Writing - Talks by Bader

[Publicity for lectures by Ormond Bader]

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DER LEHRSTUHL FÜR KUNSTGESCHICHTE AN DER UNIVERSITÄT AUGSBURG
LÄDT FREUNDLICHST EIN ZU EINEM VORTRAG VON

DR. RER. NAT. ALFRED BADER (MILWAUKEE)

ÜBER DAS THEMA

BIBLISCHE THEMEN IN DER HOLLÄNDISCHEN MALEREI

AM MONTAG, DEM 1. JUNI 1992, 18 UHR C. T., HÖRSAAL 2107
UNIVERSITÄTSSTR. 10, UNIVERSITÄT AUGSBURG

PROFESSOR DR. HANNO-WALTER KRUFT

Please join us next week for a (bring your own)
Brown Bag Luncheon featuring:

"Credit where credit is due: Kekulé, Couper, Loschmidt, and Anschütz"

Presented by: Dr. Alfred Bader

Date/Time: Wednesday, May 26th at 12:00 Noon

Location: Chemical Heritage Foundation
315 Chestnut Street
Philadelphia, Pennsylvania

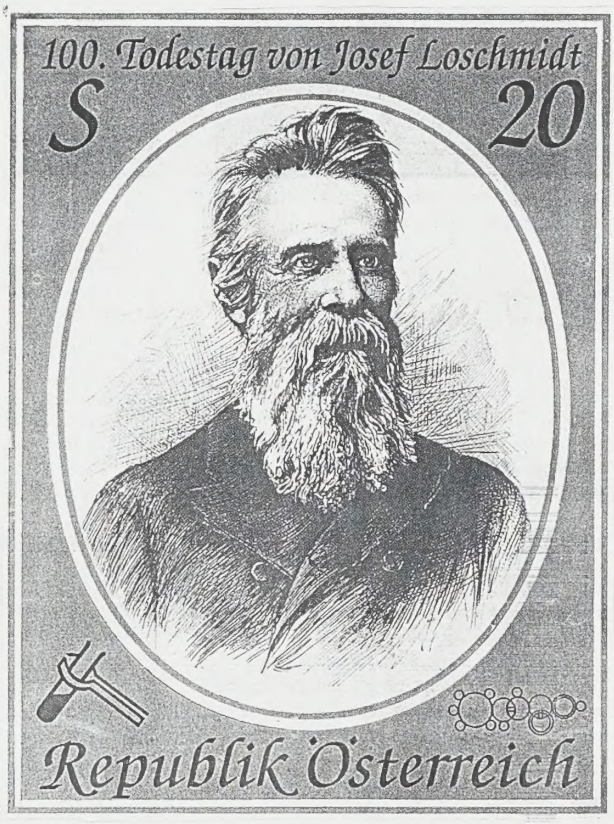
RSVP (acceptances only) to:
Suzanne Morris
(215) 925-2178, extension 227

Alfred Bader was born on 28 April 1928 in Vienna, Austria. After receiving an undergraduate degree from Queen's University in Ontario, Bader completed his Ph.D. work in synthetic organic chemistry in the lab of Louis F. Fieser at Harvard. He began his career in research chemistry at the Pittsburgh Plate Glass Co., and in 1954 Bader left to devote himself full-time to his then-struggling fine chemicals company, Aldrich. In the forty years he spent at Aldrich, now Sigma-Aldrich, Bader built the little company into a giant in the research chemicals industry.

Bader has won numerous awards and honorary degrees, including the 1997 AIC Gold Medal and inclusion in the ACS "Top 75 Distinguished Contributors to the Chemical Enterprise in the Last 75 Years" in 1998. His autobiography, "Adventures of a Chemist Collector," was published by Weidenfeld and Nicholson in 1995.

Credit were credit is due

The discoveries of August Kekulé Archibald Scott Couper and Josef Loschmidt



Austrian stamp issued in 1995 in honour of the chemist Josef Loschmidt

a talk by Dr Alfred Bader (Milwaukee)
on Tuesday 7 December at 5.15 pm in Arts A155

combined German and Chemistry Research Colloquium ***open to all who are interested***

Recent and Forthcoming Events

German Research Colloquium

The colloquium takes place on Tuesdays at 17.15 in the Arts Building, Room A155, at the University of Sussex and is open to anyone who is interested.

2nd November Antony Lerman (Institute for Jewish Policy Research, London)
'Antisemitism at the end of the 20th century: An Old Prejudice in a New Context'

9th November Dorothea McEwan (London)
'The Holdings of the Warburg Institute as a Mirror of Refugee Experiences in the 1930s'

16th November Artistic Responses to the Holocaust: A Panel Discussion led by the artist Ralph Freeman and the art historian Monica Bohm-Duchen
(Gardner Arts Centre: in conjunction with the Exhibition-see below)

23rd November Monica Lowenberg (Sussex)
'The Educational Experiences of German-Jewish Teenagers in Germany and Britain during the 1930s'

30th November Eva Kolinsky (Wolverhampton)
'Living in Germany: Experiences and Identities of Turks and Jews in Germany, 1945 to the Present'

7th December Alfred Bader (Milwaukee)
'Credit Where Credit is Due: The Discoveries of August Kekule, Archibald Scott Couper and Josef Loschmidt'

Related Events

- 11th November-4th December at the Gardner Arts Centre, University of Sussex:
'Foundations and Fragments', an exhibition of the work of Ralph Freeman

- Saturday 27th November 19.30 at the Leo Baeck (London) Lodge, 11 Fitzjohn`s Avenue, London NW3: a talk by Edward Timms on 'Freud, the B`nai B`rith "Vienna" Lodge and the Interpretation of Dreams'

For further details please contact Diana Franklin on: 0181 381 4721 or email: Diana.Franklin@btinternet.com

Freud: Dreaming, Creativity and Therapy

The Centre is organizing a conference on 'Freud: Dreaming, Creativity and Therapy' to mark the centenary of *Die Traumdeutung*, which will be held at the Tavistock Centre in London from 4 - 5 December 1999. The aim is to promote a dialogue between practising therapists and historians of psychoanalysis in order to undertake a reappraisal of the significance of dream interpretation both for clinical practice and for cultural studies. Speakers will include Stephen Frosh (Tavistock/Birkbeck) with a paper on 'The Dream and Jewish Memory', Ritchie Robertson (Oxford) on 'Freud and Schopenhauer on Dreams', Morton Schatzman (London) on "Thanks for the Memories": Problem-solving in Dreams' and Laura Marcus (Sussex) on 'Dreaming and Cinematographic Consciousness'.

For further information, please contact the Tavistock Clinic, 120 Belsize Lane, London NW3 5BA, tel. 0171 447 3829/3715. Friends of the Centre qualify for the concessionary registration fee of £70.

Medallion showing Oedipus solving the riddle of the Sphinx

The 'Kindertransport' Reunion and the Educational Experiences of Refugees

Monica Lowenberg is the daughter of a German-Jewish father who at the tender age of sixteen was fortunate enough to escape Nazi Germany with the help of the Berlin ORT school. Apart from her grandmother the rest of her Jewish family perished in the various camps or were shot by the SS. It is perhaps therefore no great surprise that this dreadful chapter in man's history that is so interwoven with her families is one that interests and haunts her.

Monica writes:
Three years ago I was very generously awarded the Rolf Schild Scholarship to support me in studying for an MA and then a DPhil at the Centre for German-Jewish Studies. I am now in the final year of my doctorate which focuses on German-Jewish refugee teenagers who were transferred en bloc to Britain in the late 1930s with their schools, the Jawne Gymnasium Cologne and the ORT school Berlin. The research explores the lives these teenagers constructed for themselves once in England and, amongst other things, questions to what extent an academic training offered at the Jawne and practical training at the ORT influenced career choices. The two schools are particularly noteworthy as Dr Erich Klibansky (Headmaster of the Jawne) and Colonel J.H. Levey (British ORT) arranged for the transportation and exit visas of their pupils single-handedly.

From 1938 -1939 Britain became home to just under ten thousand Jewish children from Nazi Germany, Austria and Czechoslovakia. These children were rescued under the umbrella of the 'Kindertransport', which from 15th to 17th of June this year celebrated its sixtieth anniversary. Over a thousand 'Kinder', some of them unofficial 'Kinder' like the Jawne pupils, most of whom are now in their early sixties and seventies, congregated in London for the three-day reunion to remember their escape and those who were less fortunate. The occasion was skilfully organised by Bertha Leverton and included moving and thoughtful speeches by various dignitaries such as the Chief Rabbi Dr Jonathan Sacks; Lord Attenborough, Chancellor of the University of Sussex; Lord Williams, Minister of State, the Home Office and Lord Janner. Lord Attenborough's speech was particularly memorable due to it being so personal and emotional. His parents had taken an active role in the caring and housing of refugee children from zones of conflict. In 1939 they decided to take in two little German-Jewish 'Kindertransport' girls, Irene and Helga, who lived with the Attenboroughs for eight years. Their parents were trapped in Europe and sadly did not survive.

In comparison to the first 'Kindertransport' reunion which took place ten years ago, the large numbers of 'Kinder' that attended the various talks given by historians, educationalists and therapists, revealed a need to now not only reminisce and in some cases re-establish familial ties, but also attempt to understand on a more objective plane what had actually happened to them in their youth. The first generation were happy to see a number of second generation and even third and fourth attend the function, participate in the gala concert, and discuss the possibility of continuing the excellent and cathartic work Bertha and her colleagues have started.

Inauguration of Centre's Archive and Research Unit

On Thursday 27 February 2000, to coincide with the University of Sussex degree ceremony, the Chancellor Lord Attenborough will be formally opening the Centre's Archive and Research Unit. The unit is situated in the newly extended and refurbished University library building, originally designed by Sir Basil Spence. It is adjacent to the renowned Mass Observation Unit and can take advantage of the facilities offered by the University library and its support infrastructure.

The Archive and Research Unit provides dedicated storage and space allowing the systematic study of original materials, particularly papers brought to Britain by members of refugee families, which illuminate the history of German-Jewish relations since the Enlightenment, the experiences of persecution during the Nazi period, and the processes of exile and resettlement.

The new unit has space for five researchers to work at any one time and is flexibly designed so that the space can be used for small teaching seminars or discussion groups. This new venture seeks to combine best traditional archival practice with a modern research facility, using leading-edge technology to meet the needs of researchers in the 21st Century. The unit has modern computers with high-speed links to the Internet together with digital scanning and imaging equipment. The cost of the new computing equipment was covered by a grant from the New York-based Conference on Jewish Material Claims against Germany. Individual gifts have made it possible to install handsome new bookcases and acquire key works for the reference library.

The interdisciplinary and cross-cultural structure of Sussex University is reflected in a diversity of projects at the Archive and Research Unit, where work-in-progress spans a wide range of activities - from investigating antisemitism and racism on the Internet to cataloguing the original works of Daghani - an artist and Holocaust survivor. Visitors are welcome to visit the unit and a small number of tickets are available for the opening ceremony.

Please contact Diana Franklin at the address below if you would like to arrange a visit or obtain further information.

For further Information about the Centre and joining the Friends

please contact Diana Franklin,
Centre for German-Jewish Studies,
University of Sussex, Brighton BN1 9QN,
University: Tel 01273 678771,
Fax 01273 678495
London: Tel/Fax 0181 381 4721
Email: G-J-Centre@sussex.ac.uk

Centre for German-Jewish Studies on the Internet

Information on the Centre's activities is available on the Internet. It can be accessed via:
http://www.sussex.ac.uk/Units/cgjs

Centre for German-Jewish Studies

NEWSLETTER

University of Sussex

No 9, November 1999 Editor: Nina Brink ISSN 1265-4837

Progress Report

The Turn of the Century

'The intellectual concerns of Habsburg Vienna are ours no longer', observed a reviewer of Stanley Kubrick's recently released film *Eyes Wide Shut*. The film is set in contemporary New York, but the scenario is based on Arthur Schnitzler's *Traumnovelle*, a story about turn-of-the-century Vienna which the reviewer regarded as 'preposterous'. The series of conferences organized by the Centre for German-Jewish Studies has adopted a different approach, taking as its starting-point the career of Theodor Herzl. Our volume on *Theodor Herzl and the Origins of Zionism* explored the enduring significance of his political vision, while the more recent conference on Karl Kraus served to bring out the prophetic qualities of the critique of the mass media undertaken in *Die Fackel*. The centenary of the first publication of Freud's *Traumdeutung* will provide the focus for our next major conference, to be held at the Tavistock Centre in London on 4-5 December.

One of the assumptions underlying this programme of research is that German-speaking Jews experienced the tensions between secular modernism and cultural memory with a particular intensity. 'Progress' is a concept which Kraus consistently put into scare quotes, while Freud observed that most of his patients were 'suffering from reminiscences'. This sense of the active force of memory may have specifically Jewish origins, but it forms a component in the culture of the Viennese turn of the century which directly connects it with our own. Freud described himself as a 'godless Jew', but it was the 'Vienna' B'nai B'rith that he chose as the first audience for his theories about the universal significance of dreaming. The Freud centenary will thus appropriately be marked by a lecture at the Leo Baeck Lodge in London on 27 November, as well as the conference at the Tavistock Centre. Further details of these and other forthcoming events are given overleaf.

Karl Kraus Conference

Jews feature prominently in the history of journalism, and the magazine *Die Fackel*, founded in Vienna in 1899 by the satirist Karl Kraus, forms a significant landmark. Kraus became the great critic of journalistic malpractice and political propaganda, and his enduring influence formed the subject of a conference organized by the Centre in London from 7 - 10 September in conjunction with the Austrian Cultural Institute and the Institute of Germanic Studies. The event was attended by scholars from ten different countries.

Kraus is recognized as one of the most subtle of German stylists, and the conference began with the presentation of a comprehensive new dictionary of his metaphorical usage, the *Wörterbuch der Redensarten*, which has been produced by a team of researchers in Vienna under the editorship of Werner Welzig. The six million words of *Die Fackel* have been transposed into electronic format, and this has made it possible to develop more sophisticated modes of analysis, as demonstrated by the leader of the research team, Evelyn Breiteneder.

A series of papers based on historical and archival research analysed the reception of Kraus's work in different countries, from the Czech Republic to the United States. Gilbert Carr (Trinity College Dublin), joint organizer of the conference, delivered a paper on Kraus and the Vienna Burgtheater, while Peter Hawig (Recke) reassessed the satirists's contribution to the revival of Offenbach. Julian Johnson (Sussex) traced his influence on the music of Schoenberg's circle and Alan Janik (Innsbruck) explored parallels with Wittgenstein. George Avery (Swarthmore) reconstructed Kraus's involvement in the German Expressionist periodical *Der Sturm*, while Christian Jäger (Berlin) explored the links with Walter Benjamin. There was also an emphasis on the affinities between Kraus's critique of the press and current theories of the globalizing effects of the media. Silke Hassler (Vienna) demonstrated the connections between his analysis of propaganda during the First World War and techniques of distortion used in recent news coverage on Yugoslavia.

The question of Jewish identity was discussed by Paul Reitter (Berkeley), who took Wagner's essay on 'Jews in Music' as his starting point. Wagner notoriously asserted that Jews were incapable of original creativity and could only imitate the art of others - hence the journalistic facility of Heine. Kraus, too, saw journalistic writing as a symptom of imperfect Jewish assimilation, but his aim was to develop a style that transcended these limitations. Hence the profundity of his reflections on language - a theme taken up in papers by William Dodd (Birmingham), who analysed Kraus's influence on linguistics, and by Edward Timms, who traced the religious resonance of the satirist's writings back to the creation myths of Genesis.

A further highlight was the recital by Michael Rogers of scenes from Kraus's satirical drama *The Last Days of Mankind*, based on his own translations. Among those who attended the conference were representatives of the BBC, the *Times Literary Supplement* and the *Frankfurter Allgemeine Zeitung*; Pavel Seifter, Czech Ambassador in London; Robert Wistrich, Director designate of the new Austrian Studies Centre in Jerusalem; and Emil Brix, Director of the Austrian Cultural Institute, which generously supported the conference.

Research News

Academic Advisory Board Meeting


Nr. 1 Wien, Anfang April 1899

DIE FACKEL

HERAUSGEBER:
KARL KRAUS.

ERSCHEINT DREIMAL IM MONAT.

PREIS 10 Kr. WIEN.

Nachdruck nur mit Angabe der Quelle »DIE FACKEL« erlaubt.

Original cover design of ***Die Fackel***

The annual meeting of the Academic Advisory Board took place on the eve of the Karl Kraus Conference on 7th September 1999 at the German Historical Institute in London. The Board was saddened to note the death of Lord Beloff who had been a most active and supportive member of the Advisory Board since its inception.

The Annual Report for 1998-99 was presented by the Director of the Centre, Edward Timms, and particular attention was drawn to the management consultant's work that had been carried out with the co-operation of the Centre during the preceding months. The recommendations that have been received are intended to improve the efficiency and productivity of the Centre and will be implemented during the coming academic year.

The Centre's revised Development Strategy was discussed and the Board noted with satisfaction the increased number of staff and projects. It was agreed that stronger links should be forged with other academic organisations, and members of the Board suggested the names of some Centres in Germany with whom links could be established. The Centre was congratulated on the success of the Metternich Conference. The next conference will be 'Intellectual Migration and Cultural Transformation: The Movement of Ideas from German-speaking Europe to the Anglo-Saxon World', to be held at the University of Sussex in September 2000. This will include papers on the innovative achievements of refugees in fields such as Philosophy, Psychology and the History of Art.

After the close of formal business, two of the Centre's Research Fellows, Ulrike Walton-Jordan and David Groiser, presented short reports on work-in-progress which were well received. Ulrike described the methods involved in compiling a computerized catalogue of archival materials, while David outlined his project on the 'Concept of Judgement' and its links with German-Jewish thinkers.

In addition to members of the Support Group the meeting was attended by Professor Peter Pulzer, Chairman, (Oxford University), Dr Anita Bunyan (Cambridge University), Professor Ritchie Robertson (Oxford University), Professor John Röhl (Sussex University) and Professor Robert Wistrich (Hebrew University).

Belsize Square Synagogue

As a Research Fellow at the Centre for German-Jewish Studies Bea Lewkowicz will be engaged in researching the history of the Belsize Square Synagogue in London between 1939 and 1999. Since the synagogue is one of the institutions founded by and still very much associated with refugees from Nazi Germany, this study will contribute to a better understanding of the refugee experience in Britain within the boundaries of a community. This research sets out to explore the role of religion and community in the process of migration and re-settlement.

After studying History and Social Anthropology at the University of Cologne, Bea completed an M.Phil in Social Anthropology at Cambridge University. Subsequently she worked as Research Fellow at the 'Rethinking Nationalism Seminar' at the Institute for German History at Tel Aviv University. For the last three years she has worked as an interviewer for the 'Survivors of the Shoah Visual History Foundation' and is now completing her PhD at the London School of Economics.

This new project is funded by the Belsize Square Synagogue. It forms an important new development within the Centre's overall strategy of co-operative partnerships with kindred institutions.

Racism on the Internet

The Centre for German-Jewish Studies has recently appointed Stella Rock to work with Brian Hanrahan on the 'Monitoring Racism on the Internet' project. The Project, generously funded by Marks & Spencer, is exploring ways of monitoring the impact of electronic racist propaganda - in particular Holocaust denial material - on students. Plans include a broad survey of the material accessible on the Net, a survey of UK University policies regarding access to this material, and group work with students studying the Holocaust. Since the project's start date in May 1999, Brian has already compiled and assessed a list of over 250 racist sites, while Stella is currently exploring the under-researched material from Eastern Europe - mostly Russian and Ukrainian nationalist and neo-Nazi sites.

The progress of this project is monitored by a Steering Group, whose membership includes Lewis Goodman OBE, a leading member of the London Support Group, and Antony Lerman, Executive Director of the Institute for Jewish Policy Research.

Students or teachers who have encountered racist materials on the Internet are invited to share their experiences with us by e-mail: S.K.Rock@sussex.ac.uk

Q: Who discovered the structure of Benzene?

A: August Kekule´

Do you believe he really had a dream?

Wait until you listen to

Dr. Alfred Bader
Founder, Aldrich Chemical Co.

Presenting an investigative report

"Richard Anschutz, Archibal Scott Couper, and Josef Loschmidt: A Detective at Work"

Monday, April 22, 2002

4:30 PM

Room 200 WTHR

Interested in starting your own business?

Do you know what it takes to be successful?

Listen to someone who has been very successful

Dr. Alfred Bader
Founder, Aldrich Chemical Co.

Talks on the

"History of Aldrich Chemical Co."

Monday, April 22, 2002

1:30 PM

Room 160 WTHR

LECTURE ANNOUNCEMENT

Opening Friday, April 9th, through May 23rd, the Milwaukee Art Center will present a major Old Masters exhibition entitled "The Bible Through Dutch Eyes", to include seventy Dutch seventeenth century paintings depicting Old Testament themes.

Two lectures will be offered free to the public at 8:00 P.M., in the Manegold Theatre, Upper Level --

1) TUESDAY, APRIL 13 - "The Old Testament As Seen By Rembrandt And His School"
Dr. J. W. von Moltke, distinguished German art historian and retired Director of the Museum der Stadt Bielefeld, will present a scholarly exploration of the subject.

2) TUESDAY, MAY 11 - "The Bible Through Dutch Eyes: Some Iconographic Problems"
Dr. Alfred Bader, Milwaukee collector and Guest Curator for the exhibition, will explore informally the religious and legendary subjects.

