistry to that of the former, as well as the new honor of Associate Professor in the Chemistry Department. From 1956 to date, V. A. Fassel has become Senior Scientist of the Ames Laboratory and Professor, Department of Chemistry at I.S.U.

While titles may be confusing, certainly the character of the work is most specific. In the last three positions mentioned, the job involves the direction of the Spectrochemistry Section of the Ames Lab. This section is engaged in three major activities—of which (b) and (c) predominate: (a) spectroscopic service analyses—approximately 10,000 per year; (b) development of spectroscopic methods of analysis for specific AEC purposes; and (c) research in spectroscopy, including training of M.S. and Ph.D candidates. The areas of investigation include conventional analytical emission spectroscopy, fluorescence spectroscopy in optical and X-Ray region, infrared spectroscopy and molecular structure, reactions in high current arc discharges, analytical applications of electrical discharges in rare gases and analytical chemistry of gases in metal. Pioneer research has been carried out on spectroscopic techniques for the determination of gases in metals and on the analytical spectroscopy of the rare earth group of elements.

While such an imposing array of work would be enough to keep any major lab running full tilt, it is but a part of the tremendous contribution V. A. Fassel is making to our field. For instance, his society memberships, which he keeps quite active, include Phi Lambda Upsilon—Chemistry scholastic honorary; Sigma Xi—Research Honorary; American Chemical Society; American Institute of Physics; Optical Society of America; and the Iowa Academy of Science. Some further degree of his involvement can best be judged by the following honors:

1. USA Editor of Spectrochimica Acta, international research journal in spectroscopy.
2. USA representative on Commission on Optical Data, International Union of Pure and Applied Chemistry.
3. Technical Advisor, 2nd International Conference, Peaceful Uses of Atomic Energy, Geneva, Switzerland, 1958.
4. Selected for National Lectureship, Society for Applied Spectroscopy, 1960-61.

SPECTROSCOPIST OF THE

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3. V. A. Fassel, "Quantitative Spectrographic Analysis of Zirconium-Hafnium Mixtures". *J. Opt. Soc. Am. 40,* 742-747 (1950).
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5. R. H. Heidel and V. A. Fassel, "Instrument for Internal Standard Flame Photometry". *Anal. Chem. 23,* 784-788 (1951).
6. R. C. Voter, C. V. Banks, V. A. Fassel, and P. W. Kehres, "Nature of the Hydrogen Bond in 1, 2-Bis (*vic*-dioximo-N,N') Nickel (II) Compounds". *Anal. Chem. 23,* 1730-1738 (1951).
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5. Chairman, Panel on Analytical Methods, Materials Advisory Board, National Academy of Sciences.

The scope of these activities and the quality of his contributions have brought additional recognitions. He was cited for the best presentation of a scientific paper, Sixtieth Annual Meeting, American Society for Testing Materials, June 1957. His work has earned him listings in: American Men of Science; Leaders in American Science; Who's Who in Education; and Midwest Supplement of "Who's Who". World-wide recognition has generated a constant demand for his works, and between 1955 and 1961, he has been an invited lecturer no less than twenty-nine times in various symposia in the United States and Europe.

In utter frankness, and with true scientific objectivity, Velmer readily admits that being past forty has seriously limited his proclivity to mountain-climbing—one of his favorite hobbies. Consequently, it seems, he has devoted more time to his golf game where, as he states, he shoots in the high 70's and low 80's.... and when laws of probability all are acting favorably—even makes par! (Work out your handicaps from here, friends, before you visit him at Ames.) Other preferred ways of relaxing are stereo-photography, square and round dancing. Both he and his lovely wife are active in the affairs of the Collegiate Presbyterian Church where, he states, he graduated upward from Sunday School Teacher, to Deacon, Elder, and now, Clerk of Session. And, we understand from his favorite service club, he's a real, lively Lion.

A great deal more could be written about V. A. Fassel—the man and his accomplishments—but from even this digest it can be understood why we happily nominate him "Spectroscopist of the Month".

M O N T H

V. A. FASSEL

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the grapevine

INTERNATIONAL CONFERENCE PROGRAMMED . . . the International Conference on Spectroscopy and Xth Colloquium Spectroscopicum Internationale will be held June 18-22, 1962, at the University of Maryland, College Park, Maryland, in suburban Washington, D. C. The Conference, being organized by the Society for Applied Spectroscopy with the aid of an International Advisory Board, will include a series of invited lectures on currently important themes in spectroscopy and also contributed papers related to these themes.