(Reservations are not required)

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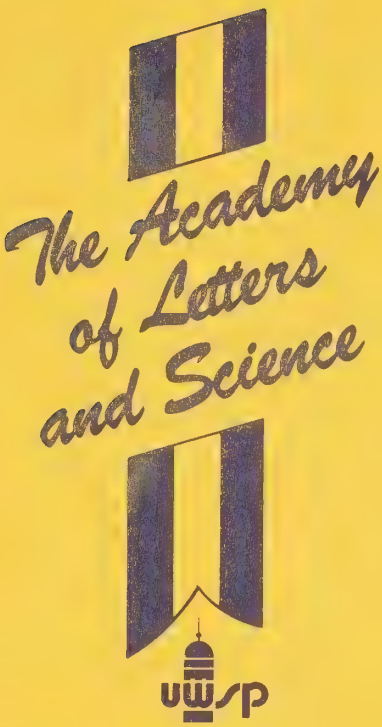
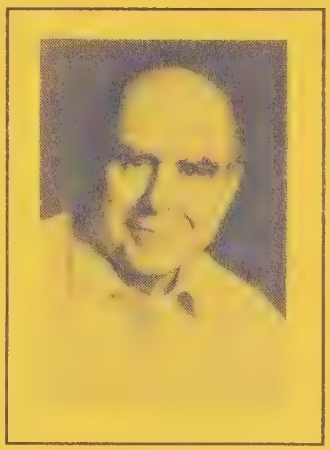


On the Unimportance of A Liberal Arts Education

An address by
Dr. Alfred Bader

To the Academy of Letters and Science
University of Wisconsin-Stevens Point
October 1, 1987



ALFRED BADER
Chairman
Sigma-Aldrich
Corporation

On the Unimportance of A Liberal Arts Education

An address by Dr. Alfred Bader

To the Academy of Letters and Science University of Wisconsin-Stevens Point

Ask a thousand students on any campus in the country why they are attending a university, and more than 900 will reply "to acquire a profession"—to become an engineer, a scientist, a medical person, to study business administration and so on. And what do they think of a liberal arts education? Generally little, unless they want to become teachers. But doesn't everybody know that teachers earn less than plumbers and auto mechanics?

So it was with me, when I entered a university in Canada. I chose engineering because my grandfather had been an engineer, and so had the man who adopted me. I am totally unmechanical, just not interested in motors and very poor in math. But I loved chemistry, organic chemistry, and so I chose chemical engineering, emphasizing chemical. Engineers then as now looked down on the students in arts—soft, sissy types, rich perhaps, no need to work.

It took a while to realize how wrong we were—with me that conversion started at a university but wasn't completed until years later. It began innocently enough: by my third year in college I had discovered the joys of dating—an expensive pastime, and so by March of that year I was short of cash. Looking through the university calendar, I saw a scholarship in public speaking—$50! How silly could I get? Public speaking—and me with a thick German accent! Still, $50 was $50, and so I tried and won. One of the judges, the vice principal of Queen's University, urged me to join the debating society—something engineers just never did. Sissy stuff, close to liberal arts. Still, I joined and that year won the Dominion of Canada debating championship—German accent and wartime notwithstanding.

Public speaking. Debating!

Perhaps nothing in life is as essential to success as the ability to express yourself clearly and succinctly. You wouldn't believe how many reports I have read by Ph.D.'s in chemistry in just awful English. There is such beauty in brevity, yet often technically well-educated people neither write nor speak well. And often they have no idea just how bad they are.

As I said, at first to me, such liberal arts pursuits had purely utilitarian uses. Fifty dollars for the public speaking scholarship, the transient glory of winning debates. Then, through two bits of luck the enjoyment of liberal arts dawned on me.

One was the opening of a two-volume work of the collected essays of Thomas Babington Macaulay. What language, what arguments, what history. I still own those two volumes, which I had carefully bound in paper, the Scotch tape to hold it now turned dark brown. The thrill of opening it now—after reading it from cover to cover several times in the 1940s—is much like seeing an old friend in a museum, a great Dutch painting not seen for many years. Much later I read somewhere that Macaulay was a second rate historian—that many of his "facts" were in fact mistaken. Sydney Smith said of Macaulay that he not only overflowed with learning, but stood in the slop. Pfui on you, harsh critic. His language, his arguments are brilliant—how often have I said to myself, "If only I could speak and write like that!" And thinking that, I would try.

The other bit of luck came at Harvard. At Queen's there had been no art history, no art gallery. At Harvard there was a great museum, and great teachers—men like Jakob Rosenberg, lecturing on Rembrandt. I remember once, I think in 1948, I was leaving the chemistry department in the middle of the day, and my chemistry professor, Louis Fieser, asked me where I was going. I said, "Over to the Fogg where Jakob Rosenberg is lecturing on Rembrandt." Fieser replied in mock disgust, "Alfred, you haven't made up your mind yet whether you want to be a chemist or an art historian." Well, some forty years later, I still haven't and I am much the happier for it.

There is such pleasure in looking at a great painting—it is really indescribable. I am sure that my blood pressure goes up, my pulse quickens, I feel good all over. These physical manifestations are very selective: old masters, of all kinds, not just Dutch—they work. Late Picassos and abstract art—no effect. Some 19th century art, yes, and some no. Some realistic works, like those of Bouguereau make me physically sick, and I turn away quickly. That great music critic, Winthrop Sargent, said that to him music was art that invited intuitive and passionate reactions, rather than cold-blooded appraisals. So, to me, it is with paintings. I can make cold blooded appraisals only with paintings I don't really care for.

Thus, to sum up, a liberal arts education is totally unimportant—unless you want to succeed in life—when the use of language is essential—or want to enjoy life to its maximum potential. You cannot do that until you have been exposed to the arts—literature, music, theater, painting, sculpture—and have realized just what appeals *to you* the most. You can lead a reasonable life being good professionally and enjoying beer and football on weekends—and you will never know just how much you are missing.

Allow me to digress for a minute and speak about business in America. You may be hard put to think of a connection between business life and a liberal arts education—yet I am sure there is, or at least I feel there should be.

There are three things fundamentally wrong with much in American business, and the three illnesses are related. The first is the glorification of the "image," rather than paying attention to the reality of good service. Companies spend billions advertising how good they are, and they often spend very little on really good service, preferring to let clerks send form letters to complaining customers. "Send the bastard form letter No. 37" is a sick joke, awfully close to the truth in many companies. Customers are not always right, but they are always individuals, human beings, who have the right to have their complaints considered individually, on a personal basis.

The second illness is the enormous attention paid to the *next* bottom line. Of course, one must pay attention in business to the bottom line—if there is no profit, no earnings, eventually there will be no business. But it is not terribly important whether the company's next quarterly earnings will be up 10 or 15 or 20 percent, as long as management works so successfully that earnings will be up substantially five and ten years from now.

Unlike many American businessmen, I do not admire the Japanese. Their lifestyle is terrible—why they don't even have room in their tiny houses to hang old master paintings—and I wouldn't want to trade with the richest of them for even a day. But in two business aspects they are way, way ahead of us. One is their long term view of business, the other their loyalty to each other—employers to employees and vice versa.

Our third sickness in business is the deification of bigness. Big is beautiful. This is utter nonsense. If anything, in business small is beautiful. Because when the operation is small, the manager can pay attention to his product, his employees, his customers. When bigness becomes an end in itself, then it leads to the excesses you have witnessed in the last years. Endless mergers—not because the products will be improved or the lives of the employees—but because the egos of the top people demand it. The vulgarity of these excesses is truly ugly. There is something fundamentally wrong when you see—as we have seen even in Wisconsin, not just in New York or California—top managers of large, rapacious companies earning a million or more in salaries, while at the same time thousands of employees are laid off. Every single layoff is a personal tragedy, causing trauma in the affected family, and it is almost always caused by poor management. Yet it is seldom the managers who are penalized. There again, the Japanese are way ahead of us.

The deification of bigness. Mistaking great wealth for happiness. Would I really be happier if I were twice as wealthy? I don't think so.

And I know what would make me a great deal unhappier—loss of my family, my friends, the great people I work with, my health—none related to bigness.

Somehow I believe that a person who has really enjoyed great literature would understand all this and would do far better in business than many MBA's to whom bigness is god.

My friends speak of the ABC of my life: art, Bible and chemistry. How I came to art and chemistry is clear. To the Bible, I came more circuitously. We had neighbors in Vienna, wonderful people, orthodox Jews who invited me to their Sabbaths and Passover meals—accompanied by learned discussions about biblical passages, but I don't remember actually looking at a Bible until I was 14. Two weeks after I turned 16 I had the good fortune of being put into a prisoner of war camp. Of course, it took years before I realized what good fortune it was. The British suspected me and many others of being Nazi spies, and we were sent to Canada. I was the youngest in the camp, and on our first day there, the camp commandant questioned me carefully, surprised that a youngster of 16 had parachuted into England. When I tried to explain that I was not a parachutist, but was a Jew who had fled to England, he just laughed and assured me that he did not believe me, and anyway, he didn't like Jews either. In the next 18 months, I learned a lot about the Bible. What a book it is—no wonder it has been the best seller, the most translated book ever. What inspiration. When I read Moses' speech at the end of Deuteronomy (30:11-14):

> *For this commandment which I command thee this day, it is not hidden from thee, neither is it far off.*
>
> *It is not in heaven, that thou shouldest say, Who shall go up for us to heaven, and bring it unto us, that we may hear it, and do it?*
>
> *Neither is it beyond the sea, that thou shouldest say, Who shall go over the sea for us, and bring it unto us, that we may hear it, and do it?*
>
> *But the word is very nigh unto thee, in thy mouth, and in thy heart, that thou mayest do it.*

It is to me as if I were listening to Moses. And when I look at Leviticus 19, I see the most important commandment for ethics in business: you shall not put a stumbling block before the blind—do not mislead your customers—and the most important commandment for civil rights: do not stand idly by the blood of your neighbor.

This leads to one aspect of a liberal education which is, I believe, the most important of all, as it affects our relationship to others. Some call it religion, or philosophy or sociology—it is really some of each of these. It encompasses the most fundamental questions in life: why are we here—is there in fact a reason at all—or are we all here by chance, and is it best just to get the most out of life and be gone?

Politicans from all sides mouth platitudes about democracy—but why should democracy be superior to other forms of government? Obviously we are not created equal—some are very much stronger than others—some are far more intelligent. Why not an elitist government of the ablest? Only with a liberal arts education are you likely to think about such questions.

And only if we believe that God has created all of us, that there is some of God in all of us, must we come to the conclusion that each of us should have equal opportunity. Democracy. Justice for all. Moses put it so clearly -justice, justice you shall seek -and Amos so beautifully: Let justice well up as waters, and righteousness as a mighty stream.

Turn to the very opposite, evil, true evil, men killing indiscriminately, the millions killed by the minions of Hitler and Stalin, the killings in South Africa and Central America. What can persuade a man to kill another in cold blood? I am sure that it is popularly believed that the men killing millions in concentration camps of eastern Europe were brutes, sadists, men easily distinguished from the rest of us. I am afraid that this just is not so. Only recently I read the autobiography of Rudolph Hoess, the commandant of Auschwitz, the man who perfected the use of cyclone B in the gas chambers where hundreds of thousands of women and children were killed. Hoess was the son of deeply religious Catholics; he rebelled against his parents, joined the German army at 16 and the Nazi party after the first world war. He worked in several concentration camps and in 1940 became commandant of Auschwitz. After the war he spoke to psychiatrists, and wrote a detailed autobiography. What we see is a shockingly average human, without imagination, believing in authority, believing without question when Hitler assured Germany that the extermination of millions was right. The author of the book, "Menschen in Auschwitz" who knew Hoess, wrote that under other circumstances, Hoess could have been the painstaking director of a post office. He was one of millions, and not just in Germany. Some of you will remember and all of us will want to forget My Lai, Americans killing women and children in Viet Nam, and the atrocities of the KKK. But if we got to know the people involved, we would realize that by and large they are not sadists, not monsters, not, in fact, so different from the people around us. What they lack is imagination, the ability to think themselves into the position of others, traits developed by a liberal arts education.

One of the first stories I remember hearing when I was a boy was of a very religious Jew coming, deeply depressed, to his rabbi, saying, "Rabbi, what can I do, no matter how much I study I will never be as great and as wise as Moses." To which the Rabbi replied, "Sam, when you come before the heavenly Judge, he will not ask you, 'Sam, why were you not as great and wise as Moses?' All the Almighty is going to ask you is, 'Sam, why were you not as great and as wise as you, Sam, could have been.' "

My friends, a total education should prepare you for a better life as well as a better livelihood. Perhaps you can be able scientists, competent engineers, good doctors without a liberal arts education—though that may be questionable. But without it, I am quite certain you will not be as great and as wise as you might be, and will miss a great deal of the enjoyment of life.

Dr. Alfred Bader, scientist, industrialist, art historian and philanthropist, was born in Vienna in 1924. Wartime stays in England and Canada led to Queens University (Ontario) where he earned a B.Sc. in Chemical Engineering, a B.A. in History, and a M.Sc. in Organic Chemistry. After working as a chemist for Murphy Paint Company, he went to Harvard, completed his Ph.D. in Chemistry, and returned to Murphy (owned by Pittsburgh Plate Glass Company) which transferred him to Milwaukee. In 1951, he began Aldrich Chemical Company, which he ran part-time out of a garage. He resigned from PPG in 1954 to devote full-time to Aldrich which ultimately became the world's foremost supplier of high-quality fine organic chemicals. Aldrich merged with Sigma Chemical Company in 1975, creating the Sigma-Aldrich Corporation of which Bader is currently chairman.

Bader's contributions to chemistry include numerous publications and patents. Contributions to profession, community and state have been recognized with honorary degrees (UW-Milwaukee and Madison, Purdue, Queen's University), and numerous other awards of distinction.

Generous with his time and talents, Dr. Bader continues to share his knowledge and experiences with others. (One of his most popular speeches combines two of his loves—art and chemistry—and deals with the chemistry involved in the restoration of art.) His participation in this lecture series reaffirms the tradition of distinction for the series.

ACADEMY MEMBERSHIP
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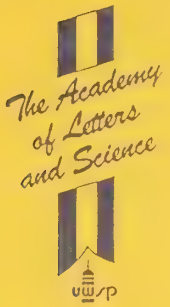

The Academy of Letters and Science is an organization founded to recognize civic contribution, intellectual and academic interest, professional achievement and significant support by individuals in the promotion of liberal studies in the University of Wisconsin-Stevens Point service area. The Academy serves as a support group for the College of Letters and Science by providing models of excellence for students, by providing the College access to the community and by offering the community an opportunity to shape College policies. Members of the Academy include the Dean of the College of Letters and Science, one faculty member appointed by the Dean, and non-faculty members who are appointed to a four-year term by the Academy.

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The efforts of the Educational Media Services,
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and Nancy Wachowiak and Sue Gunderson
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are greatly appreciated.

REMBRANDT VAN RIJN, Dutch 1606-1669
Portrait of a Young Jew, painted in 1663

WACO CREATIVE ART CENTER, INC.
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Dr. Alfred Bader's interest in art goes back to his childhood, but he started collecting paintings seriously while working on his doctorate. Over the past four decades, he has amassed an impressive collection. One of his famous acquisitions is the purchase of a Rembrandt painting: "Portrait of Johannes Uyttenboraert" at Sotheby's in London in 1992. A few months later he sold the painting for $10 million to the Rijkmuseum in Amsterdam (which houses the world's largest collection of Rembrandts). Dr. Bader's research into Rembrandt is legendary.

Dr. Bader was born in Vienna to a Catholic Hungarian mother and a Jewish father of Czech origin. His father died two weeks after he was born and the father's sister, a wealthy widow, was allowed to adopt him. Because of the growing Nazi menace, he was sent to England to live with strangers under a British program allowing entry vistas for Jewish children. He obtained a B.S. degree in chemical engineering, a B.A. degree in history and an M.S. in chemistry from Queen's University in Canada followed by a Ph.D. degree from Harvard University. Dr. Bader is founder of the Aldrich Chemical Company (now Sigma-Aldrich after a recent merger) located in Milwaukee, Wisconsin.

Over the years, Dr. Bader's enthusiasm for chemistry and passion for art have made him a much-sought-after-lecturer for societies and universities around the world. Baylor University is sharing his time with the citizens of Central Texas. He is currently writing a book, an encyclopedic work of Biblical subjects treated by Dutch painters in the 17th century and has just completed writing an autobiography entitled Adventures of a Chemist Collector.

You are cordially invited to attend

a lecture and art examination

by

Dr. Alfred Bader

in the Cameron Gallery of The Art Center

Sunday, September 10, 1995

1:00 p.m.
"The Rembrandt Research Project and the Collector"

2:00 p.m.
Reception and Examination of Art

Bring works of art to be examined
(seating limited)

The Board of Directors of the Jewish Community Museum

Invite you to attend an illustrated lecture by

Dr. Alfred Bader

THE BIBLE THROUGH DUTCH EYES

Monday, January 26, 1987, 121 Steuart Street, San Francisco, California, at 8:00 p.m.

RSVP 543-8880

Dr. Alfred Bader of Milwaukee, Wisconsin is an eminent scholar and collector of Dutch paintings with a particular interest in the presentation of Old Testamental themes in Dutch Art of the Seventeenth Century

Concordia UNIVERSITY McGill

Department of Chemistry and Biochemistry

Dr. Alfred Bader

Alfred Bader Fine Arts
Founder of the Aldrich-Sigma Company

"Joseph Loschmidt
- The Father of Molecular Modelling"

October 26, 1993
12:30 pm - Room 112,

McGill University, Otto Maass 112
801 Sherbrooke St. W.
Montreal, Quebec, H3A 2K6
(514) 398-7552

NOTE: ***The above lecture is the third in a three part series:***

First Lecture: ***"The History of Sigma-Aldrich",***
October 25, 1993, 12:00 noon,
McConnell Library Building, Room 125:
1400 de Maisonneuve, Blvd. O.

Second Lecture: ***"Adventures of a Chemist Collector",***
subtitled
"Chemistry in Art Restoration",
October 25, 6:00 Pm,
Otto Maass 10, McGill University.

Dr. Alfred Bader was born in Vienna in 1924. His father died when he was two weeks old. At the age of fourteen, Nazi laws forced him to drop out of school, and he spent six months buying and selling stamps to earn money before being sent by his mother to England. In 1939 he entered Brighton Technical College, but in May 1940 he was picked up by detectives during the Sunday school break at the Middle Street Synagogue in Brighton. Eventually, he was sent to Canada as a prisoner, where he stayed at an old fortress on an island (on the Richelieu River) near Lake Champlain. In this camp the refugees organized themselves into study and cultural groups. The International Student Service supplied text books, and McGill University allowed the internees to take junior and senior matriculation examinations in June and September of 1941. Bader passed both before being released in November 1941.

He then enrolled in engineering chemistry at Queen's University, and obtained a B.Sc. (1945) and later a M.Sc degree (1947) in organic chemistry under the supervision of A.F. McKay. In 1950, Alfred Bader obtained a Ph.D. degree from Harvard University, where he studied under the supervision of Professor Louis Fieser. On graduation from Harvard, he joined the research laboratories of the Pittsburgh Plate Glass Company in Milwaukee.

Dr. Bader's contributions in the field of Organic Chemistry include 24 scientific publications and 27 patents. His research has contributed to the development of new compounds and synthetic methods in the area of fatty acids, quinones, alkenylphenols, and indoles, and to the mechanisms of organic reactions.

In August 17, 1951, Alfred Bader and Jack Eisendrath (a Milwaukee attorney) decided to start a company of their own to sell research chemicals with the minimum required capital of $250 each of them putting in $250). They tossed a coin for the name of the company; Eisendrath won, and named it after his pretty fiancée, Betty Aldrich. They worked in their spare time, doing paperwork, storage, weighing, labelling, packaging and invoicing in Eisendrath's office.

Sales in the first year were $1705 and, since they drew no salaries, profit was $20. In the second year sales climbed to $5400; in the third, to $15,000. Aldrich eventually became the largest supplier of fine chemicals in the world. However, Bader had decided that the area of greatest growth for fine chemicals lay in biochemistry. In

1975, after many difficulties, Aldrich merged with Sigma of St. Louis, the largest supplier of biochemicals in the U.S. In 1990 Sigma-Aldrich was the 80th largest chemical corporation in the U.S. with annual sales of $440,000,000 (22.6% more than in 1988). The company employs about 4,100 people: about 3,000 in the U.S. and 1,100 in subsidiaries in Switzerland, Belgium, England, France, Germany, Israel, Italy, Japan and Spain.

The rise of Sigma-Aldrich is one of the outstanding success stories in a period when such success has been rare in North America. The history of the Aldrich and Sigma companies is an important part of the history of chemistry and it should be a classic case for study in business schools. Through his outstanding entrepreneurial skills, Dr. Bader may have done more to advance chemistry than any other scientist of this century.

Alfred Bader est né à Vienne en 1924. Son père mourut alors qu'il n'avait que deux mois. En 1938, les lois nazies le forcèrent de quitter l'école, et il passa six mois à acheter et vendre des timbres pour gagner sa vie avant d'être envoyé par sa mère en Angleterre. En 1939, il entra au Collège Technique de Brighton, mais en mai 1940, il fut capturé par des détectives durant la récréation du cathéchisme du dimanche à la synagogue de Middle Street à Brighton. Eventuellement, il fut envoyé au Canada, où il resta prisonnier dans une vieille forteresse sur une île de la rivière Richelieu près du lac Champlain. Dans ce camp, les prisonniers s'organisèrent en groupes d'Etudes et culturels. Le Service Etudiant International leurs procurèrent des livres d'études, et l'université McGill autorisa les prisonniers à se présenter aux examens de juin et septembre 1941. Bader fut reçu aux deux examens avant d'être relaché en novembre 1941.

Alors, il s'inscrivit en génie chimique à l'université Queen's, ou il obtint son baccalauréat (1945) et plus tard sa maîtrise (1947) en chimie organique, sous la direction de A.F. McKay. En 1950, Alfred Bader obtint son doctorat de l'université Harvard, où il étudia sous la direction du professeur Louis Fieser. Ensuite, il accepta un emploi dans les laboratoires de recherche de la division de peinture du Pittsburgh Plate Glass Company à Milwaukee.

Les contributions du Dr. Bader en chimie organique comprennent 24 publications scientifiques et 27 brevets. Sa recherche a contribué au développement de nouveaux composés et de nouvelles méthodes synthétiques dans le domaine des acides gras, des quinones, des alkenylphenols, des indoles, ainsi que des mécanismes de réactions organiques.

Le 17 août 1951, Bader et un avoué de Milwaukee, Jack Eisendrath, décidèrent de démarrer leur propre compagnie pour vendre des produits chimiques pour la recherche (avec le capital minimum requis de 500 $, chacun contribuant 250 $). Ils tirèrent au sort le nom de la compagnie; Eisendrath gagna et nomma la compagnie d'après le nom de sa fiancée toute mignonne, Betty Aldrich. Ils travaillèrent pendant leur temps de loisirs dans le bureau d'Eisendrath, faisant les écritures, le stockage, les pesées, l'étiquetage, l'emballage et la facturation.

La première année, les ventes furent de 1 705 $ et, comme ils ne se payèrent pas de salaire, le profit fut 20 $. La deuxième année, les ventes montèrent à 5 400 $, et la troisième à 15 000 $. Eventuellement, Aldrich devint le plus grand producteur de produits chimiques pour la recherche au monde. Cependant, Bader décida que le domaine de plus grande expansion pour les produits chimiques pour la recherche était en biochimie. En 1975, après de nombreuses difficultés, Aldrich fusionna avec Sigma de St Louis, le plus grand producteur de produits biochimi ques aux Etats Unis. En 1990, Sigma-Aldrich était la 80ème plus grande compagnie chimique aux Etats Unis, avec des ventes annuelles de 440 000 000 $ (22,6% de plus qu'en 1988). La compagnie a environ 4 100 employés: à peu près 3 000 aux Etats Unis et 1 100 dans les filiales en Suisse, en Belgique, en France, en Allemagne, en Israel, en Italie au Japon et en Espagne.

L'essor de Sigma-Aldrich represente un prodigieux succès à une période ou un tel succès a été rare en Amérique du Nord. L'histoire des compagnies Aldrich et Sigma constitue une importante partie de l'histoire de la chimie et devrait être un cas classique d'étude dans les écoles d'affaires.

A travers ses qualités entrepreneuriales exceptionnelles, le Dr. Bader a fait d'avantage pour faire progresser la chimie que n'importe quel autre scientifique de ce siècle.

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The Bible Through Dutch Eyes

- A lecture by Alfred Bader PhD

One of the remarkable aspects of life in 17th century Holland was the study of Bible and the identification of the Dutch with the People of the Book. This was amply depicted by the artists of the time and especially by Rembrandt and his School. Dr Alfred Bader, who combines his interest in Bible studies and art, presents, with the help of slides, a fascinating review of the Bible in Dutch art in a manner appreciated both by those with a general interest as well as by the scholar.

Dr Bader, the owner of an important collection of paintings mainly of the period of Rembrandt and his pupils, is an internationally recognised authority on the paintings of the Bible. He has spoken extensively throughout North America and Europe as well as at the National Gallery, Oxford, Cambridge and many other universities.

Sun, 6th December, 8pm

Admission: £4 (Friends £3)

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THE RHODE ISLAND SECTION OF THE AMERICAN CHEMICAL SOCIETY
"THE FIRST SECTION"

Vol. 35, No. 6 October 1986

The Speaker for October Dr. Alfred R. Bader

The speaker for October is Dr. Alfred R. Bader, the Chairman of the Aldrich Chemical Co. Dr. Bader, received his B. Sc. in Chemical Engineering (1945) from Queens University, Kingston Ontario. He later received a BA in History (1946) and his M.S. (1947) from Queens University. Dr. Bader did his doctoral research under Louis Fieser at Harvard. Upon receiving his doctorate, Dr. Bader returned to the Murphy Paint Co. where he had worked during the summer as an undergraduate. Murphy Paint was shortly sold to PPG and Dr. Bader become an Organic Group Leader. It was during this time that he conceived the idea for founding a company to produce high quality organic intermediates, an idea rejected by PPG. The company he founded of course is Aldrich Chemical Co. where he is Chairman. The Aldrich Catalog cover always features reproductions of the Old Master paintings from his extensive personal collection of masterpieces and is now the hallmark of the Aldrich Catlog. In 1975 Aldrich merged with Sigma Chemical Co. to become Sigma-Aldrich Chemical Co. Dr. Bader has co-authored 25 scientific publications covering a wide range of topics in organic chemistry. He also holds 27 patents.

The Bible Through Dutch Eyes

One of the remarkable aspects of life in seventeenth century Holland was the study of the Bible and the identification of Dutchmen with the People of the Book and their destiny. Never before had a Christian people studied the Bible so carefully. In many Dutch families the Bible was read daily, page by page, every morning. Events which are obscure to us became common household knowledge. Just as the Jews appeared in the Bible as the champions of God and freedom, so Dutchmen looked on themselves as the latter-day Israel, and on their fight with Spain as a fight against tyranny, of good against evil.

The effects of this identification on Dutch art of the seventeenth century have been manifold, as will be seen clearly in this talk.

OCTOBER MEETING

Thursday, October 23, 1986

Museum of Art, Rhode Island School of Design, Porcelein Gallery (Lower Floor)
224 Benefit Street
Providence, R.I.

Speaker

Dr. Alfred R. Bader
Chairman, Aldrich Chemical Co.

8:00 P.M.

THE BIBLE THROUGH DUTCH EYES

Cocktails: 5:30 P.M., Brown Faculty Club, Magee St.
Dinner: 6:30 P.M., Brown Faculty Club, $15.00
Reservations: Call Miss Elaine Chase 863-2256 by Monday, October 20th.

ATMOSPHERIC CHEMISTRY LECTURE SERIES
OUR CHANGING ATMOSPHERE

Corless Auditorium, Watkins Building
Bay Campus, University of Rhode Island
South Ferry Road, Narragansett, RI

Public Lectures

7:30 PM, Monday, 6 October - Dr. Ralph Cicerone - How to Change the Earth's Climate with Chemicals - the Greenhouse Effect.

7:30 PM, Monday, 13 October - Dr. Gene Likens - The Acid Rain Issue - Are We Making Progress?

7:30 PM, Wednesday, 22 October - Prof. Sherry Rowland - Freons and the Antarctic Ozone Hole.

7:30 PM, Monday, 27 October - Prof. Paul Crutzen - Potential Chemical and Climatic Effects of a Nuclear War.

Scientific Lectures

12:15 PM, Monday, 6 October - Dr. Ralph Cicerone - The Gaia Hypothesis - Feedbacks Between the Physical and Biological Environments.

12:15 PM, Tuesday, 14 October - Dr. Gene Likens - An Experimental Approach to Nutrient Cycling - The Hubbard Brook Ecosystem Study.

12:15 PM, Thursday, 23 October - Prof. Sherry Rowland - Increasing Atmospheric Methane.

12:15 PM, Tuesday, 28 October - Prof. Paul Crutzen - Global Effects of Human Activity on the Chemistry of the Atmosphere.

AMERICAN CHEMICAL SOCIETY
RHODE ISLAND SECTION

YOU'RE INVITED

BETH EL NER TAMID MEN'S CLUB

ANNUAL KALLAH WEEKEND

BREAKFAST
SUNDAY
MARCH 29th
WEITZMAN HALL
10:00 a.m.
(following 9:00 a.m. services in Chapel)

FEATURING OUR DISTINGUISHED GUEST

DR. ALFRED R. BADER

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Dr. Bader is a world renowned art expert who will provide you with commentary and visual slide presentation that will thrill you with an expertise the likes of which you have not experienced. Dr. Bader was born in Vienna in 1924. He came to America in 1947. His vocation is that of a chemist, but he's an author and was a guest curator of Milwaukee Art Center, as well as member of Art Association of Jewish Clubs, UWM. He is Chairman of the Board of Aldrich Chemical Company. He taught bible for 31 years at Temple-Emanu-El B'ne Jeshrun. Taught at East Side Hebrew School 1954 - 56 and was one of very few Jews fully certified as Hebrew-Religious school teachers in Milwaukee,

Reservations close March 26, 1987

Please reserve _____ places @ $5.00 each

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Zip_____ Phone_____

Mail with check to:

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TRINITY UNIVERSITY

1985-86 DISTINGUISHED SCIENTISTS LECTURE SERIES

DR. RONALD L. GRAHAM
Tuesday, October 1
"The Shortest Network Problem"

Dr. Ronald L. Graham joined the staff of the AT&T Bell Laboratories in 1962, upon his graduation with a Ph.D. from the University of California at Berkeley, and now serves as director of their Mathematical Sciences Research Center.

For the past 23 years he has confronted the formidable challenges that arise from the need to route hundreds of millions of telephone calls through the intricate communications web of cables, microwaves and satellites that embraces the earth.

Using his rare ability to translate real-world problems into mathematics, and his knack of being able to bring high powered mathematics to bear on computer science, Graham will tell of Bell's goal to trim costs through shorter and more efficient communications networks.

He is a remarkably prolific mathematician, publishing more than a dozen papers a year. He sits on the editorial boards of some 20 mathematical journals, travels extensively and lectures frequently. He administers a large Bell Laboratories department, directing its research and solving mathematical problems.

He has pioneered an area of mathematics known as "worst case analysis." His distinguished reputation has been earned in pure mathematics — mathematics with no immediately obvious application to telephone lines or spaceships (he had been an advisor to NASA on the Apollo moon program).

In 1972, he shared the prestigious Polya Prize, awarded by the Society for Industrial and Applied Mathematics, for his work in increasing the scope of the Ramsey Theory. His research in the Ramsey Theory was recognized by the *Guinness Book of Records,* which acknowledges that Graham holds the record for identifying the largest number ever used in a mathematical proof.

DR. ALFRED BADER
Wednesday, February 5
"Chemistry In Art"

Dr. Alfred Bader, recognized internationally as a scientist businessman and art collector, is the founder of the Aldrich hemical Company and currently is chairman of the Sigma Aldrich Corporation.

He combines his experience as a renowned art collector and historian with his experience in the realm of chemistry. A collector of an important collection of paintings by 17th century Dutch masters, he lectures internationally on the chemistry involved in the restoration of works of art.

Bader has authored or co-authored 25 scientific publications covering a wide range of topics in the field of organic chemistry, with the emphasis being on practical rather than theoretical chemistry. He also holds 27 patents.

He earned a Ph.D. in chemistry from Harvard, and was employed first as a research chemist and then as organic chemistry group leader in the paint division of the Pittsburgh Plate Glass Company in Milwaukee.

Bader found it was wasteful of research chemists' time and talent to prepare the high-purity intermediate compounds necessary to accomplish the research.

He received permission from the company in 1951 to set up his own facility to make the chemical intermediates necessary in the research. In his spare time, and operating out of a garage, he acquired some basic equipment and manufactured the starting material for diazomethane, and several other compounds. He called his new company "Aldrich."

When Pittsburgh Plate Glass moved its research division to Springdale, Pa., in 1954, Bader resigned his position to stay in Milwaukee and operate Aldrich as a fulltime business.

Today, Sigma-Aldrich products are purchased by universities, research institutions, hospitals and industry in nearly every country of the world. There are more than 37,000 chemicals in the current inventory.

DR. HARRY GRAY
Monday, March 24
"Artificial Photosynthesis"

Dr. Harry [illegible] California Institute of Technology. He is also chairman of the Department of Chemistry.

During his lecture at Trinity, Gray will explain [illegible] chemical products and the testing of compounds made in the laboratory are used to produce the chemical reactions associated with photosynthesis. This development has the ultimate potential of duplicating the wonders of photosynthesis in a laboratory and extending our understanding of energy processes.

Gray's work on the electron transfer reactions of [illegible] proteins, and his interest in photochemistry led him in the mid 1970s to experiment with solar energy conversion.

In 1977, the first solar energy storage reaction involving hydrogen products in homogeneous solution was discovered by Gray and his co-workers.

Further work by Gray and his associates in 1979 suggested several ways of improving the quantum efficiencies of such energy storage reactions of this type.

Gray completed his Ph.D. at Northwestern University in 1960. The following year he was awarded a National Science Foundation postdoctoral fellowship at the University of Copenhagen, Denmark, where he collaborated on studies of the electronic structures of metal complexes.

After leaving Copenhagen, he joined the chemistry faculty of Columbia University in 1961. There his continuing interest in transition metal compounds led him to investigate their electronic structures. He became the youngest full professor at Columbia in 1965.

For his work, Gray received two American Chemical Society awards, in Pure Chemistry in 1970 and Inorganic Chemistry in 1978. He was elected to the National Academy of Science in 1971.

All lectures will be presented at 8 p.m. in Trinity University's Chapman Auditorium.
They are free and open to the public. For further information, call 736-7413.

Distinguished Scientists Lecture Series

1985-86

The Distinguished Scientists Lecture Series was established in 1983 by an endowment gift from Mr. and Mrs. Walter F. Brown of San Antonio. Mr. Brown, an independent oil producer, is a Trinity University trustee.

The lecture series is in addition to Trinity's Science Lecture Series which features outstanding members of the University faculty in evening presentations.

An earlier gift from the Browns supports Trinity's Distinguished Lecture Series which features well-known speakers from various disciplines, careers and countries.

The Distinguished Scientists Lecture Series, along with the other Trinity lecture series, is presented to the public as a community service free of charge (no tickets are necessary), beginning at 8 p.m. each time. The lectures are in Chapman Auditorium. Doors will open at 7 p.m.

TRINITY UNIVERSITY
Division of Sciences,
Math & Engineering
715 Stadium Drive
San Antonio, Texas 78284

Distinguished Scientists Lecture Series

1985-86

- **DR. RONALD L. GRAHAM**
  October 1
- **DR. ALFRED BADER**
  February 5
- **DR. HARRY GRAY**
  March 24

TRINITY UNIVERSITY

Außeninstitut der Technischen Universität Wien

CHEMISCH-PHYSIKALISCHE GESELLSCHAFT

Einladung

Vortrag

Dr. Alfred R. BADER
Chairman der Sigma-Aldrich Corporation, Milwaukee, USA

DIE SIGMA-ALDRICH STORY

Vom Kindertransport im Jahre 1938 zum chemischen Großunternehmen

Alfred Bader, 1924 in Wien geboren, gelangte 1938 vierzehnjährig nach England. Nach Schulbesuch und Studien in England, Kanada und USA gründete er 1951 die Aldrich Chemical Company, die heute zu den größten und effizientesten Chemieunternehmungen der USA zählt. Alfred Bader hat überdies wichtige Beiträge auf dem Gebiete der organischen Chemie geleistet und ist außerdem international als Kunstkenner und -sammler bekannt.

Ort: Technische Universität Wien
1040 Wien, Karlsplatz 13, 1, Stock links, Böcklsaal

Zeit: Donnerstag, 16. Juni 1988, 17.00 Uhr c.t.

Außeninstitut der Technischen Universität Wien, A-1040 Wien, Resselgasse 5, Tel.: (0222) 58801/4214

USF

THE DEPARTMENT OF CHEMISTRY

presents

Dr. Alfred Bader
Chairman, Sigma-Aldrich Corporation

Adventures of a Chemist-Collector

January 26, 1989

Tampa Palms Golf and Country Club

Program

Social Time ..... 6:00 PM

Welcome - Dr. Schneller..... 6:40 PM

Dinner..... 6:45 PM

Introduction of Dr. Bader - Dean Mandell..... 7:45 PM

Presentation - Dr. Bader..... 7:50 PM

Adventures of a Chemist-Collector

Closing - Dr. Schneller..... 8:45 PM

The Department of Chemistry at USF appreciates the assistance of the Development Office of the College of Natural Sciences and Ms. Alessandrini for seeing that this special occasion could take place.

MINISTERIO DE CULTURA

EL DIRECTOR DEL MUSEO DEL PRADO

Se complace en invitar a la conferencia que sobre el tema

"La Química y el Arte"

pronunciará el Dr. ALFRED LACAZE, de la Queen's University

de Kingston, Canadá

el Viernes 28 de junio, a las 19,30 horas

Museo del Prado
Sala Juan de Villanueva
entrada por la puerta de Velázquez

Madrid, 1986

No doubt you have already seen this — from Edmonton.

Portfolio

Art for All at The EAG
March 30 - April 20, 1986

by Catie Allan

The Women's Society of the Edmonton Art Gallery is embarking on a new project: *Art for All*. This event will take the form of a three-week exhibition and sale of some 250, 19th and 20th Century Canadian paintings, drawings, prints and sculptures. The choice of works is being made by a special selection committee which includes Edmonton Art Gallery curators. A commission on each sale will finance new acquisitions for the Gallery.

Art for All is a balloted sale. Prices are fixed and ballots (offers to purchase) may be cast at any time between the *opening* on March 30 up to the *draw for ballots* on April 18, 1986. You may make these offers to purchase on as many works as you like and are committed to purchase the first work of art drawn in your name. You may refuse to purchase subsequent works for which your name is drawn.

Well-known artist Illingworth Kerr has consented to be the featured artist. In addition, he has donated a painting, *Foothills, Autumn,* for a promotional raffle.

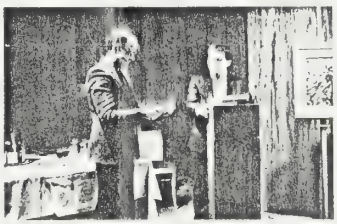
There will be a series of special events scheduled at the gallery throughout the period of the exhibition. Besides the opening, there will be informal lectures on various aspects of the exhibition on three Wednesday evenings. A luncheon and VIP reception are also scheduled.

It is hoped that this will be the first of many successful *Art for All* exhibitions and sales. Your participation will go far to ensure a successful outcome for this new venture and provide you the opportunity to add to your art collection. □

Catie Allan and Shirley Thompson selling raffle tickets on the Illingworth Kerr painting which is valued at $3,400.

Dr. Alfred Bader

Art Fair '85. Verna McClung



EAG Director Terry Fenton, left; Russell Hodgins, right.

The Honourable Horst Schmid

Sushil Kalia

At the Gallery

The lecture on **Chemistry in Art** given by Dr. Alfred Bader, at The EAG on October 28 drew calls for an encore. The Chairman of the Aldrich Chemical Co. in Milwaukee, Wisc. who is an avid collector of 17th Century Dutch and Flemish art, spoke on the Bible and art after his lecture at the request of the enthusiastic audience. The lecture was presented free to the public by the Chemical Institute of Canada. Terochem Laboratories Ltd. sponsored the reception and publicity for the event.

The 1985 **Art Fair** held at The Edmonton Art Gallery on November 1, 2 and 3 by the Women's Society was a great success. The sale of art works and crafts raised over $18,000 for the gallery.

At a reception held on November 13 at The EAG for the **Canadian Art Auction** (which took place at the Westin Hotel in Edmonton, November 18 and 19), auction organizer Russell Hodgins of Hodgins Art Auctions presented the EAG's Director with a donation to the gallery, and payment of his fee to become a member of the gallery's President's Circle.

Minister of International Trade, the Honourable Horst Schmid, was guest speaker at the **November 15 opening celebrations.** The Minister read an eloquent Hindu poem as part of his tribute to the Hindu Sculpture exhibition. The President of the Hindu Cultural Community, Sushil Kalia, led a fascinating tour of the Hindu Sculpture exhibition at the opening.

The Women's Society of The Edmonton Art Gallery has dedicated John McKee's *Country Road — Mountain Sky Summer Fields Late,* 1983 to the memory of Marion Agnes Shipley, 1920-1985. The work was purchased for The EAG Collection with funds donated by the Women's Society and matched with funds from the Canada Council Art Bank.

Dr. Shipley belonged for many years to the Women's Society, and served as its President in 1968/69. She helped to develop Art Fair and in 1962/63, was chairman of this event which is run by the Women's Society. She was also a devoted volunteer in the Art Rental and Sales Gallery and was named as the gallery's first Honorary Life Member in 1979. □

Intercollegiate Student Chemists
1983 Convention

TEMPLE UNIVERSITY
April 16, 1983

ABOUT OUR COVER

The alchemist reproduced on our cover is one of the most beautiful alchemical paintings known. The greatest artists—Rembrandt, Velasquez, Vermeer—unfortunately did not paint alchemical subjects, but many of the lesser known Dutch artists did, and this is by one of these, Cornelis Bega, painted around 1660.

Bega must have liked the subject because he painted it with many minor variations at least twice, the second version being the well known smaller work in the collection of the Fisher Scientific Company.

The painting is a thing of great beauty, of immediate interest to every chemist because it illustrates how a laboratory looked in the seventeenth century.

From the collection of Dr. Alfred Bader

WELCOME

Welcome to the 1983 Intercollegiate Student Chemists Convention at Temple University. Although Temple has never hosted the I.S.C. convention before we have taken an active part in participating in most of the recent conventions, including last year's at Muhlenberg College.

Last year, the following students were recognized for their work in chemistry and the presentation of their research at Muhlenberg College at the Convention.

Analytical Chemistry	1st:	SALLY HAIR - (Bryn Mawr College)
	2nd:	THOMAS WALTER - (University of Delaware)
Biochemistry Division A	1st:	JEFFREY BARKIN - (Swarthmore College)
	2nd:	WALTER SCHRADING - (Bryn Mawr College)
Biochemistry Division B	1st:	TIM SCHRAM - (Shippensburg State College)
	2nd:	DOROTHEA A. MARKAKIS - (Bryn Mawr College)
Organic Chemistry Division A	1st:	JACK SISKO - (Kings College)
	2nd:	R. V. SPERA - (Georgetown University)
Organic Chemistry Division B	1st:	KEVIN CANNON - (Temple University)
	2nd:	JEFFREY DENNER - (Bucknell University)
Inorganic Chemistry	1st:	JOHN W. BENBON - (Lehigh University)
	2nd:	DONALD CANADA - (Bloomsburg State College
Physical Chemistry	1st:	SCOTT BARTON - (Franklin and Marshall College)
	2nd:	ANA NUNEZ - (Wilkes College)

At the 1983 I.S.C. convention 51 papers will be presented from students doing undergraduate research in 22 colleges and universities in a four state region. This is representative of the growth of the I.S.C. since 1936 when the first conference was attended by 11 colleges.