Among the speakers will be Prof. J. L. Greenstein, Mount Wilson and Palomar Observatories, Pasadena, on The Role of Spectroscopy in Astrophysics; Dr. T. A. Chubb, Naval Research Laboratory, Washington, on Measurement of Ultraviolet and X-Ray Radiation From Above the Atmosphere; Prof. H. Kaiser, Institut für Spektrochemie und Angewandte Chemie on Critical Review of the Methods and Results of Time-resolved Spectroscopy; Prof. C. T. J. Alkemade, Rijks Universiteit te Utrecht on Excitation and Related Phenomena in Flames; and Dr. Alan Walsh, Commonwealth Scientific and Industrial Research Organization, Melbourne, on Atomic Absorption Spectroscopy.

Dr. Lionel Bellamy, Ministry of Supply, Essex, will discuss Factors Influencing the position of Group Frequencies in Infrared Spectra; Prof. H. H. Günthard, Technische Hochschule, Zürich, Interrelated Problems in Nuclear Magnetic Resonance and Molecular Spectroscopy; Prof. J. H. Jaffe, Weizmann Institute of Science, Rehovoth, Spectral Line Shape and Molecular Interaction; and Dr. R. Norman Jones, National Research Council, Ottawa, Comparative Studies of Infrared and Raman Group Frequencies and Their Applications.

Dr. A. J. Ahearn, Bell Telephone Laboratories, Murray Hill, will report on Vacuum Spark Mass Spectrographic Analysis of Solids; Dr. John Beynon, Imperial Chemical Industry, Ltd., Manchester, Correlation of Mass Spectra with Molecular Structure; Prof. Clyde Hutchinson, University of Chicago, Electron Spin Resonance; Prof. Rex Richards, Oxford University, Applications of Nuclear Magnetic Resonance; and Dr. David Whiffen, National Physical Laboratory, Teddington, Electron Spin Resonance and Free Radical Structure.

Dr. B. Vodar, Centre National de la Research Scientifique, Bellevue, will describe Extreme Ultraviolet Spectra; Dr. D. A. Ramsay, National Research Council, Ottawa, Spectra of Gaseous Free Radicals; Dr. B. P. Stoicheff, National Research Council, Ottawa, on The Application of Optical Masers to Spectroscopic Studies. Dr. Jean Philibert, Institute de Rechercher de la Siderurgie, St. Germain-en-Laye, and Prof. V. E. Cosslett, University of Cambridge, will report on studies concerning X-ray spectra.

Authors desiring to submit a 20-minute paper for inclusion in the full program of the meeting should forward a title, names of authors, and a 250 to 300-word abstract before December 31, 1961. This information, as well as requests for further details on the meeting, should be sent to Bourdon F. Scribner, General Chairman, International Conference on Spectroscopy, 1962, National Bureau of Standards, Washington 25, D. C., U. S. A.

A status symbol is anything you can't afford, but did.
—*Harold Coffin in Look*

INTERESTING NEW JOB has been accepted by our good Canadian friend, L. R. Pittwell, Chief Chemist, Dominion Magnesium, Ltd., Haley, Ontario. Intrigued by the foreign field, he has accepted the Assistant Professorship of Chemistry at the University College of Addis Ababa, Ethiopia. Our congratulations and wishes for an outstanding success along with a friendly rejoinder to keep all his friends posted about his progress.

RCI AT OTTAWA . . . we saw our good friends, Jason L. Saunderson and Paul C. Hutchinson of Research and Controls Instruments, Inc., Woburn, Mass., enjoying themselves with their Canadian friends. Showing their instrument line for the first time in Canada, we wish them rapid and continuous success with RCI.

PITTSBURGH PLANNING RECORD-BREAKER for the thirteenth Conference . . . and we know they'll succeed. Looked upon, in the minds of most of the nation's spectrographers as the "big one", the Pittsburgh Conference will be held at the Penn-Sheraton Hotel, Pittsburgh, Pa., from March 5 to March 9, 1962.

Striving for an even greater quality in papers, the number will again be limited. More than 100 exhibitors will display again in 1962 to furnish the widest array of spectrographic products on view at any conference. The exposition is planned to give registrants an opportunity to see the latest in chemicals and analytical equipment plus providing personal discussion with key manufacturing people.