Next year, Franklin and Marshall College will host the convention, and in 1985, the convention is scheduled to be held at Ursinus College in Collegeville. These decisions are made each year at the business meeting of the I.S.C. (See schedule for time and room of todays meeting.) Each institution should be represented.

We hope you enjoy the convention today and find it both interesting and stimulating as well as informative.

IN MEMORIAM

DANIEL SWERN

1916 - 1982

This Convention is dedicated to the memory of Dr. Daniel Swern, Professor of Chemistry at Temple University from 1963 until his untimely death on December 5, 1982.

A remarkable teacher, a prolific research chemist and an inspiration to many generations of undergraduate research students, his contributions to the chemical community will be long remembered.

I.S.C. '83 PROGRAM

Saturday, April 16, 1983

8:00 am - 12:30 pm	REGISTRATION	Chemistry Library, Beury Hall
	Students presenting papers should register with their specific division. Coffee and donuts will be available throughout the morning, in the corridor outside the Library.	
8:45 am - 9:00 am	MEETING OF JUDGES	BE122
9:00 am - 9:30 am	INTRODUCTION AND OPENING REMARKS	BE166
	Peter J. Liacouras, President - Temple University	
	Donald D. Titus, Chairman - Department of Chemistry	
9:30 am - 10:50 am	PRESENTATION OF PAPERS	
	A complete list of abstracts to be given starts on page 11. Oral presentations are limited to 12 minutes with a 3 minute question & answer period. The remaining 5 minutes will be used for the Judges, and for the changeover of media used for the presentations.	
10:50 am - 11:10 am	MORNING BREAK	
11:10 am - 12:50 pm	PRESENTATION OF PAPERS (Continued)	
	Many presentations may end by 11:30 am or earlier. Students who finish early are welcome to sit in on another division's presentations, or tour the Chemistry Building, and inspect the facilities.	
12:45 pm - 1:00 pm	BUSINESS MEETING	BE119
	Two student delegates and one faculty delegate from each college or university should attend.	
1:00 pm - 2:00 pm	LUNCHEON	Great Court, Mitten Hall
2:15 pm - 3:15 pm	"CHEMISTRY IN ART"	BE166
	A special presentation by Dr. Alfred Bader, President of the Aldrich Chemical Company. (See Abstract on following page.)	
3:15 pm - 3:45 pm	Presentation of Awards & Certificates	BE166
3:45 pm - 4:00 pm	Closing Remarks and Adjournment	

OUR SPECIAL GUEST

DR. ALFRED R. BADER

ALDRICH CHEMICAL COMPANY

Alfred R. Bader, a Milwaukee resident and industrialist, is truly a citizen of the world. He was born in Vienna, Austria in 1924, but was sent to England in 1938 by an aunt to escape Hitler and the Nazis. However, because an uncle was in fact a Nazi he was interned in Canada as a Prisoner of War, but was paroled to attend Queens University in Kingston, Ontario. There he earned a B.Sc. in Chemical Engineering, a B.A. in History, and an M.Sc. in Organic Chemistry. After working at Murphy Paint Company as a chemist for several years he was accepted at Harvard and earned a Ph.D. under Louis Fieser, one of the prominent organic chemists of the century. He returned to Murphy, which was now a part of Pittsburgh Plate Glass Company, and transferred to Milwaukee. He was so fond of Milwaukee after several years that he refused a transfer and joined Aldrich Chemical Company, which then operated out of a garage on Farwell Avenue.

Dr. Bader has developed Aldrich Chemical Company into a multi-national corporation renowned for its wide selection of high purity organic specialty chemicals, and its efforts to bring new methods of chemical synthesis to research chemists.

He also pursued a life-long interest in art--his first acquisition was as a boy in Vienna--and art history. Business trips to Europe are often combined with visits to art galleries and auctions. The Dutch Masters of the 17th century are his specialty. His efforts to identify and restore paintings of this period have brought him acclaim equaling that from is work at Aldrich Chemical Company.

Dr. Bader is as well known for his research on and restoration of paintings of 17th century Dutch Masters, as for contributions to the chemical commun ity through Aldrich Chemical Company. He has acquired an extensive private collection of paintings, but has also donated approximately 30 paintings to the Milwaukee Art Center as well as other institutions. He is a guest curator at the Center. During 1976 he organized an exhibit at the Milwaukee Art Center entitled "The Bible through Dutch Eyes", which brought together over 70 paintings by Dutch and Flemish artists of this era. He also prepared the catalogues for the exhibit, which indicates the level of his scholarly interest in the subject and paintings.

Recognition of his status as a serious collector and scholar is demonstrated by his selection as a Fellow of the Royal Society of Arts and his appointment as a Guest Curator at the Milwaukee Art Center.

CHEMISTRY IN ART

As a collector of old master paintings I look every year at several hundred old paintings--in junk and antique stores and at auctions all over the world--and have to decide, usually within minutes, whether a painting is worth buying. The first criteria is, of course, the general artistic merit of the work--often hard to discern in paintings covered with centuries of dirt. Secondly, is the painting really what I think it is? I am offered a painting said to be by a Dutch 17th century artist--are the pigments those used by 17th century artists? Are the wood or canvas and the ground those used by 17th century Dutch artists? Once I have acquired an old painting, the surface dirt is usually easily removed with mild solvents, and the decision has to be made how much restoration to do. Is the painting an original, a workshop production, or a later copy? Is the painting in its original size? What is the condition of the support--be it canvas, wood, metal, or slate? How much old restoration is there and should it be removed? Almost every old painting has some overpaint--was this added to hide losses or subjects considered undesirable by previous owners? If the painting is signed, is the signature original? The last questions can generally be answered by a combination of physical and chemical means, chiefly examination with uv light and under a magnifying glass, and tests with various solvents.

The I.S.C. Committee would like to publicly thank those organizations without those donations this convention would not have been a reality. It is because of their interest and concern that the future of chemical research will not simply exist, but prosper.

E. I. DUPONT DE NEMOURS & CO., INC. - MARSHALL LABORATORY

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THE UNDERGRADUATE COUNCIL OF ARTS AND SCIENCES OF TEMPLE UNIVERSITY

We would also like to thank those men and women who have volunteered their time to serve as judges in the various categories. Certainly, they are the best in their fields; their presence today has proven both an inspiration and an example to us.

ANALYTICAL CHEMISTRY:	Dr. Harry G. Lento, Campbell Institute for Research and Technology
	Dr. Grafton D. Chase, the Philadelphia College of Pharmancy and Science
BIOCHEMISTRY - Division A:	Dr. William S. Brinigar, Temple University
	Dr. Bruce Hwang, Smith Kline & French Laboratories
	Dr. Jenny P. Glusker, The Institute for Cancer Research
BIOCHEMISTRY - Division B:	Dr. Irwin A. Rose, The Institute for Cancer Research
	Dr. Neville Kallenbach, The University of Pennsylvania
INORGANIC CHEMISTRY:	Dr. Donald D. Titus, Temple University
	Dr. Saul Shupack, Villanova University
ORGANIC CHEMISTRY - DIVISION A:	Dr. Bruce E. Marvanoff, McNeil Pharmaceutical
	Dr. Alex Recchite, Sun Tech, Incorporated
	Dr. Gerald S. Ponticello, Merck Sharp & Dohme Research Laboratories

ORGANIC CHEMISTRY - Division B:	Dr. Magid Abou-Gharbia, Wyeth Laboratories, Inc.
	Dr. Cynthia Maryanoff, McNeil Pharmaceutical
	Dr. James F. Callahan, Smith Kline & French Laboratories
PHYSICAL CHEMISTRY:	Dr. Robert E. Salomon, Temple University
	Dr. Amar Nath, Drexel University

DIVISIONAL SCHEDULE

BIOCHEMISTRY - DIVISION A — BE121

9:30	Isaiah Jenks
9:50	Michael Munin
10:10	Kristin Haver
10:30	A. A. Baldwin
11:10	Theresa Smith
11:30	Debra Lyn Camper

BIOCHEMISTRY-DIVISION B — BE122

9:30	Suk Hyung Cho
9:50	Ann Marie Maguire
10:10	Wendy Baldwin
10:30	Catharine Hyndman
11:10	Andrew Bero
11:30	Cathy Kawler
11:50	D. P. Coole

PHYSICAL CHEMISTRY — BE404

9:30	Michelle Donovan
9:50	Antonius Oskao
10:10	Thomas Judge
10:30	K. M. Chang
11:10	Michael Spangler
11:30	Keith Siegalman
11:50	Susan Phippen
12:10	T. M. Lachocki

ORGANIC CHEMISTRY - DIVISION A — BE119

9:30	Lee Shusterman
9:50	Henry Vaccaro
10:10	Carmelo Rizzo
10:30	G. M. Keeney
11:10	Jeffrey Dener
11:30	Cathy Walsh
11:50	Carol Brouke

DIVISIONAL SCHEDULE (continued)

ORGANIC CHEMISTRY - DIVISION B — BE120

9:30 Frank Volz
9:50 Robert Marquis
10:10 Gene Chmielewski
10:30 Pat Grogan
11:10 Judy Bellas
11:30 Scott Goethe
11:50 C. Veale

INORGANIC CHEMISTRY DIVISION — BE415

9:30 Linda Trimmer
9:50 U. Willme
10:10 John Teagle
10:30 Sandra Tesno
11:10 Kenneth Podejko
11:30 Suzanne Kretchmar
11:50 Erich Uffelman
12:10 J. D. Higgins

ANALYTICAL CHEMISTRY — BE413

9:30 Thuy Le
9:50 Diana Peitkiewicz
10:10 Carl Horn
10:30 Cynthia Nolt
11:10 Theodore Ceccione
11:30 Lisa Polyak
11:50 Joseph Schaffer
12:10 Cathy Murray

TEMPLE UNIVERSITY CHEMISTRY SOCIETY
A STUDENT AFFILIATE CHAPTER OF THE AMERICAN CHEMICAL SOCIETY

President:	Howard J. Wilk
Vice President:	Beverly Bostwick
Secretaries:	Craig Lieberman
	Paul Mancini
Treasurers:	Paul Curcillo
	Carmello Rizzo

Faculty Adivsor: Dr. Edgar Howard,Jr.

CHAIRMAN OF THE TEMPLE UNIVERSITY DEPARTMENT OF CHEMISTRY

Dr. Donald D. Titus

I.S.C. EXECUTIVE SECRETARY

Dr. Fred A. Snavely, Franklin and Marshall College

ROOM PROCTORS AND TECHNICIANS

Edward Abrams
Beverly Bostwick
Eugene Craig
Robert Hahn
Mary Ellen Ford
Sandra Hobson
Daniel Ketcha
Craig Lieberman
Jamie Lieberman
Barton Lynch
Paul Mancini
Edward Protz
Karen Silverman

1983 I.S.C. logo was designed by Howard J. Wilk

Analytical Chemistry Rm. 413 9;30 a.m.

TITLE: Trace Metal Adsorption-Desorption on ThinFilm Polyethylene

AUTHOR(S): Thuy Le
SPONSORING SCHOOL: Bloomsburg St. Coll. PROFESSOR: Dr. John L. Plude
PROJECT DURATION: 8 months. TYPE OF SUPPORT: College

ABSTRACT: Adsorption-Desorption profiles of essential trace metals on thin film polyethylene have been generated. The variables of time, pH and speciation of the metal were examined. Speciation studies were accomplished using an Ion Selective Electrode and Atomic Absorption Spectrometry to establish free versus total ion content in solution. The adsorption process has been monitored by Infrared Spectroscopy of the plastic surface and visible spectroscopy of the solution. Desorption studies indicate irreversible binding of ions to the matrix. Degradation studies with a high energy ultraviolet source and chemical extractions of the film using alcoholic potassium hydroxide have allowed estimation of plasticizer effect on adsorption. Possible explanations for observed phenomena and predictive aspects of the model system will be discussed.

Analytical Chemistry 9:50 a.m. Rm.413

TITLE: Nickel Desorption Characteristics and BioAvailability in Sewage Sludge.

AUTHOR(S): Diana Pietkiewicz
SPONSORING SCHOOL: Bloomsburg St. Coll. PROFESSOR: Dr. John L. Plude
PROJECT DURATION: 8 months. TYPE OF SUPPORT: College

ABSTRACT: The desorption of nickel from sewage sludge used as a fertilizer has been modeled. The techniques of visible spectroscopy and Atomic Absorption were applied to the determination of nickel in extracted portions of model "contaminated" clay and sludge. Distilled water, 0.1N HCl and 0.1N EDTA were used as mobilizing agents in batch and flow systems. In the flow system a "sandwich" of the clay or sludge between membranes forms a cassette through which mobilizing agent is passed. Desorption is studied as a function of flow rate and solution variables of pH and composition. Desorption profiles of nickel will be presented and predictive aspects of the model discussed.

Analytical Chemistry Rm. 413 10:10 a.m.

TITLE: GRADIENT ELUTION FOR MICROBORE HPLC

AUTHOR(S): Carl Horn, Derek Dezaro and Richard Hartwick
SPONSORING SCHOOL: Rutgers University PROFESSOR: Dr. Richard Hartwick
PROJECT DURATION: 3 months. TYPE OF SUPPORT:

ABSTRACT: Gradient Elution, which is applicable to the optimized separation of solutes having diverse k' values, can be adapted for use with microbore (1mm id packed columns) HPLC. In such a gradient system, considerations must be given to the accuracy, reproducibility and response time of the imposed gradient.

A high pressure gradient former was designed using two Waters M6000 HPLC pumps, a Rheodyne 7413 .5ul valve, a Kratos 769 detector (.5ul flow cell) and an efficient mixing tee of less than 1 microliter in volume. Gradient control was accomplished using a lab designed microcomputer interface circuit and an Ohio Scientific C1P, or an Apple II microcomputer.

It was observed that this dual piston reciprocal pumping system imposed mobile phase displacement peaks on the desired gradient profile. To minimize this effect, the design of mixing chambers, placed before the injection valve, producing controlled dispersion was investigated.

The design, reproducibility and applications of this gradient system will be discussed.

Analytical Chemistry Rm. 413 10:30 a.m.

TITLE: Analytical Determination of Long Chain Polyphosphates

AUTHOR(S): Cynthia Nolt, Michele Glascow, Si Van Do, Malik Momin
SPONSORING SCHOOL: Lebanon Valley College PROFESSOR: Dr. O. A. Moe, Jr.
PROJECT DURATION: 3 months. TYPE OF SUPPORT: Research Corporation

ABSTRACT: Long chain inorganic polyphosphates are postulated to serve as a reserve of activated phosphoryl groups and to play a role in the regulation of the intracellular concentrations of adenosine nucleotides in microorganisms. In the course of studying E. coli polyphosphate kinase, an enzyme involved in polyphosphate metabolism, we undertook the development and testing of a spectrophotometric method for the determination of inorganic polyphosphate.

The method used is based on a blue shift in the absorption spectrum of toluidine blue O, a cationic dye, which forms very strong complexes with polyphosphates. A large difference spectral peak at 630 nm is used to quantitate the dye-polyphosphate complex. We have measured values for the molar absorptivity, $\Delta\varepsilon_{630}$, of the complex as a function of polyphosphate chain length. For long chain polyphosphates ($\geq$60 phosphoryl groups) the molar absorptivity was found to be independent of chain length and had a value of 1.22 ($\pm$0.11) x 10^4 $M^{-1}cm^{-1}$ at pH 8.0.

This method was applied to the determination of inorganic polyphosphate in E. coli cells. Cell extracts, treated with nucleases to remove DNA and RNA interferences, were compared with untreated, and the method for polyphosphate determination described here was compared with results for total phosphate by the phosphomolybdenum blue method. The results and the potential usefulness of the method will be discussed.

Analytical Chemistry Rm. 413 11:10 a.m.

TITLE: The Determination of Thiocyanate by Molecular Absorption Spectrometry in the Gas Phase

AUTHOR(S): Theodore Cecconie and Augusta Syty

SPONSORING SCHOOL: Indiana U. of PA PROFESSOR: Dr. Augusta Syty

PROJECT DURATION: 4 months. TYPE OF SUPPORT:

ABSTRACT: Historically the thiocyanate ion has been determined by a variety of methods, including titration with various precipitating reagents, spectrophotometry, and ion-selective electrodes. In our research a new method of thiocyanate analysis utilizing a gas-phase molecular absorption technique was investigated. Our proposed method involved sample pretreatment to quantitatively convert the thiocyanate ion to the ammonium ion. This treatment was proceeded by the injection of the resulting solution into strong base and measurement of the transient absorbance of the evolved ammonia gas at 194.4 nm.

This method of analysis was found to have a detection limit of 30 ug/ml SCN^- and a linear response range of absorbance to concentration of SCN^- up to 3500 ug/ml SCN^-. As to regards of interferents of our proposed method, only the cyanide, cyanate, and ammonium ions were found to cause signal enhancement during the analysis.

Our proposed method of thiocyanate determination was applied to the analysis of thiocyanate in blood serum, whose presence is known to accentuate the anomalies of iodine deficiency.

Analytical Chemistry Rm. 413 11:30 a.m.

TITLE: Electrochemistry of Thin Film Heteroaromatic Ladder Polymers

AUTHOR(S): Lisa M. Polyak, D.R. Rolison, R.J. Nowak

SPONSORING SCHOOL: Trinity College PROFESSOR: (supervisor) Robert Nowak

PROJECT DURATION: 6 months. TYPE OF SUPPORT: Federal (Naval Research L

ABSTRACT: Poly((7-oxo-7,10-H-benz(de)-imidazol(4',5':5,6)benz-imidazo(2,1-a)isoquinoline-3,4:10,11-tetrayl)-10-carbonyl) has been cast as thin films on electrode substrates. Coverages were obtained in the 10^{-8}-10^{-7} mole/cm^2 range, based on monomeric molecular weight 334 g/mole. Unlike many other polymers and polymer-coated electrodes, the electrochemistry of this polymer (commonly called BBL) was found to be stable and reproducible in aqueous media, particularly 4M H_2SO_4. A reversible reduction was observed at formal potential of +.075V vs. SCE with a peak separation of 14mV. The electrochemistry of the film was unaffected by storage in moist air.

Analytical Chemistry Rm. 413 11;50 a.m.

TITLE: Determination of Nitrate in Soil by Molecular Absorption Spectrometry in the Gas Phase

AUTHOR(S): Joseph Shaffer

SPONSORING SCHOOL: Indiana U. of PA PROFESSOR: Dr. A. Syty

PROJECT DURATION: 6 months. TYPE OF SUPPORT: Departmental

ABSTRACT:

The technique of gas-phase molecular absorption spectrometry is applied to the determination of nitrate in soil. After aqueous extraction, the nitrate is reduced to nitrite by passage through a column of metallic cadmium sponge. The resulting nitrite solution is then injected into 5.0 ml of 8.0 M HCl. This results in the evolution of nitrosyl chloride and oxides of nitrogen, which are carried by a stream of inert carrier gas to a flow-through absorption cell positioned in the light path of an atomic absorption spectrometer instead of the flame. Absorbance is measured at 195.0 nm.

Results are presented for several soils and are compared to those obtained by the standard phenoldisulfonic acid colourimetric method. Nitrate concentrations down to 3.4×10^{-4} % by weight in soil can be determined by the proposed method.

Analytical Chemistry Rm. 413 12;10 p.m.

TITLE: ELECTROCHEMICAL GENERATION AND CHARACTERIZATION OF ELECTRODE COATINGS CONTAINING MOLECULAR SIEVE PARTICULATES.

AUTHOR(S): Cathy G. Murray

SPONSORING SCHOOL: Trinity College, Wa.DC PROFESSOR: Dr. Douglas

PROJECT DURATION: 8 months. TYPE OF SUPPORT:

ABSTRACT: Thick, heterogeneous coatings form on Pt and glassy carbon electrodes after performing rotated voltammetry in an aprotic solution containing molecular sieve fines and a reducible species. Voltammograms for species such as 1,4-dinitrobenzene, tris-2,2'-bipyridylruthenium(II), and tetracyanoquinondimethan are classically shaped in the absence of sieve fines. Upon adding the ground zeolite and cycling into the reduction wave, the cathodic current decays and the wave shape degrades until the voltammogram resembles an irreversible cyclic voltammagram. After such treatment, the electrode has a non-uniform, colored coating which persists with soaking in clean solvent. A common feature of such coatings is a reversible oxygen reduction wave in blank, deaerated acetonitrile electrolyte, even for electrodes stored under vacuum, presumably due to the sequestering of oxygen by the molecular sieve coating upon exposure to the atmosphere.

Biochemistry Div. A Rm. 121 9:30 a.m.

TITLE: THE PREVENTATIVE EFFECT OF TICLOPIDINE IN THE DEVELOPMENT OF STRESS ULCERS IN RATS.

AUTHOR(S): RYUNOSUKE KUMASHIRO, M.D., Ph.D., ISAIAH JENKS, TERUO MATSUMOTO, M.D., Ph.D

SPONSORING SCHOOL: HAHNEMANN UNIVERSITY PROFESSOR: TERUO MATSUMOTO, M.D., Ph.D

PROJECT DURATION: 12 months. TYPE OF SUPPORT: DEPARTMENTAL

ABSTRACT: THE EFFECT OF TICLOPIDINE (5-(2-CLOROBENZYL)-4,5,6,7-TETRAHYDRO (3,2,-C) PYRIDINE HYDROCLORIDE) ON STRESS ULCERS INDUCED BY COLD RESTRAINT STRESS IN MALE SPRAGUE-DAWLEY RATS ADMINISTERED WITH TICLOPIDINE PRIOR TO STRESS AT DOSES OF 30 mg/kg, 100 mg/kg, 200 mg/kg, 300 mg/kg and 1ml SALINE FOR THE CONTROLS WAS EXAMINED.

AFTER STRESS, THE ANIMALS WERE SACRIFICED AND GASTRIC BLEEDING, ULCERATION, ACID OUTPUT, VASCULAR ISCHEMIA, AND PLATELET FUNCTIONS WERE ASSESSED WITH MICROSCOPIC, MICROSCOPIC, AND HEMATOLOGICAL STUDIES..

GASTRIC BLEEDING, ULCERATION, ISCHEMIA, AND PLATELET AGGREGATION WERE SIGNIFICANTLY LOWER IN THE 200 mg/kg and 300 mg/kg TICLOPIDINE GROUPS AS COMPARED TO THE CONTROLS (p 0.001). IN A DOSE OF 300 mg/kg, TICLOPIDINE SIGNIFICANTLY REDUCED ACID SECRETION (p 0.05). THERE WAS NO SIGNIFICANT CHANGE IN PLATELET COUNTS AMONG THE GROUPS, HOWEVER.

OUR RESULTS SUGGEST THE IMPORTANCE OF PLATELET FUNCTION IN THE MULTIFACTORIAL STRESS ULCER ETIOLOGY. AS AN ANTIPLATELET AGGREGATOR, TICLOPIDINE REDUCED THROMBUS FORMATION AND ISCHEMIA OF GASTRIC MUCOSA, THEREBY REDUCING THE INCIDENCE OF GASTRIC ULCERATION UNDER STRESS.

In CONCLUSION, TICLOPIDINE MAY ADD NEW INSIGHT INTO THE STRESS ULCER ETIOLOGY, AND MAY ALSO BE USEFUL IN THE TREATMENT OF PATIENTS WITH STRESS ULCER.

Biochemistry Div. A Rm. 121 9:50 a.m.

TITLE: APOPROTEIN ANALYSIS AND ATHEROSCLEROSIS

AUTHOR(S): Michael C. Munin

SPONSORING SCHOOL: West Chester State PROFESSOR: Dr. David Kritchevsky

PROJECT DURATION: 4 months. TYPE OF SUPPORT:

ABSTRACT: Atherosclerosis has been shown to be related to serum cholesterol levels. In the blood, serum cholesterol is transported in the form of lipoproteins; four types of these molecules exist which differ in the amount of protein, cholesterol, cholesterol ester, and triglyceride present. In the family of lipoproteins, the low density lipoproteins(LDL's)are highly correlated with the risk of atherosclerosis because they carry the most total cholesterol. Recently, the protein component(known as the apoprotein)of lipoproteins has become more important in our understanding of atherosclerosis. The group that I have been involved with induced atherosclerosis in rabbits by using a cholesterol-free, semipurified diet containing 40% carbohydrate, 25%protein, and14% saturated fat. When the protein component of this diet was varied from casein to soy, a difference in the severity of the disease was observed. They hypothesized that this difference was directly related to the ratio of lysine:arginine contained in the individual protein. In order to understand more about the effects of dietary protein, we analyzed blood apoproteins using ultracentrifugation and visible spectrophotometry. Special interest was placed on the relationship between diet and the relative ratio between the two types of apoproteins contained in LDL's. Data is still forthcoming so no conclusions can be made at this time.

Biochemistry Div. A Rm.121 10:10 a.m.

TITLE: Synthesis and Purification of 3-Azidopyridine Adenine Dinucleotide for Use in Kinetic Inhibition Studies of Yeast Alcohol Dehydrogenase

AUTHOR(S): Kirsten A. Hauer

SPONSORING SCHOOL: Juniata College PROFESSOR: Dr. Tom Lyons Fisher

PROJECT DURATION: 4 months. TYPE OF SUPPORT: Juniata College

ABSTRACT: 3-Azidopyridine adenine dinucleotide, an analog of the coenzyme nicotinamide adenine dinucleotide (NAD) in which the azido functional group replaces the amido group, is a promising photoaffinity label for NAD-dependent enzymes. Since the structure of this analog is so similar to NAD, it readily binds to the active site of an enzyme such as yeast alcohol dehydrogenase, an enzyme for which the structure of the active site is known. Photodecomposition of the bound analog should result in a highly reactive nitrene intermediate which will insert into any nearby group to yield a covalent enzyme-analog bond. The position and orientation of the analog at the active site can then be inferred by amino acid analysis of the photolabeled enzyme. The synthesis and purification of this analog is described, and the procedure for photolabeling and subsequent analysis is discussed.

Biochemistry Div. A Rm. 121 10:30 a.m.

TITLE: SYNTHESIS AND CONFORMATIONAL ANALYSIS OF MODEL PEPTIDES CONTAINING PHENYLALANINE AND DEHYDROPHENYLALANINE

AUTHOR(S): A.A.Baldwin, A.C.Bach,II, and L.M.Gierasch

SPONSORING SCHOOL: University of Delaware PROFESSOR: L.M.Gierasch

PROJECT DURATION: 15 months. TYPE OF SUPPORT: unsupported

ABSTRACT:

Cyclo(D-alanyl-glycyl-phenylalanyl-glycyl-proline) (I) was prepared by solution methods as part of a continuing study of the conformations of cyclic peptides. The conformation of I was investigated by using ^{13}C and ^{1}H nuclear magnetic resonance. Spectral analysis, including variable temperature experiments, solvent titrations, and determination of coupling constants and chemical shifts, indicated that this peptide takes up a conformation containing two intramolecular hydrogen bonds, one in a β turn and one in a γ turn. A comparison with other cyclic peptides will be presented. Approaches to the synthesis of related cyclic peptides containing α,β-dehydroamino acids will also be discussed. The conformational consequences of substitution with dehydrophenylalanine have been explored by comparing preferred conformations of peptides containing this residue and analogues containing a normal (saturated) phenylalanine at the same site. Dehydroamino acids favor relatively limited regions of conformational space, and design of potentially bioactive peptides containing this residue should be guided by its conformational impact.

Biochemistry Div. A Rm. 121 11:10 a.m.

TITLE: A Study of Haptoglobin Genotype

AUTHOR(S): Ms. Teresa Ann Smith and S. Helen M. Burke, Ph.D.
SPONSORING SCHOOL: Chestnut Hill College PROFESSOR: S. Helen M. Burke, Ph.D.
PROJECT DURATION: 24 months. TYPE OF SUPPORT: Institutional

ABSTRACT:

Haptoglobin is a serum glycoprotein of the α_2-fraction. This protein exists in three genotypes which can be separated electrophoretically and classified by their phenotypic band separation. It has been proposed that one of these genotypes (Type 1-1) is less immunologically competent than the other two. Reports indicate that subjects having this genotype have a three to four fold higher risk of contracting leukemia. This experiment studied the haptoglobin genotype distribution of test groups of leukemic and diabetic subjects and compared them with controls.

Biochemistry Div. A Rm.121 11:30 a.m.

TITLE: EXPLORING PEPTIDE-MICELLE INTERACTIONS BY HIGH-PRESSURE LIQUID CHROMATOGRAPHY.

AUTHOR(S): Debra Lyn Camper and Lila M. Gierasch.
SPONSORING SCHOOL: University of Delaware PROFESSOR: Dr. Lila M. Gierasch
PROJECT DURATION: 14 months. TYPE OF SUPPORT: NIH

ABSTRACT: Affinities of several hydrophobic model peptides for micelles have been determined using a high-pressure liquid chromatography (HPLC) method developed by Armstrong and Nome (Anal. Chem. 53, 1662 (1981)). The mobile phase in these HPLC experiments consisted of an aqueous detergent (sodium dodecylsulfate, SDS) solution. As the SDS concentration increased, the retention time of the peptide decreased to an extent dependent upon the strength of the interaction between the peptide and the micellar phase. This approach has been used to complement spectroscopic studies of the conformations of the same hydrophobic model peptides in micellar media. The relationship between the observed peptide-micelle affinities and conformational changes induced in the peptide through interactions with micelles will be discussed.

Biochemistry Div. B Rm. 122 9:30 a.m.

TITLE: Synthesis of 2,3-Epoxyglutarate for Use in Inhibition Studies of Alanine Aminotransferase

AUTHOR(S): Suk Hyung Cho

SPONSORING SCHOOL: Juniata College PROFESSOR: Dr. Ruth E. Reed

PROJECT DURATION: 4 months. TYPE OF SUPPORT: Juniata College

ABSTRACT: Photorespiration is a metabolic process which is considered to be energetically wasteful whereby CO_2 fixation in plants is reversed; this process may limit plant productivity. Alanine aminotransferase is an enzyme that may be involved in this process. The alanine aminotransferase protein also catalyzes a second reaction: glutamate:glyoxylate transamination which is clearly involved in photorespiration. Therefore, it will be interesting to study the mechanistic properties of this enzyme. Preliminary kinetic studies have been carried out; relatively pure enzyme is needed for more detailed mechanistic study. Purification to date involves $(NH_4)_2SO_4$ precipitation and DEAE-cellulose chromatography. The present study involves investigation of preparative isoelectric focusing (IEF) as a possible next step in the purification. The appropriateness of IEF for preparative work depends upon the value for the isoelectric point (PI); if the enzyme remains active at its isoelectric point, then preparative IEF should be a useful procedure. To answer this question, analytical IEF is being developed. The first step is development of an appropriate activity stain; the second step is determination of the PI.

Biochemistry Div. B Rm. 122 9:50 a.m.

TITLE: Oxygen Consumption Control in Frog Sartorius Muscle by Potassium and Other Ions.

AUTHOR(S): Anne Marie Maguire and Gilbert N. Ling

SPONSORING SCHOOL: Chestnut Hill Coll. PROFESSOR: Sr. Mary Kieran McElroy

PROJECT DURATION: 11 months. TYPE OF SUPPORT: Penrsylvania Hospital

ABSTRACT:

Oxygen consumption was measured as a means of observing respiration in frog sartorius muscle. Ionic concentrations of potassium, sodium, hydrogen, and calcium are altered in the Ringer's solution to determine their individual effects on oxygen consumption. Results support the major tenets of the Association - Induction Hypothesis.

Biochemistry Div. B Rm. 122 10:10 a.m.

TITLE: Biomedical Applications of Metallocenes: A Review

AUTHOR(S): Wendy Baldwin
SPONSORING SCHOOL: Rider College PROFESSOR: Dr. John E. Sheats
PROJECT DURATION: one months. TYPE OF SUPPORT:

ABSTRACT:
Recently much research has been done on the biomedical applications of metallocenes. Titanocene dichloride is an effective antitumor agent; vanadocene dichloride, molybdenocene dichloride and niobocene dichloride are less effective. The postulated mechanism of action is similar to that of the cytostatic drug cis-diamminedichloroplatinum (cis-platin). (103-Ru)-Ruthenocene derivatives have affinities for certain organs which depend on the substituent(s) on the cyclopentadiene ring(s). Such compounds are easily synthesized and may have diagnostic applications in nuclear medicine. Ferrocenyl-penicillins and -cephalosporins with antibiotic activity have been synthesized in which the usual phenyl or heteroaromatic group is replaced by the ferrocene moiety. Some of these compounds are effective even against drug-resistant bacteria.
A review of this research is presented.

Biochemistry Div. B Rm. 122 10:30 a.m.

TITLE: The Kinetics of the Enzyme Catalase and the Mechanism of its Inhibition

AUTHOR(S): Catherine Hyndman and Morris Bader
SPONSORING SCHOOL: Moravian College PROFESSOR: Dr. Morris Bader
PROJECT DURATION: 8 months. TYPE OF SUPPORT: Departmental

ABSTRACT: A study has been made of the enzyme catalase. This enzyme catalyzes the decomposition of H_2O_2 to water and O_2. We have developed a new technique for the automated, electronic analysis of the released gas. In this way we have collected kinetic data of enzyme and substrate concentrations not seen before. The accuracy of this technique has allowed us to study the mechanism of a number of inhibitors, such as azide, cyanide, fluoride, and 5-fluorouracil.

Biochemistry Div. B Rm. 122 11:10 a.m.

TITLE: Studies in Amino Acid Racemization Dating

AUTHOR(S): Andrew S. Bero and John Wehmiller
SPONSORING SCHOOL: Univ. of Delaware PROFESSOR: John Wehmiller
PROJECT DURATION: 5 months. TYPE OF SUPPORT: USGS

ABSTRACT: Amino acids endogenous to the carbonate matrix of many marine organisms undergo recemization to form a mixture of D and L isomers. These amino acids, originally in the 100% L configuration, result from the hydrolysis of proteins and enzymes required for the incorporation of Ca into the exoskeleton. D/L ratios have been used to estimate the ages of marine deposits previously not datable by other methods. Because some amino acid dates on shell or bone samples have conflicted with currently accepted radiometric dates, it is continually necessary to investigate possible causes of spurious amino acid results. We have studied the diffusion of amino acids into fossil shell fragments and powders as a possible source of contamination which could lead to erroneous (low) D/L values. Under high chemical gradients and temperatures which simulate ages of about 500,000 years, leucine does not diffuse into shells in large enough quantities to alter D/L values outside the experimental error of the method. Other amino acids would be expected to behave similarly. These data strongly suggest that contamination of well-preserved shells is not significantly a course of error in amino acid dating.

Biochemistry Div. B Rm. 122 11:30 a.m.

TITLE: Purification of Alanine Aminotransferase of Oat Seedling Leaves by Isoelectric Focussing

AUTHOR(S): Kathleen A. Kahler
SPONSORING SCHOOL: Juniata College PROFESSOR: Dr. Ruth E. Reed
PROJECT DURATION: 4 months. TYPE OF SUPPORT: Juniata College

ABSTRACT: The process of photorespiration in plants results in an inefficient use of carbon dioxide. Plants which do not photorespire grow faster and better than those which do. It is hypothesized that inhibition of photorespiration would lead to higher production in crops such as oats. Evidence has shown that glycidate (2,3-epoxypropionate) inhibits alanine aminotransferase, an enzyme catalyzing a reaction which may be involved in photorespiration. A compound similar to glycidate, 2,3-epoxyglutarate (2,3-epoxypentandioate), and proposed to be a closer analog of 2-oxoglutarate, one substrate of the reaction, will be synthesized from 2-pentenedioic acid and tested in kinetic studies as another possible inhibitor of the reaction.

Biochemistry Div. B Rm. 122 11;50 a.m.

TITLE: Comparison of Cation-binding by Two Cyclic Pentapeptides

AUTHOR(S): J.P. Cook, K. Yenal, A.L. Rckwell, S. Dworetsky, and L.M. Gierasch
SPONSORING SCHOOL: University of Delaware PROFESSOR: L.M. Gierasch

PROJECT DURATION: 9 months. TYPE OF SUPPORT: unsupported

ABSTRACT: The conformational adjustments upon cation comples formation of cyclo-(ala-pro-gly-D-phe-pro),I and cyclo-(D-phe-pro-gly-D-a;a-pro),II will be presented utilizing ^{1}H and ^{13}C nuclear magnetic resonance (NMR) and circular dichroism (CD) techniques. It has been found that these two cyclic pentapeptides form two cation complexes PC and PC_2 with magnesium perchlorate in an acetonitrile solution. Previous studies and model building of analogous cyclic pentapeptides led to the hypothesis that introduction of a L or D residue preceeding Pro would alter the relative stabilities of the two complexes. Insertion of an L residue was predicted to favor a one-cis complex, and studies of peptide I confirmed this prediction. Alternately, the cyclic pentapeptide with a D residue would not be expected to occur in the cis form. NMR results confirmed that peptide I exists in an all trans 1:1 complex. At higher cation concentrations the 2:1 species (PC_2) forms. Peptide I exists in a solvent-dependent one-cis :all trans equilibrium favoring the cis form exclusively in polar solvents while an all-trans conformer would be expected for peptide II. Details of conformations of these free and cation complexed cyclic-pentapeptides will be presented and discussed in the context of conformational distribution and cation-binding mechanisms in peptides.

Inorganic Chemistry 9:30 a.m. Rm. 415

TITLE: Investigation of the Reactions of the Hydrofluoric Acid-Phosphoric Acid Combination with Silica and Alumina

AUTHOR(S): Linda Trimmer

SPONSORING SCHOOL: Juniata College PROFESSOR: Dr. Paul Schettler

PROJECT DURATION: 4 months. TYPE OF SUPPORT: Juniata College

ABSTRACT: Rock formation acidizing to increase oil well productivity has been in widespread use in limestone drilling sites for most of this century. Much of the study adapting this procedure to sandstone formations has been conducted with a hydrofluoric acid component added to the previously used hydrochloric acid. Problems arise in this environment due to conduit blockage by reaction products. Studies of acidizing in shale regions are less numerous, but work at the Columbia Gas System Service Corporation suggests similar problems would occur. A method for examining the reactions producing the detrimental effects is proposed. Altering the extent of these reactions to reduce silica deposition, the undesired process, will be attempted through substitution of phosphoric acid for hydrochloric acid in the previously applied hydrofluoric acid-hydrochloric acid system.

Inorganic Chemistry 9:50 a.m. Rm. 415

TITLE: Computer-assisted Differential Pulse Anodic Stripping Voltammetry

AUTHOR(S): Uwe Willme

SPONSORING SCHOOL: Juniata College PROFESSOR: Dr. Tom Lyons Fisher

PROJECT DURATION: 4 months. TYPE OF SUPPORT: Juniata College

ABSTRACT: The method of differential pulse anodic stripping voltammetry (DPASV) utilizing a laboratory microcomputer can be used for inexpensive and simple analysis of metals in aqueous solutions. In addition to the microcomputer (Apple II), a homemade potentiostat and a commercial static mercury drop electrode (SMDE) are used to demonstrate that a microcomputer can replace classical dedicated analog instruments in an undergraduate laboratory. This method is applied for accurate determination of cadmium, copper, lead, tin and zinc in local river and municipal water.

Inorganic Chemistry 10:10 a.m. Rm. 415

TITLE: Palladium(II), Platinum(II) and Mercury(II) Complexes of Ambidentate Phosphonium Ylids: Synthesis, ^{1}H, ^{13}C and ^{31}P NMR Spectra and Structure of an ortho-Metallated Dinuclear Product.

AUTHOR(S): John A. Teagle, Marvin L. Illingsworth, William C. Fultz, Arnold L. Rheingold and John L. Burmeister

SPONSORING SCHOOL: University of Delaware PROFESSOR: John L. Burmeister

PROJECT DURATION: 18 months. TYPE OF SUPPORT: Departmental

ABSTRACT:

The reactions of ambidentate ylids of the type $R_3PCR'R''$ (R=Ph, R'H, R"=COPh, $COCH_3$, $COOCH_2CH_3$, $COOCH_3$, CN; R'=CH_3, R'=COPh, $COOCH_2CH_3$; R'=COPh, R"=COPh; R=n-C_4H_9, R'=H, R"=COPh) with $PdCl_2$ and $PtCl_2$ in refluxing CH_3CN yielded complexes having the general formula $[M(ylid)_2Cl_2]$ whereas reaction with $HgCl_2$ in alcohol produced dinuclear complexes of the type $[Hg_2(ylid)_2Cl_4]$. The structures of these complexes will be discussed in terms of their observed ^{1}H, ^{13}C and ^{31}P NMR spectra. The M=Pt, R=Ph, R'=H, R"=$COCH_3$ complex undergoes ortho-metallation, yielding the dinuclear species $[Pt(\mu\text{-}Cl)(CH_3COCHP(C_6H_4)(C_6H_5)_2]_2$. The coordination geometry about each of the platinum atoms is square planar, with a Pt-Pt non-bonding distance of 3.599Å. The ortho-metallated ligand is puckered, as would be expected for a five-membered chelate containing only single bonds.

Inorganic Chemistry 10:30 a.m. Rm. 415

TITLE: The Reactions of Carboxylates with Ambidentate Substrates

AUTHOR(S): Sandra L. Tesno

SPONSORING SCHOOL: Franklin and Marshall College PROFESSOR: Dr. Claude Yoder

PROJECT DURATION: 8 months. TYPE OF SUPPORT: Petroleum Research Fund

ABSTRACT:

Various carboxylates have been reacted with the ambidentate substrates chloromethyldimethylchlorosilane (CMDS) and bromomethyldimethylchlorosilane (BMDS) in an attempt to study the effect of various reaction conditions on the site of substitution. Both monosubstituted (1) and disubstituted (2) products have been identified.

$ClCH_2Si(CH_3)_2OCR$ (1) $\qquad$ $RCOCH_2Si(CH_3)_2OCR$ (2)

Similar reactions involving amines and amides with CMDS have been performed, and in the case of certain amides, an unusual product containing a five-coordinate silicon was obtained. The purpose of this series of reactions is ~~to determine whether or not a similar product can be ob~~tained by using carboxylates.