Masterminding the "big show" in spectroscopy and analytical chemistry are:

The Program Committee—

Chairman	Dr. C. F. Glick
Chairman-Elect	Dr. W. A. Straub
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Electron Paramagnetic & Nuclear Magnetic Resonance	Dr. B. Shapiro
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X-Ray Spectroscopy	Mr. J. E. Scott
Printing	Mr. Norman Walker

The Exposition Committee—

Chairman	Mr. R. B. Fricioni Allegheny-Ludlum Steel Brackenridge, Pennsylvania

In these capable hands rests the success of 1962 in Pittsburgh, but from all indications, they've done it again and our motto for 1962 is "Plan On Pittsburgh"—we'll be seeing you there!

NO OTHER TRIP seems to be enjoyed more by our president George Sermon and his traveling companion, Carl Leistner, than the one to Ottawa. First, from Michigan it affords a beautiful scenic trip across Michigan and Ontario just when the Fall colors are at their height. This year, their routing took them through the beautiful Algonquin Forest where temptation overcame them and they "roughed it" by charcoal broiling some sirloin steaks (seasoned to precisely the proper shade) out-of-doors. From the enthusiastic comments about this barbecue we are forced to admit the food must have run a close second to the incomparable Madame Burger's.

NEW CAAS OFFICERS for next year are:

President	W. J. Bennett Northern Electric Co., Ltd. Montreal, Quebec
Vice President	E. G. Herbert Algoma Steel Corporation Sault Ste. Marie, Ontario
Secretary	T. W. M. Davis Food & Drug Directorate Ottawa, Ontario
Treasurer	Shier Berman National Research Council Ottawa, Ontario

We are most happy to be able to include this news in this issue along with our sincere congratulations and confidence that the Ninth Ottawa Symposium will be the best yet!

At least once in her life, every woman is dressed on time—unless, of course, she never gets married.

—Francis O. Walsh in Family Weekly

MID-AMERICA SYMPOSIUM NEWS comes our way from our esteemed friend, Jay A. Sheinkop, Continental Can Co., Chicago. The dates have been jelled as April 30 through May 3, 1962 at the world's largest hotel, the Conrad Hilton on Chicago's lakefront.

This will be the 13th Annual Mid-America Spectroscopy Symposium and will be sponsored by the Chicago Section SAS in cooperation with the Cleveland, Detroit, Indianapolis and St. Louis Sections. It was this joint cooperation, undoubtedly which helped score such an impressive growth last year and certainly, in 1962, this growth pattern should emerge even stronger and more successfully.

According to Doctors John R. Ferraro and Joseph Ziomek, Symposium Coordinators, new sessions on Vacuum Ultraviolet, Gas Chromotographic Preparation of Samples, and NMR Workshop—all of interest to spectroscopists—will be introduced in 1962. Original papers on the most recent advances in Infrared, Raman, Optical Emission, X-Ray, General Absorption, NMR, EPR, and Atomic Absorption will be presented. Also, the popular Introductory Clinic in Infrared Spectroscopy will be continued. Problem clinics, seminars, and an exhibit featuring the very latest instruments and equipment will be added highlights.

Further information may be obtained from Dr. John R. Ferraro, Argonne National Laboratory, 9700 South Cass Avenue, Argonne, Illinois. Truly, this is the "Opulent Symposium" in the magnificent Conrad Hilton Hotel. We know there are hundreds of spectroscopists eagerly anticipating the 1962 Mid-America Symposium . . . and, include us IN!

A NEW POSITION has come along to one of our good friends, Dr. C. L. Grant, and we want to extend our heartiest congratulations and wishes for every success. Dr. Grant has accepted a position as Research Associate Professor at the Engineering Experiment Station, University of New Hampshire, Durham, N. H. Dr. Grant received his Doctorate at Rutgers University, New Brunswick, N. J. For the past several years he has been in charge of the Analytical Spectroscopy Laboratory for the New Jersey Agriculture Experiment Station at Rutgers University and he will be involved in similar activities at his new post.

LET'S ALL JOIN THE SAS . . . to help advance and disseminate the knowledge of spectroscopy in the widest sense of the term. The worthwhile purpose of the Society for Applied Spectroscopy is to advance the professional standing and growth of its members; to coordinate the efforts of its members individually and by Local Sections; and to promote a close bond among its members and interrelated societies. If you're not "in" the SAS, join up today by filling out and mailing the membership form below. It's a terrific bargain, for $7.00 not only brings you a Regular Membership, but a subscription to Applied Spectroscopy! Don't delay—do it now.