Inorganic Chemistry 11:10 a.m. Rm. 415

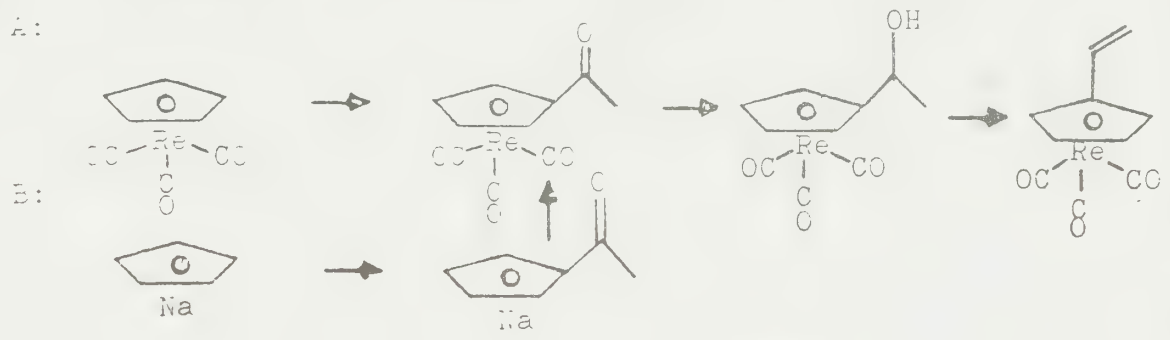
TITLE: Synthetic Approaches to Vinylcyclopentadienyltricarbonylrhenium (Vinylcyrhentrene)

AUTHOR(S): Kenneth G. Podejko

SPONSORING SCHOOL: Rider College PROFESSOR: John E. Sheats

PROJECT DURATION: 3 months. TYPE OF SUPPORT: KMS Laser Fusion

ABSTRACT: The goal of this research project was to produce machinable polymers containing rhenium. Two schemes were followed. Scheme A involves synthesis of cyclopentadienyltricarbonylrhenium (cyrhentrene) followed by acetylation, reduction and dehydration. Scheme B involves synthesis of actylcyclopentadienylsodium which is then bound to the rhenium, reduced and dehydrated. The synthetic procedures and the IR and NMR spectra of the intermediates will be discussed.



Inorganic Chemistry 11:30 a.m. Rm. 415

TITLE: UNIQUE PREPARATION OF PLATINUM COMPLEXES WITH HYDROXYQUINONES

AUTHOR(S): Suzanne A. Kretchmar

SPONSORING SCHOOL: University of Delaware PROFESSOR: Dr. Seymour Yolles

PROJECT DURATION: eightmonths. TYPE OF SUPPORT: Departmental

ABSTRACT:

The technique of ball milling has been previously employed for the formation of composites of anticancer agents, such as cis-diamminedichloroplatinum II and doxorubicin, in poly (lactic acid) matrices from which these drugs can be slowly released. More efficacious and less toxic anticancer agents resulted when cis-diammine-dichloroplatinum II was combined in the ball mill with other drugs containing hydroxyquinone-ligands. Investigation of the factors involved in the method of preparation of these compounds has shown that the mechanical work imparted during ball milling provides the activation energy necessary for formation of the desired complexes.

Inorganic Chemistry 11:50 a.m. Rm. 415

TITLE: Schiff Base Complexes of Dioxovanadium(V)

AUTHOR(S): Erich S. Uffelman

SPONSORING SCHOOL: Bucknell University PROFESSOR: Charles A. Root

PROJECT DURATION: 6 months. TYPE OF SUPPORT: Petroleum Research Fund

ABSTRACT: N,N-(2-Dimethylaminoethyl)salicylaldiminatodioxovanadium(V), [VO_2(Saldmen)], has been prepared three different ways. The first two methods discovered involved the oxidation of oxovanadium(IV) to dioxovanadium(V). The third, and most efficient method, involves reacting the sodium salt of the ligand with VO_2Cl in anhydrous CH_3CN. [VO_2(Saldmen)] has been characterized by x-ray crystallography, ^1H NMR, ^{13}C NMR, analysis, and infrared and electronic spectroscopy.

The third synthetic method has been extended successfully to the sodium salts of the Schiff bases formed by condensing salicylaldehyde with N-methylethylenediamine, men, N-hydroxyethylethylenediamine, heen, and aminoethylaziridine, AEA, to form VO_2(Salmen), VO_2(Salheen), and VO_2(SalAEA), respectively.

Inorganic Chemistry 12:10 p.m. Rm. 415

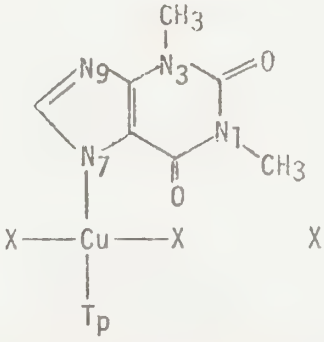
TITLE: Structural Study of Cu(II)-Theophylline Complexes

AUTHOR(S): J. D. Higgins

SPONSORING SCHOOL: Albright College PROFESSOR: W. J. Birdsall

PROJECT DURATION: 7 months. TYPE OF SUPPORT: Institutional

ABSTRACT: The bonding in a series of Cu(II)-theophylline (T_p) complexes has been examined. $Cu(T_p)_2Cl_2$ and $Cu(T_p)Cl_2 \cdot 2H_2O$ were synthesized, and IR comparisons were made to the previously prepared complexes, $Cu(T_p)_2(NH_3)_2 \cdot 2H_2O$, $Cu(T_p)_2(NH_3)_2$, $Cu(T_p)_2(H_2O)_4$, and $Cu(T_p)_2$. The local bonding around Cu can be represented as follows:



X = Cl, NH_3, H_2O

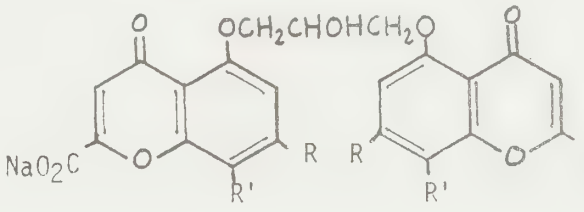
IR evidence suggests that chelate formation to the metal center from the T_p C_6 carbonyl does not occur in these complexes, but that hydrogen bonding can occur between the T_p C_6 carbonyl and appropriate metal ligands.

Organic Chemistry Div. A Rm. 119 9:30 a.m.

TITLE: Synthesis of Disodium Cromoglycate derivatives.

AUTHOR(S): Lee T. Schusterman
SPONSORING SCHOOL: Temple University PROFESSOR: Stephen S. Washburne
PROJECT DURATION: 10 months. TYPE OF SUPPORT: Departmental

ABSTRACT: A 1972 study of Disodium Cromoglycate, the disodium salt of 1,3-bis(2-carboxychromon-5-yloxy)-2-hydroxypropane (1), by J.S.G. Cox and J.E. Beach, et al., established the structure-activity relationships of many derivatives of this asthmatic bronchospasm inhibitor.[1]



(1) R=H,R'=H

(2) R=OH,R'=H

(3) R=CH_3,R'=$COCH_3$

Here we have synthesized one new derivative of Disodium Cromoglycate (Intal) (2), and an important precursor to a new derivative (3). These were prepared in multistep syntheses involving the preparation of appropriate acetophenone synthons, condensation; first, with Epichlorohydrin, then Diethyl Oxalate, followed by cyclization and subsequent hydrolysis of the resultant carboxychromone ester.

Organic Chemistry Div. A Rm. 119 9:50 a.m.

TITLE: STERIC HINDRANCE IN HIGHLY SUBSTITUTED ORGANOSILICON COMPOUNDS. STEREOISOMERIC TRI-(p-XYLYL)-o-TOLYLSILANES.

AUTHOR(S): Henry A. Vaccaro and Frederick H. Strobel
SPONSORING SCHOOL: Muhlenberg College PROFESSOR: G. N. Russell Smart
PROJECT DURATION: 6 months. TYPE OF SUPPORT: Chemistry Department

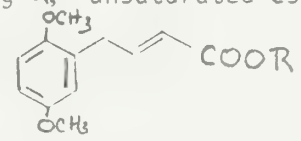
ABSTRACT: Earlier studies indicated that tetra-o-tolylsilane (TOL_4Si) and tetra-p-xylylsilane (XYL_4Si) can be prepared in stereoisomeric forms, the isomers arising from restriction of rotation about the C-Si bonds. In an attempt to develop additional examples, XYL_3Si-OMe and XYL_3Si-F were treated with TOL-Li in the expectation that diastereomers of XYL_3Si-TOL would be generated. In addition, XYL_3Si-OMe has been treated with o-anisyllithium (ANIS-Li) and with α-naphthyllithium (NAP-Li) in attempts to form XYL_3Si-ANIS and XYL_3Si-NAP.

NMR chemical shifts are now being examined to determine whether or not these data can be used to assign structures to particular isomers.

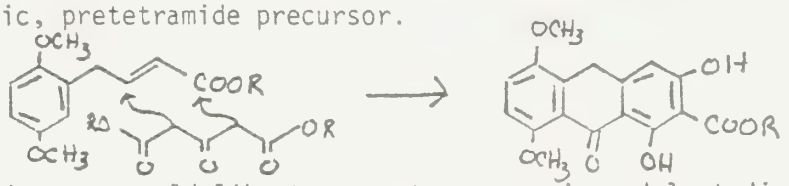
TITLE: New Tetracycline Synthons — Organic Chemistry Div. A Rm. 119 10:10 a.m.

AUTHOR(S): James L. Bloomer, Carmelo J. Rizzo
SPONSORING SCHOOL: Temple University PROFESSOR: Dr. J.L. Bloomer
PROJECT DURATION: 11 months. TYPE OF SUPPORT: University

ABSTRACT: The following α,β-unsaturated ester :



can be used in a novel cyclization reaction with β-keto-gluterate to form a tricyclic, pretetramide precursor.



At this time, we would like to report success in model studies in the synthesis of the unsaturated ester. We would also like to propose a reaction scheme for the cyclization to the tricyclic compound and its subsequent conversion to pretetramide.

Organic CHemistry Div. A Rm. 119 10:30 a.m.

TITLE: A Model Study of B-12 Coenzyme Reaction

AUTHOR(S): G. M. Keeney
SPONSORING SCHOOL: Juniata College PROFESSOR: Dr. E-I. Ochiai
PROJECT DURATION: 4 months. TYPE OF SUPPORT: Juniata College

ABSTRACT: This research studies the indirect steric effect of deforming the ligand field about the cobalt atom in a B-12 model compound on the cobalt-to-carbon sigma bond. A deformation of the ligand field would be induced by bridging the sulfhydryl groups by mercury(II) in the alkyl derivatives of 6,12-mercapto-2,3,9,10-tetramethyl-1,4,8,11-tetraazacyclotetradeca-1,3,8,10-tetraene cobalt (R = Co(TT)). This effect would be studied through a comparison of thermal decomposition rates of RCo(TT) with and without the strain-inducing bridge. The ligand (TT) would be prepared by an in situ condensation of 2-mercapto-1,3-diaminopropane (MDP) and butadione-2,3 in the presence of cobalt (II). MDP is synthesized through several intermediary steps from 1,3-diamino-propanol-2 (DP). First DP is converted to a diphthalimide derivation (DPDP) to protect the amine groups. DPDP is brominated and the bromide derivative is then converted to the thiol derivative (MDP).

Organic Chemistry Div. A Rm. 119 11:10 a.m.

TITLE: Imino Ethers in Synthesis

AUTHOR(S): Jeffrey Dener and Harold W. Pinnick
SPONSORING SCHOOL: Bucknell University PROFESSOR: Harold W. Pinnick
PROJECT DURATION: 3 months. TYPE OF SUPPORT: Departmental

ABSTRACT:

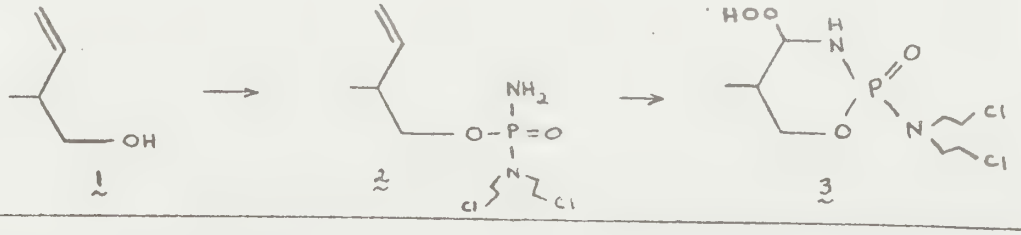
Imino ethers react with nucleophiles, particularly those derived from highly acidic conjutate acids, to give substituted imines. Basic nucleophiles from weakly acidic acids deprotonate the imino ether. Evidence of this proton transfer will be presented. The synthetic utility of the imine intermediates for preparing alkaloids will be discussed.

Organic Chemistry Div. A Rm.119 11:30 a.m.

TITLE: Synthesis of an Activated Analog of Cyclophophamide and 31-P NMR Spectroscopy of its Fragmentation.

AUTHOR(S): Cathy M. Walsh
SPONSORING SCHOOL: Trinity College PROFESSOR: Dr. Susan Ludeman
PROJECT DURATION: 3 months. TYPE OF SUPPORT: NIH

ABSTRACT: The anti-cancer agent cyclophosphamide owes its therapeutic effect to oxidative activation followed by spontaneous fragmentation to the metabolite phosphoramide mustard. It was the purpose of the research described herein to synthesize a pre-activated analog of cyclophosphamide and to compare the kinetics of its fragmentation with that of the parent compound. The target compound in this synthesis was 3, which by reduction would give the methyl analogs of the active metabolites of cyclophosphamide. Thus an organozinc reagent was made from 1-bromo-2butene and this was reacted with ethyl chloroformate to give an ester which upon reduction with lithium aluminum hydride provided 1. Compound 1 was reacted with phosporamidic mustard dichloride and ammonia to give 2 which upon ozonolysis yields 3.



1 2 3

Organic Chemistry Div. A Rm. 119 11:50 a.m.

TITLE: An H.P.L.C. Method for Haloperidal

AUTHOR(S): Carol C. Brouke
SPONSORING SCHOOL: Chestnut Hill College PROFESSOR: Sister Mary Kieran McElroy
PROJECT DURATION: 3 months. TYPE OF SUPPORT: Casimir A. Janecki, McNeill

ABSTRACT: The development of a quantitative, stability indicating method for Haloperidal using High Performance Liquid Chromatography. The factors affecting stability will be covered, and those which were determined to give best results will be shown.

Organic Chemistry Div. B Rm. 120 9:30 a.m.

TITLE: THE BASE PROMOTED OLIGOMERIZATION OF 15-DEHYDRO-PROSTAGLANDIN B1: PGBx; A DEFINATION OF THE PROBLEM

AUTHOR(S): Jean Chmielewski, Robert Marquis, Frank Volz and Greg Verdine

SPONSORING SCHOOL: St. Joseph's University PROFESSOR: George L. Nelson

PROJECT DURATION: 24 months. TYPE OF SUPPORT: Office of Naval Research

ABSTRACT:

Treatment of 15-dehydro-prostaglandin B1 with 1 N potassium hydroxide results in the conversion to a complex mixture which has been termed PGBx. Certain fractions of this mixture exhibit a number of unique *in vitro* and *in vivo* activities which appear to indicate an ability to prevent or restore damage on a cellular level resulting from oxygen deprivation.

Relatively little from a chemical viewpoint has been established concerning the structural details of PGBx or the chemistry involved in the formation of the active site(s). Earlier descriptions of PGBx as a stable free-radical prostaglandin polymer or even as a polymer derivative of prostaglandin B1 have been demonstrated to be incorrect. Efforts directed towards the isolation and characterization of individual components of this mixture have proven notably unsuccessful.

The various physical and chemical properties of this mixture will be discussed with a view towards defining the complexity of this mixture and the reaction pathway leading to it.

Organic CHemistry Div. B Rm. 120 9:50 a.m.

TITLE: THE BASE PROMOTED OLIGOMERIZATION OF A 15-DEHYDRO-PROSTAGLANDIN B1 ANALOG: STRUCTURAL INSIGHTS INTO THE COMPLEX MIXTURE TERMED PGBx

AUTHOR(S): Jean Chmielewski, Robert Marquis, Frank Volz and Greg Verdine

SPONSORING SCHOOL: St. Joseph's University PROFESSOR: George L. Nelson

PROJECT DURATION: 24 months. TYPE OF SUPPORT: Office of Naval Research

ABSTRACT:

Many of the problems associated with the direct structural elucidation of the complex mixture termed PGBx are related to the inherent complexity of oligomeric mixtures in which the unit is a 20-carbon prostaglandin. A structurally simpler analog of 15-dehydro-PGB1, 1, the PGBx precursor, was prepared which retained the essential conjugated cyclopentenone functionality of 1.

The oligomerization of the structurally less complicated 15-dehydro-PGB1 analog under mild conditions results in the formation of a lower molecular weight oligomeric mixture containing dimer through octamer components. Through the isolation and characterization of individual dimer components, it was established that the initial oligomer forming reaction takes place by a Michael addition pathway involving multiple reaction sites. As a consequence of such a reaction pathway, the resulting oligomeric mixtures rapidly become very complex as each additonal unit of analog is incorporated into the oligomeric chain.

Organic Chemistry Div. B Rm. 120 10:10 a.m.

TITLE: THE BASE PROMOTED OLIGOMERIZATION OF A "BLOCKED" 15-DEHYDRO-PROSTAGLANDIN B1 ANALOG: AN APPROACH TO LESS COMPLICATED OLIGOMERIC MIXTURES

AUTHOR(S): Jean Chmielewski, Robert Marquis, Frank Volz and Greg Verdine

SPONSORING SCHOOL: St. Joseph's University PROFESSOR: George L. Nelson

PROJECT DURATION: 24 months. TYPE OF SUPPORT: Office of Naval Research

ABSTRACT:

Having established the basis for the exceedingly complex nature of the PGBx mixture, efforts were directed towards the development of structurally less complicated oligomeric mixtures. A "C-16 blocked" analog was designed as a precursor with a reduced number of reaction sites.

Since enolate formation is not possible at C-16, all oligomeric products previously derived from the C-16 enolate addition would be eliminated. The increased steric bulk at C-16 was also expected to favor oligomer formation to C-13 over C-14.

The oligomerization of the "blocked" analog resulted in the conversion to an oligomeric mixture that could readily be separated. Analysis indicated ; 1) the absence of any C-16 derived oligomer from double addition and 2) that enolate attack was preferentially taking place at the less hindered C-13 acceptor site. Several additional advantages were realized from the use of a "blocked" precursor.

Organic Chemistry Div. B Rm. 120 10:30 a.m.

TITLE: Approaches to the Synthesis of Benzofuro(2,3-c)dihydropyridine.

AUTHOR(S): Patrick M. Grogan

SPONSORING SCHOOL: Temple University PROFESSOR: David R. Dalton

PROJECT DURATION: 12 months. TYPE OF SUPPORT: Temple University

ABSTRACT:

The Bischler-Napieralski cyclization reaction has been used for about nine decades to prepare dihydroisoquinolines and dihydrocarbolines from suitable amides. The synthesis of an appropriate benzofuran upon which the same reaction can be attempted to yield a benzofuro(2,3-c)dihydropyridine - compounds similar to which have shown analgetic and analeptic activity - is described. The results of the Bischler-Napieralski reaction are discussed.

Organic Chemistry Div. B Rm. 120 11:10 a.m.

TITLE: Stable Analogs of the Active Metabolites of Cyclophosphamide: Synthesis and ^{31}P NMR Spectroscopic Studies

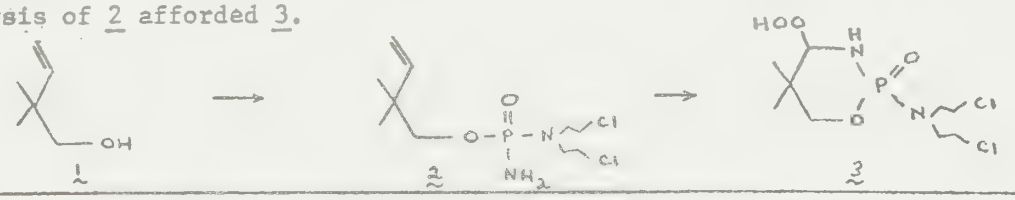
AUTHOR(S): Judy M. Bellas

SPONSORING SCHOOL: Trinity College/CUA PROFESSOR: Dr. Susan Ludeman

PROJECT DURATION: 2 months. TYPE OF SUPPORT: NIH

ABSTRACT:

Current interest in the anti-cancer agent cyclophosphamide centers around the pivotal roles its oxidized metabolites may play in oncostatic selectivity prior to their fragmentation to the cytoxic phosphoramide mustard. Compound 3, which is the dimethyl analog of "activated" cyclophosphamide, was synthesized as a stable model(cannot fragment) conducive to 31-P NMR spectral analysis of the intermediate metabolites of cyclophosphamide. Thus, ethyl 2-methylacetoacetate was reacted with NaH and methyl iodide to give the dimethyl counterpart which was selectively reduced with sodium borohydride to give ethyl 2,2-dimethyl-3-hydroxybutyrate. Following dehydration with phosphorus pentoxide, reduction of the ester with lithium aluminum hydride gave 2,2-dimethyl-3-butene-1-ol (1). Compound 1 was reacted with phosphoramidic mustard dichloride and ammonia to yield 2. Ozonolysis of 2 afforded 3.



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Organic Chemistry Div. B Rm, 120 11:30 a.m.

TITLE: Rearrangement of Cyclopropanes

AUTHOR(S): Scott Gothe and Harold W. Pinnick

SPONSORING SCHOOL: Bucknell University PROFESSOR: Harold W. Pinnick

PROJECT DURATION: 15 months. TYPE OF SUPPORT: Departmental

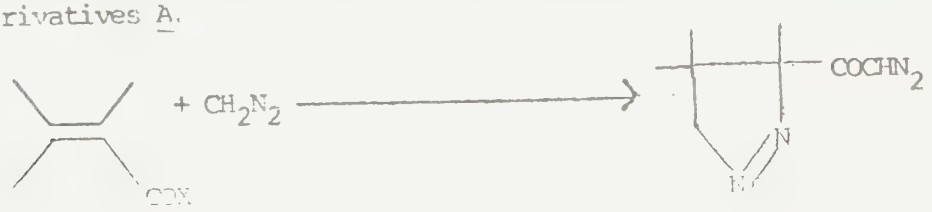
ABSTRACT: Activated cyclopropanes rearrange when exposed to nucleophiles. The effect of variables has been studied. Keto-cyclopropanes lead to dihydrofurans while thione-cyclopropanes give dihydrothiophenes. Activated cyclopropanes bearing alkyl groups were allowed to rearrange in order to determine the S_N2 versus S_N1 character of the transformation. Attempts to prepare activated cyclobutanes lead directly to dihydropyrans.