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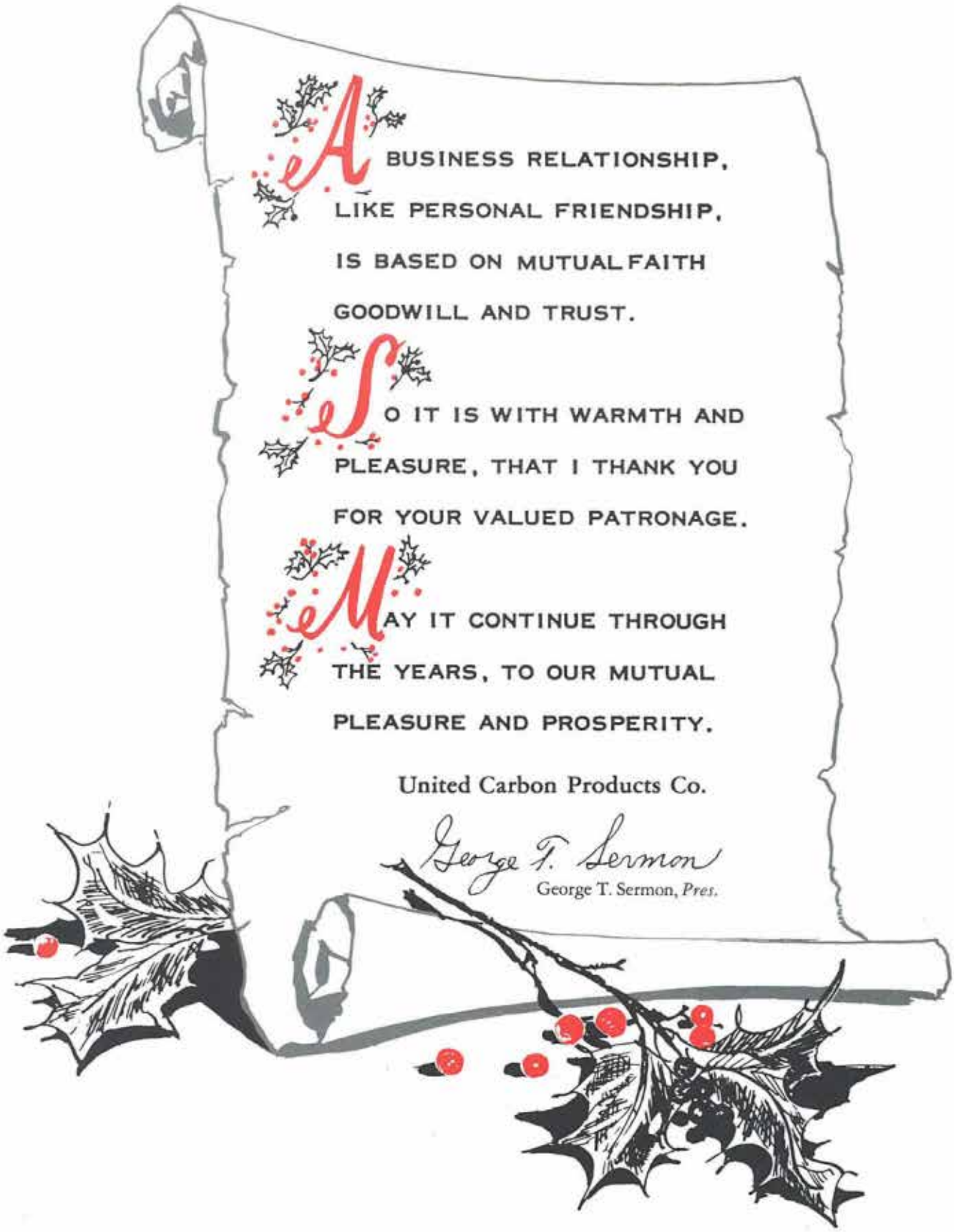
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LIKE PERSONAL FRIENDSHIP,
IS BASED ON MUTUAL FAITH
GOODWILL AND TRUST.
SO IT IS WITH WARMTH AND
PLEASURE, THAT I THANK YOU
FOR YOUR VALUED PATRONAGE.
MAY IT CONTINUE THROUGH
THE YEARS, TO OUR MUTUAL
PLEASURE AND PROSPERITY.
United Carbon Products Co.
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LITHO IN U.S.A.