TITLE: Formation of Diazoacetyl Pyrazolines

AUTHOR(S): C. Veale
SPONSORING SCHOOL: University of DE PROFESSOR: J. A. Moore
PROJECT DURATION: 7 months. TYPE OF SUPPORT: University

ABSTRACT:

Diazoacetyl pyrazolines B, which are the precursors for the synthesis of 1,2 dihydrodiazepin-4-ones, are obtained by acylation and 1,3 dipolar addition of diazomethane to α,β unsaturated acid derivatives A.



A B

It has been found that the order of occurrence of these two steps is dependent upon the substituent X. This dependence, as well as the relative rates of 1,3 dipolar cycloaddition for a series of A type compounds will be discussed.

Physical Chemistry Rm. 404 9:30 a.m.

TITLE: Resonant Second Harmonic Generation: A Probe of Surface Adsorbates

AUTHOR(S): Michele Donovan
SPONSORING SCHOOL: Bryn Mawr College PROFESSOR: G. Richmond
PROJECT DURATION: 6 months. TYPE OF SUPPORT: National Science Foundation

ABSTRACT: Second harmonic generation of laser light has proved to be very important in extending the optical range for laser spectroscopists. In a novel application of this principle, we have been probing the structure of molecules adsorbed on silica and metal surfaces. When visible light is focussed on the surface the generated ultraviolet photons can be attributed to the monolayer of molecules on the surface. An enhancement of this effect occurs when the energy of the doubled photons correspond to electronic transition of the molecule. Such effects are forbidden in the media by symmetry. Hence the resonant second-harmonic generation reveals spectral features of the adsorbates on the surface. Our initial results will be reported and potential applications in electrochemistry will be discussed.

Physical Chemistry Rm. 404 9:50 a.m.

TITLE: The Structure of Shale as Deduced from Nitrogen Isotherms

AUTHOR(S): Antonius Oskamp
SPONSORING SCHOOL: Juniata College PROFESSOR: Dr. Paul Schettler
PROJECT DURATION: 4 months. TYPE OF SUPPORT: Juniata College

ABSTRACT: Layered and other minerals with void spaces which are large in comparison to the molecular dimensions often strongly adsorb a variety of materials. This behavior is used for comparative porosity studies based on nitrogen sorption isotherms of shale. The analysis of mesopores is carried out using the Kelvin equation applied to the "parallel-plate" pore model. For micropores the "MP" method (= micropore analysis method) is applied.

Physical Chemistry Rm. 404 10:10 a.m.

TITLE: Solubility of Nucleic Acid Bases in Water and Methanol

AUTHOR(S): Thomas Judge

SPONSORING SCHOOL: Franklin & Marshall College PROFESSOR: J.N. Spencer

PROJECT DURATION: 9 months. TYPE OF SUPPORT: PRF and Research Corporation

ABSTRACT: The solubilities of uracil, thymine, and adenine were determined in methanol and water solvents by UV spectroscopy. The enthalpy, entropy, and free energy of solution were calculated for both solutions. The thermodynamic parameters of transfer from water to methanol permit an interpretation of the relative solvation of the solutes by each solvent, the extent of solute-solvent hydrogen bonding in each solvent, and the importance of the hydrophobic effect with regard to the interaction between nucleic bases and water.

Physical Chemistry Rm. 404 10:30 a.m.

TITLE: High Vibrational Overtone Spectroscopy of Norbornadiene by Laser Photoacoustic Spectroscopy

AUTHOR(S): K.M. Chang

SPONSORING SCHOOL: Bryn Mawr College PROFESSOR: G. Richmond

PROJECT DURATION: 9 months. TYPE OF SUPPORT: Research Corporation
Petroleum Research Fund

ABSTRACT: This research involves the study of classically forbidden highes vibrational overtones by laser-induced photoacoustic spectroscopy. The relatively simple and rigid molecule norbornadiene (Bicyclo - [2.2.1] hepta-2,5-diene) is used. By determining the relative maxima and the lineshapes of the spectra, it is possible to gain valuable conformation on the nature of the higher vibrational states (e.g. the energy, local mode frequency, and anharmonicity constant). Furthermore, the high sensitivity of LPAS technique is demonstrated.

Physical Chemistry Rm. 404 11;10 a.m.

TITLE: Finding a Bleachable Fluorescein Dye Solution

AUTHOR(S): Michael D. Spangler

SPONSORING SCHOOL: Juniata College PROFESSOR: Dr. Paul Schettler

PROJECT DURATION: 4 months. TYPE OF SUPPORT: Juniata College

ABSTRACT: This is an investigation of the effectiveness of certain oxidants and reductants to aid the ability of light energy to "bleach" buffered fluorescein dye solutions. We attempt to raise the quantum efficiency high enough for a short, intense light source to drive the fluorescein through irreversible reactions to a non-fluorescent product. This "bleachable" buffered fluorescein dye solution would have applications in certain commercial processes.

Physical Chemistry Rm. 404 11:30 a.m.

TITLE: Effect on Heat Capacity of Solutes by Hydrogen Bonding Solvents

AUTHOR(S): Keith Segalman

SPONSORING SCHOOL: Franklin and Marshall College PROFESSOR: James N. Spencer

PROJECT DURATION: ~~months~~ Academic year TYPE OF SUPPORT: PRF, Research Corporation

ABSTRACT: The heat capacity of non-polar solutes is increased by dissolution in water. This increase in heat capacity is explained by a restructuring of water molecules about the solute. This restructuring of water molecules causes stronger hydrogen bonding in the first solvation shell than occurs in the bulk liquid. The change in heat capacity for several solutes upon dissolution in various hydrogen bonding solvents has been determined by calorimetric analysis. These heat capacities show that solvents react differently to polar and non-polar solutes. Different models for the mode of solvation by hydrogen bonding solvents will be discussed.

Physical Chemistry Rm. 404 11:50 a.m.

TITLE: Interfacial Tension by the Drop Weight (Volume) Method: Effect of Drop Growth Rate

AUTHOR(S): Susan E. Phippen and Ralph C. Little
SPONSORING SCHOOL: Trinity Col/NRL PROFESSOR: Ralphe C. Little

PROJECT DURATION: 4 months. TYPE OF SUPPORT: Naval Research Laboratory

ABSTRACT: An investigation has been made of the effect of drop rate growth on the interfacial tension as determined by the drop weight method. A series of surfactant concentrations for two different surfactants - Aerosol OT and Witconate P10-59 - yielded data which allowed a corrective equation to be developed.

Physical Chemistry Rm. 404 12:10 a.m.

TITLE: Salting out of Ethanol from Aqueous Solutions

AUTHOR(S): Lachocki, T.M. Rothen, R.L.
SPONSORING SCHOOL: Lock Haven State College PROFESSOR: Dr. A.H. Gray

PROJECT DURATION: 12 months. TYPE OF SUPPORT: Faculty Grant

ABSTRACT:

This investigation was designed to answer four questions concerning the salting out of Ethanol.

1. Which salts are best suited for separating ethanol from aqueous Solutions with consideration given to efficiency, availability, cost, recovery of salt and salt residues in the Alcohol?
2. What alcohol concentrations are best suited to this process and conversely with alcohol concentrations of 10 to 15% (those common in current fermentation processes) what salt concentrations are most effective?
3. Can the salt to be used be readily and economically recovered?
4. Will there be significant residual salts in the alcohol, and if so, what additional steps may be necessary?

UNIVERSITY INDEX

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Michele Donovan

Bucknell University

Jeffrey Dener
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Erich S. Uffelman

Chestnut Hill College

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Susan Phippen
Lisa M. Polyak
Cathy M. Walsh

West Chester State College

Michael C. Munin

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18.	Horn, Carl	Rutgers University
19.	Hyndman, Catherine	Moravian College
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46.	Veale, C. A.	University of Delaware
47.	Volz, Frank	St. Joseph's University
48.	Walsh, Cathy M.	Trinity College
49.	Willme, Uwe	Juniata College
50.	Le, Thuy	Bloomsburg State College
51.	Pietkiewicz, Diana	Bloomsburg State College

SPECIAL THANKS

When we decided to undertake this project, and start working on it a year ago, I don't think any of us knew how much work was actually involved. We found out - quickly. It would ill behoove us to reach the last page of this program without even attempting to make some mention of thanks to the many people who helped out in any way they could, as well as those who did a great deal more than their share. THANKS.....

- FIRST and foremost, to Dr. Edgar Howard: The help and guidance you gave us was immeasureable. It was exceeded only by your patience with Howard.
- To the Chemistry Department Faculty: Thanks for helping with the Judges and with answering what seemed at times to be an endless list of questions.
- To Anne, Bobbi, Chrissy, Florence & Regina: Thanks for helping with both the mailing and typing. If it were not for you, we would have to rely on Mancini's and Lieberman's handwriting.
- To Dory, for keeping the Library open and the copier working.
- To Paul C. for acting as banker and treasurer. We still don't know where the money came from but at least we'll be leaving before the IRS audits us next year.
- To Howard J. for sitting on us when someone had to.
- To Bev & Ed for not letting your liquid crystals interfere with your work, and keeping the office warm.
- To Craig "1883" Lieberman for all the paperwork, and the 50 different ways you sign your name.
- To Paul Mancini for "WHO CAN SAY" WHAT? (Not us.)
- To Ed - a special thank you.
- To Sandy, Karen, Dan, Eugene, Bob, Maryellen, Jamie, Carm and Lee ...Thanks! We couldn't do it without you - and to the people not listed here, your efforts did not go unnoticed. THANK YOU.

Special thanks to the
sponsors who made this day possible.

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Sigma-Aldrich Foundation Special Seminar Series Featuring

Dr. Alfred Bader

"The Rembrandt Project"

Washington University, Laboratory Sciences 300
Tuesday, May 1, Lecture 7:15 p.m.
Reception 6:30 p.m. the Rettner Gallery of Lab Sciences

"Archibald Scott Couper and Josef Loschmidt: A Detective at Work"

Univ. of Missouri - St. Louis, Benton Hall Room B451,
Wednesday, May 2
Reception 1:30 pm, Lecture 2:00 - 3:00 pm

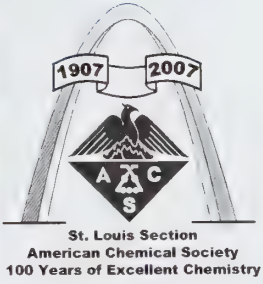
"The History of Aldrich and Sigma-Aldrich"

Sigma-Aldrich Life Science
Research Center, Room 1610
Wednesday, May 2, Lecture 7:15 p.m.
Reception 6:30 p.m. Book signing after seminar

As part of the St. Louis Section of the Amereican Chemical Society Centennial Celebration, Dr. Alfred Bader, founder of Aldrich Chemical Company is presenting three lectures. One held at Washington University, one at the University of Missouri-St. Louis, and one at Sigma-Aldrich Life Science Research Center.

Dr. Alfred Bader was born on April 28, 1924 in Vienna, Austria. Born into a family of Czech Jewish descent, he fled from Austria to England at age 14 to escape the Nazis. In 1940 he was deported to Canada and was interned at a camp in southern Quebec. He attended Queen's University, where he studied and received a Bachelor of Science in Engineering Chemistry in 1945 and a Masters of Science in Chemistry in 1947. He continued his education at Harvard University, earning a doctorate in chemistry in 1950. He founded the Aldrich Chemical Company in 1954. In 1975 Aldrich Chemical Company merged with Sigma Chemical Company to form the Sigma-Aldrich Corporation. In 1995, Dr. Bader published his autobiography, *Adventures of a Chemist Collector*, which details his experiences from Nazi-era refugee, to chemist magnate, to fine arts connoisseur. He has received many honors and honorary degrees over the years.

Sponsored by Sigma-Aldrich Foundation and St. Louis Section American Chemical Society celebrating 100 years.



The St. Louis Section gratefully acknowledges the financial support of Mallinckrodt Inc., Saint Louis University, Pfizer and Sigma-Aldrich for our programs.

SCHEDULE FOR DR. ALFRED BADER
1989 Hurd Lecturer

Wednesday, February 1

Arrival 2-3:00 p.m.	Lambert/Weeks
3:45 p.m.	Refreshments
4:00 p.m.	Lecture--Tech LR3
5:00 p.m.	Reception--Tech Faculty Lounge
Dinner	Joyce & James Ibers, Maria & Kenneth Poeppelmeier, Annalore & Wolfgang Sachtler

All conferences in Tech 3892 (Letsinger office)

Thursday, February 2

9:00 a.m.	F. Lewis
9:30 a.m.	L. Silver (Art History) Weeks escorts
10:30 a.m.	Lecture--Tech LR5
12:00 noon	Lunch with Graduate Students (Lauren Tonge)
1:30 p.m.	R. Silverman
2:00 p.m.	G. Ashley 3841
2:30 p.m.	E. Roskamp
3:00 p.m.	C. Lucchesi
3:45 p.m.	Refreshments
4:00 p.m.	Lecture--Tech LR3
Cocktails and Dinner	Charles Hurd Party

Friday, February 3

9:00 a.m.	K. Poeppelmeier
9:30 a.m.	J. Ibers
10:00 a.m.	H. Pines
10:30 a.m.	J. Brockwell
11:00 a.m.	Lecture--Tech LR4
12:00 noon	Lunch with faculty
1:00 p.m.	L. Allred
1:30 p.m.	W. Sachtler
2:00 p.m.	P. Stair
2:30 p.m.	P. Mackenzie
3:00 p.m.	F. Basolo
3:45 p.m.	Refreshments
4:00 p.m.	Lecture--Tech LR3
Departure	

ALFRED R. BADER

Alfred Bader was born in Vienna in 1924. Wartime stays in England and Canada led to Queens University where he earned a B.Sc. in Chemical Engineering, a B.A. in History, and an M.Sc. in Organic Chemistry. He earned his Ph.D. with Louis Fieser at Harvard and was employed by Pittsburgh Plate Glass Company in Milwaukee. In 1951, Dr. Bader began Aldrich Chemical Company which he ran part-time from a garage. He resigned from PPG in 1954 to devote full-time to Aldrich which ultimately became the world's foremost supplier of high-quality fine organic chemicals. In 1975, Aldrich merged with Sigma Chemical Company, a supplier of fine biochemicals, creating the Sigma-Aldrich Corporation of which Dr. Bader is currently chairman.

Chemists have been the beneficiaries of Aldrich products other than chemicals. Much more than a sales device, the Aldrich Catalog is a handbook of fine chemicals. The quarterly, Aldrichimica Acta, provides reviews by leading chemists. Available also are the Aldrich Libraries of Infrared and NMR Spectra and access to an extensive rare chemicals collection.

Beginning with his first acquisition at the age of ten Dr. Bader has assembled an important private collection of 17th-Century Dutch Masters. Among his many honors he is a Fellow of the Royal Society of Arts in London in recognition of his achievements as an art collector and historian, and his research in art restorations.

Alfred Bader and Charles Hurd have been friends for many years.

PROGRAM

"The History of Aldrich"

Wednesday, February 1
4:00 p.m.
Lecture Room 3, Tech

"The Bible Through Dutch Eyes"

Thursday, February 2
10:30 a.m.
Lecture Room 5, Tech

"The Uselessness of the Liberal Arts Education"

Thursday, February 2
4:00 p.m.
Lecture Room 3, Tech

"The Choice of New Products"

Friday, February 3
11:00 a.m.
Lecture Room 4, Tech

"The Adventures of a Chemist Collector"

Friday, February 3
4:00 p.m.
Lecture Room 3, Tech

Refreshments will be served at 3:45 for each of the 4:00 lectures.

CHARLES D. HURD

In 1970 the Northwestern University Department of Chemistry established a lectureship to inform our students and faculty on industrial research through direct interaction with scientific leaders in industry. It is entirely fitting that the lectureship was named in honor of Charles D. Hurd, Clare Hamilton Hall Research Professor Emeritus.

From the time of his initial appointment to Northwestern in 1925 Dr. Hurd has always had close ties with industry. His appreciation of industrial problems is witnessed by his service as a consultant to various companies over four decades, his twelve contributions to the patent literature, and his acknowledgment, in a recent historical sketch, of the importance of grants from industry in establishing organic research at Northwestern.

Professor Hurd's interests and accomplishments go far beyond the academic/industrial interface. His biography might be titled, with apologies to Boyle, The Eclectical Chymist. His scientific publications number about 300 and include the seminal monograph "Pyrolysis of Carbon Compounds," a proposal (now widely accepted) of quasi-cyclic transition states for certain reactions, important studies on the synthesis and reactions of ketene, and the discovery that carcinogenic hydrocarbons are produced from organic matter at temperatures around that of a burning cigarette.

In addition to his original research contributions and his talent as an educator, Dr. Hurd has given extensive service to chem-

istry. He was one of the founding editors of the Journal of Organic Chemistry, served as a consultant on all chemical terms in the unabridged Webster's Third New International Dictionary, and has contributed to various encyclopedias. His passion for correct nomenclature and the precise use of language has been recognized by the 1971 Austin M. Patterson Award "for contributions to the documentation of chemistry." The books, Organic Nomenclature: A Programmed Introduction by J. G. Traynham, Organic Chemistry by Smith and Cristol, and The Chemist's English by R. Schoenfeld were dedicated to Charles Hurd.

CHARLES D. HURD LECTURERS

1970-71	**Wesley T. Hanson**	Eastman Kodak Company
1971-72	**Byron Riegel**	G. D. Searle & Co.
1972-73	**William A. Franta**	Du Pont
1973-74	**Vladimir Haensel**	Universal Oil Company
1974-75	**William P. Slichter**	Bell Laboratories
1975-76	**Turner Alfrey, Jr.**	Dow Chemical U.S.A.
1976-77	**Howard L. Gerhart**	Carnegie-Mellon University
1977-78	**Ulrich Merten**	Gulf R&D Company
1978-79	**James F. Roth**	Monsanto Company
1979-80	**Alan Schriesheim**	Exxon
1980-81	**Keith McHenry**	Amoco Oil Company
1981-82	**Robert K. Grasselli**	The Standard Oil Company
1982-83	**Donald J. Peterson**	The Procter & Gamble Co.
1983-84	**Robert E. Naylor**	Rohm & Haas Company
1984-85	**Ralph F. Hirschmann**	Merck & Co., Inc.
1985-86	**George S. Hammond**	Allied Corporation
1986-87	**Thomas J. Savereide**	3M Company
1987-88	**Jack C. Chang**	Eastman Kodak Company

The Charles D. Hurd Lectures in Chemistry

1988-89 Lecturer

Alfred R. Bader, Chairman
Sigma-Aldrich

February 1-3, 1989
Northwestern University
Evanston, Illinois

School of
Science and Humanities

Distinguished Lecturer

Dr. Alfred R. Bader

"Chemistry In Art"

4 p.m.
October 7, 1982
Neff 101

Alfred Bader was sent in 1938 from his native Austria to England to escape the Nazi regime. Later, he moved to Canada where he earned a B.Sc. in chemical engineering, a B.A. in history, and an M.Sc. in chemistry from Queens University, Kingston, Ontario. After working at a paint company for several years, he continued his education at Harvard, where he earned a Ph.D. under the renowned organic chemist, Louis Fieser.

Continuing his employment with the paint company, he was transferred to Milwaukee. After several years, he joined Aldrich Chemical Company, which at that time operated out of a garage. Subsequently, Dr. Bader developed this company into a multinational corporation now holding a significant portion of the world market for specialty chemicals.

Dr. Bader has an established reputation as a scientist. His research has contributed to the development of new methods of synthesis and the elucidation of mechanisms of organic reactions. Under his leadership, compilations of infrared and nuclear magnetic resonance spectra have been assembled and published in the Aldrich Library of Infrared Spectra and the Aldrich Library of Nuclear Magnetic Resonance Spectra. These volumes, useful for checking the purity of reagents and for identifying the products of chemical reactions, are widely used compilations in chemical laboratories.

Dr. Bader is well known for his research into and restoration of paintings of 17th-century Dutch Masters. He has acquired an extensive collection of paintings and has donated a number of these to the Milwaukee Art Center, where he serves as guest curator. During 1976 he organized an exhibit at the Milwaukee Art Center entitled "The Bible through Dutch Eyes" which brought together over 70 paintings by Dutch and Flemish artists. Recognition of Bader's status as a serious collector and scholar is demonstrated by his selection as a Fellow of the Royal Society of Arts.

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Science and Humanities

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TODAY!

The Adventures of a Chemist-Collector

Dr. Alfred Bader, Chairman Emeritus, Sigma-Aldrich Corp.

thrills! treasure in a junk store
nerves of steel! genuine. . .or fake?
adventure! 17th Century pigments under centuries of grime
drama! to restore, or not to restore

While Dr. Bader was building Aldrich Chemical into the world's foremost supplier of fine organic chemicals, he was also assembling one of the select private collections of Dutch Old Master paintings to be put together in our time. Come and share the intrigues and adventures of the collecting connoisseur! His talk will be accompanied by numerous slides.

Scripps Clinic Amphitheater
Friday, January 31, 4PM

MARQUETTE UNIVERSITY

FINE ARTS LECTURE · 1983

You are cordially invited to attend
The Marquette University Fine Arts Lecture 1983

The Bible Through Dutch Eyes

by Dr. Alfred Bader
Art Collector and Connoisseur

Thursday, October 6th, 1983, 8:00 p.m.
Todd Wehr Chemistry Building, Room 100
Marquette University

Reception immediately following

Parking available in Lot H
(13th Street and Wisconsin Avenue)

The 1983 Fine Arts Lecture is sponsored by the Marquette University Committee on the Fine Arts with the cooperation of the Marquette Women's Council.

MU
Marquette
University

PAINTING CREDIT

Abraham's Sacrifice
Nicolaas Maes
Dutch (1634 1693)
Oil on canvas, 44½ x 35½

THE

MARQUETTE

FINE ARTS LECTURE 1983

THE BIBLE THROUGH DUTCH EYES

by

DR. ALFRED BADER

Thursday, October 6, 1983

8:00 p.m., Todd Wehr Chemistry, 100

Sponsored by the Marquette University Committee on the Fine Arts with the cooperation of the Marquette Women's Council and the Marquette Students for the Fine Arts.

Marquette University is honored to present DR. ALFRED BADER, international art collector, scientist and industrial leader, to deliver the Marquette Fine Arts Lecture, 1983. He has lectured at major universities across the world including Harvard, Oxford, and Cambridge Universities on topics in the fields of art and science.

Dr. Bader is well known for his research of paintings by 17th century Dutch Masters and his extensive private art collection of paintings from this period. Recognition of his status as a collector and scholar is demonstrated by his selection as a Fellow of the Royal Society of Arts and as guest curator for the exhibition, "The Bible Through Dutch Eyes," at the Milwaukee Art Museum.

As scientist and industrialist, Dr. Bader's contributions are vast. He is presently the chairman of Aldrich Chemical Company, one of the nation's largest chemical manufacturing and vending corporations. He has been selected twice as an American Chemical Society Tour Speaker and was given the Milwaukee Section American Chemical Society Award for his contributions to the chemical community.

Dr. Alfred Bader was born in Vienna, Austria, in 1924. He received his B.S.c., B.A. and M.S. degrees at Queens University and his M.A. and Ph.D. degrees from Harvard University. He serves as a trustee of Queens University, Kingston, Ontario, and is a benefactor of numerous institutions including the Milwaukee Art Museum, Oberlin College, and the Minneapolis Institute of Arts.

PROGRAM

WELCOME: Dr. Curtis L. Carter, Chairman
Marquette University
Committee on the Fine Arts

INTRODUCTION: Rev. William Dooley, S.J.

LECTURE: Dr. Alfred Bader

THE BIBLE THROUGH DUTCH EYES

One of the remarkable aspects of life in seventeenth-century Holland was the study of the Bible and the identification of the Dutch people with Biblical characters. In many Dutch families the Bible was read daily, page by page, every morning. Biblical events which are obscure to us were common knowledge.

In Western art before the 17th century and in the Southern Baroque art of the period, New Testament depictions had greatly outnumbered those of the Old Testament. Most of the Biblical persons depicted in Baroque paintings were highly idealized and bore little resemblance to the life of the people. In Dutch art of the 17th century, however, there are about as many Old Testament as New Testament subjects. And, generally, the Biblical characters are depicted as the Dutch saw themselves, though sometimes in archaic dress. Most significantly, the Dutch perceived Biblical characters as real people, and their emotions as not very different from their own.

1983 FINE ARTS LECTURE SPONSORS:

MARQUETTE UNIVERSITY COMMITTEE ON THE FINE ARTS

Dr. Curtis L. Carter, Chairman
Mrs. Dorothy Biwer
Mr. Warren Bovee
Ms. Mary Carlson
Mr. Marvin Fishman
Mr. David Foran
Mr. William Gardner
Dr. Daniel Haworth
Dr. Robert P. Hay
Rev. D. Thomas Hughson, S.J.
Dr. Ronald Jodat
Mrs. John H. Ladish
Mrs. Charles A. Prudell
Sr. M. Paton Ryan, R.S.M.
Mr. Michael Uhlarik

MARQUETTE WOMEN'S COUNCIL

Mrs. Robert S. Pavlic, Chairman

Lecture Committee:

Mrs. Francis J. Millen
Mrs. Robert H. Oberndorfer

MARQUETTE STUDENTS FOR THE FINE ARTS

Mr. Dan Mueller, President

Lecture Committee:

Mr. Jeff Schalk
Mr. Mike Selenke

Spring
REUNION
2004

PROGRAM of EVENTS

JUNE 3 – 6

UNIVERSITY OF TORONTO

Spring REUNION

Spring is here and that means U of T's Spring Reunion is just around the corner. Don't miss the chance to come back to campus and celebrate with your fellow alumni. From June 3 to June 6, U of T alumni from honoured class years 1924, '29, '34, '39, '44, '49, '54, '59, '64, '69, '74 and '79 will be flocking back to campus to reunite with classmates. Many faculties and colleges are also honouring alumni from 1984, '89, '94 and '99. On Saturday, June 5, graduands of the Class of 2004 are also invited to join the festivities.

Spring Reunion is your opportunity to renew old acquaintances and share memories. Read more about some of the activities planned for this special weekend and reserve your place today!

INTRODUCING OUR CHAIR

We are pleased to announce that this year's honorary chair of Spring Reunion is Norman Jewison, CC (BA 1949 Vic, LLD 1985, DLittS 2001) Incoming Chancellor, Victoria University

Chair and chief executive officer of Yorktown Productions Ltd., chair of U of T's Annual Fund and honorary patron of Spring Reunion 2004, he is a celebrated film director and producer whose films have earned 46 Academy Award nominations and 12 Academy Awards. His films include *Moonstruck, Agnes of God, The Hurricane, Fiddler on the Roof, And Justice for All* and *A Soldier's Story*.

Mr. Jewison is the founder and co-chairman of the Canadian Film Centre. He was made an Officer of the Order of Canada in 1982, a member of the Order of Ontario in 1989 and promoted to Companion of the Order of Canada in 1992.

In 1998, he was honoured with the Irving Thalberg Award for lifetime achievement. The award is the most prestigious given by the Academy of Motion Picture Arts and Sciences.

He has also received the Upton Sinclair Award, the George Eastman Kodak Award for his work on *The Hurricane* and was named Best Director at the Berlin Film Festival in 1988. As a filmmaker, his work has been honoured by many film festivals around the world.

He holds honorary degrees from several Canadian and American universities.

St. Hilda's College Alumnae Association Annual Meeting
10 a.m.
Adams Room

St. Hilda's College Alumnae Association Lunch
Noon
Guest speaker: Lynda Reeves (BA 1976 TRIN), host of House & Garden Television and founder of *Canadian House & Home* magazine: It's Only Decorating!
Advance tickets required

Return to the Classroom
for a seminar from the Trinity College Courses
2:30 p.m. – 3:30 p.m.
Limited registration

Tours of the John W. Graham Library
2:45 p.m., 3:45 p.m. and 4:45 p.m.

Tea Party in the Provost's Lodge for Grads of 1929, '34, '39, '44 and '49
4 p.m. – 5:15 p.m.
By invitation

Evensong
5:30 p.m.
Trinity College Chapel

Garden Party in the Quad and Strachan Hall
6 p.m. - 8:30 p.m.
Advance tickets required

Eucharist
9:30 a.m.
Trinity College Chapel

After the service there will be a light breakfast in the Combination Room.

Many honoured years are planning special events. Watch for a separate mailing from Trinity College with further details and registration forms for all Trinity events. Please visit our website www.trinity.utoronto.ca and click on Alumni Affairs, then Spring Reunion, to find the name of your class representative.

For more information, please call 416-978-2651, or e-mail juliaparis@trinity.utoronto.ca

UNIVERSITY COLLEGE

Honoured Years "Welcome Back" Cocktail Reception and College Dinner
5 p.m. – 9:30 p.m.
University College

For more information or to purchase your tickets, please call 416-978-2968.

UNIVERSITY OF TORONTO AT MISSISSAUGA

Spring into the Future with UTM
Honouring 1974, '79, '84, '89, '94, '99

UTM Mini-Midway
Beginning at Noon

A Taste of UTM
Showcasing the cuisines of our multicultural campus.

The book store will be open from noon to 5 p.m. Residence will be available for overnight accommodation.

More information will be mailed to you. Please call 905-569-4924 or e-mail events@utm.utoronto.ca

Check the UTM website at: www.utm.utoronto.ca

Classes Without Quizzes
"Do You Sing Your Own Song: Five Things You Have to do to be Successful" – Mike Lavelle
"Forensic Science: CSI Mississauga" – Professor Ray Cummins
"The Food We Eat: GMO's – the Mystery and the Myths" – Professor Paul Horgen

Campus Tours

Principal's Garden Party and Grad Reception
Join Robert Sabga (BSc 1979 UTM), chair, as he welcomes the graduating class of 2004.

UNIVERSITY OF TORONTO AT SCARBOROUGH

[illegible]

Expansion and Excitement: UTSC in the New Millennium
Exhibit and Reception
11:30 a.m. – 2 p.m.
Music Room, Hart House
7 Hart House Circle

Back by popular demand! Alumni and friends of UTSC are invited to an exhibit that takes a look at the history of the campus and highlights its future growth. To RSVP or provide memorabilia for the exhibit, contact Drew Dudley at 416-287-7085 or e-mail dudley@utsc.utoronto.ca

VICTORIA COLLEGE

[illegible]

The Rembrandt Research Project and the Collector
4 p.m.
Emmanuel College, Room 001

All honoured years are welcome to attend this lecture given by Dr. Alfred Bader.

[illegible]

Principal's Reception and Dinner
5:30 p.m. – Reception
6:30 p.m. – Dinner
Alumni Hall, Old Vic
$35 per person

Chapel Service and Sunday Social
11 a.m. – Old Vic Chapel
Noon – Sunday Social, Burwash Dining Hall
$15 per person for the Sunday Social Luncheon

Please visit the Vic website http://vicu.utoronto.ca/alumni/reunion for information about class events, or contact the Vic Alumni Office at 416-585-4500 or e-mail vic.alumni@utoronto.ca

WOODSWORTH COLLEGE

Alumni Association of Woodsworth College Annual General Meeting
6:30 p.m.
Woodsworth College Residence
Refreshments served

Continental Breakfast and Lecture
8:30 a.m. – Breakfast
9:30 a.m. – Lecture
Woodsworth College Residence
Cost: $15

Join us as Professor Alan Young speaks on his recently published book *Justice Defiled: Perverts, Potheads, Serial Killers and Lawyers.*

For information or to purchase tickets, please contact Stephanie Woodside at 416-978-5301 or e-mail events@wdw.utoronto.ca

NOTES

SPECIAL THANKS TO OUR SPONSOR FOR THEIR GENEROUS SUPPORT

UNIVERSITY OF TORONTO ALUMNI ASSOCIATION

UTAA

For updates, please visit

www.springreunion.utoronto.ca

1999/2000

SCIENCE & TECHNOLOGY:
the Next Millennium

Dr. Alfred Bader:

ADVENTURES OF A CHEMIST COLLECTOR

WEDNESDAY, OCTOBER 06, 1999
7:00 PM
SCALES FINE ARTS CENTER ROOM 102

(reception to follow immediately after talk)

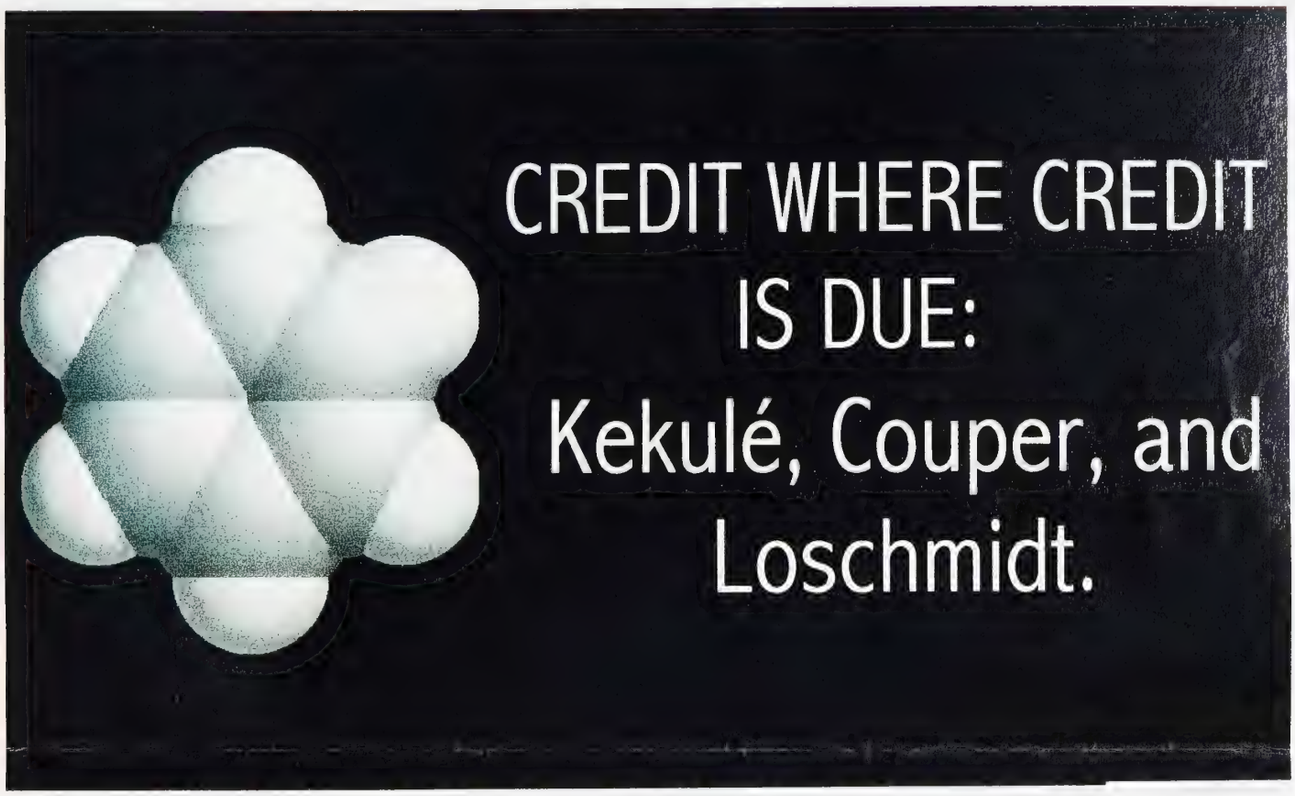
~all are welcome~

WAKE FOREST
UNIVERSITY

Sponsored by: Science & Technology: The Next Millennium, Departments of Chemistry and Art, and Marshallton Research Laboratories, Inc.

1999/2000

SCIENCE & TECHNOLOGY: *the Next Millennium*



A Talk By:

DR. ALFRED BADER

TUESDAY, OCTOBER 05, 1999
4:00 PM
SALEM HALL ROOM 10
(reception from 3:30 – 4 PM, Salem Hall 210)

~all are welcome~

WAKE FOREST
UNIVERSITY

Sponsored by: Science & Technology: The Next Millennium, the Department of Chemistry, and Marshallton Research Laboratories, Inc.

Georgia Museum of Art

presents two lectures by

Dr. Alfred Bader

Thursday, October 7, 1999
2:30 p.m.

"The Rembrandt Research Project and the Collector"

Join us this afternoon as Dr. Alfred Bader, a well-known collector and chemist, discusses the ongoing work of the Rembrandt Research Project and its effect on collectors of Old Master art.

and

5:30 p.m.

"The Joy of Collecting: Hunting for Old Masters"

Join us this evening as Dr. Alfred Bader discusses the excitement of locating and collecting treasures of great art.

Lectures will be held in the M. Smith Griffith Auditorium.

Georgia Museum of Art • 90 Carlton Street • University of Georgia • Athens, Georgia 30602-1719
706/542-GMOA (4662)

UCL Department of Chemistry

Today's Lecture

Dr. Alfred Bader

Richard Anschütz, Archibald Scott Couper and Josef Loschmidt: A Detective at Work

1600 in the Ramsay Lecture Theatre

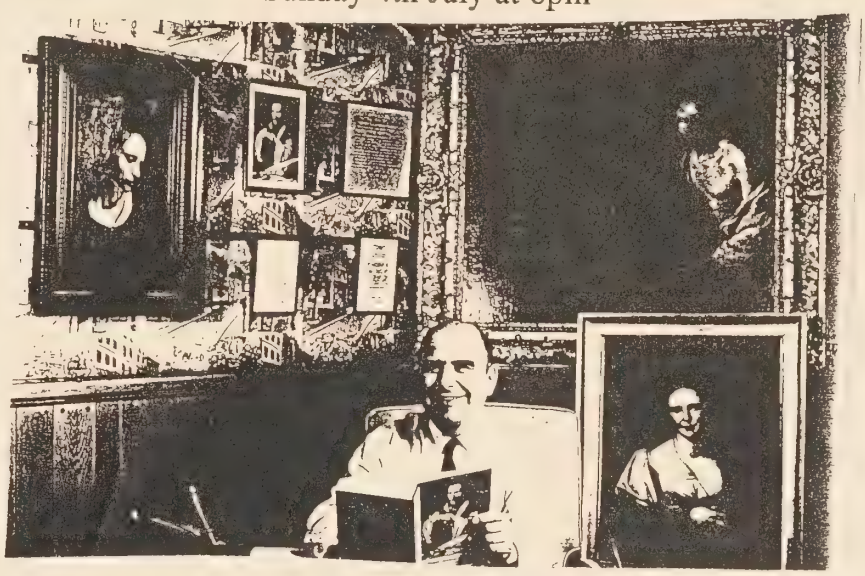
Monday 8th July 2002

"THE ADVENTURES OF A COLLECTOR"

REMBRANDT AND HIS SCHOOL

DR. ALFRED BADER

Sunday 4th July at 8pm



Following one of our most successful lectures "The Bible in Dutch Art" last December by this distinguished American speaker, which was attended by over 250 people, we have been requested to invite him back to give an illustrated talk about his own important collection of paintings, mainly of Biblical subjects.

*** Audience restricted to 50 to allow discussion and questions**

*** Admission by ticket only which must be purchased in advance from the Spiro Institute**

*** Price £7.50 including refreshments**

Venue: The Spiro Institute, The Old House,
Kidderpore Avenue, London NW3 7SZ. 071-431-0345

NAME.....

ADDRESS.....

:.....

I ENCLOSE A CHEQUE FOR .....

"THE ADVENTURES OF A COLLECTOR"

REMBRANDT AND HIS SCHOOL

DR. ALFRED BADER

Sunday 4th July at 8pm

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NAME.....

ADDRESS.....

:.....

I ENCLOSE A CHEQUE FOR .....

CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE
INSTITUT DE CHIMIE DES SUBSTANCES NATURELLES
91190 GIF-SUR-YVETTE

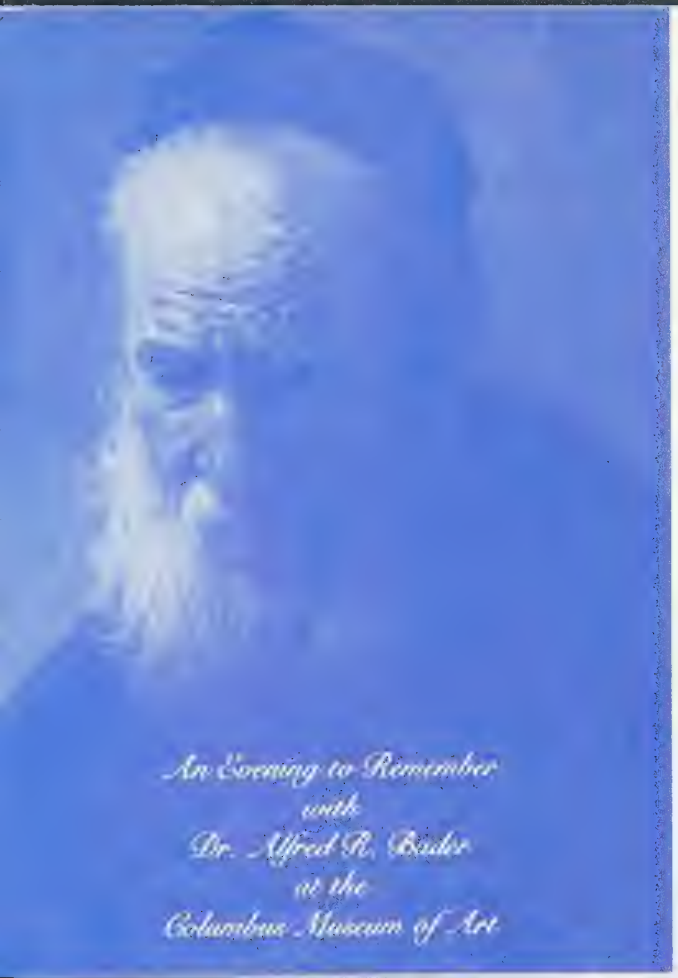
CONFERENCE

MERCREDI 7 DECEMBRE 1983 A 11H00

Dr. Alfred BADER, Founder and Chairman of the Board
(Aldrich Chemical Company, U.S.A.)

"The Foundation of the Aldrich Chemical Company and its Contribution to the Chemical Community"

TÉLÉPHONE : (6) 907 78.28 TELEX : CNRSGIF 691 137 F



An Evening to Remember
with
Dr. Alfred R. Bader
at the
Columbus Museum of Art

the
CHEMICAL RECORD®
REG U S PAT OFF

SEPTEMBER 1983

VOLUME XXVI NUMBER 5

Hotline News No. 421-3600 x2923

Columbus Section ACS
CHEMICAL RECORD
Chemical Abstracts Service
P.O. Box 3012
Columbus, Ohio 43210

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Dated Material Do Not Delay

MEETING NOTICE

A Discussion of the Evaluation & Restoration
of old Paintings by Dr. Alfred R. Bader
Chairman of Aldrich Chemical Company

TUESDAY, SEPTEMBER 13, 1983

The Columbus Museum of Art
480 E. Broad Street

7:00 P.M. Reception and Social Hour in the Sculpture Garden Featuring:

- Guided tours of all the Gallerys of the Museum
- Wine and Cheese—Courtesy of Ashland Chemical Company
- Music by a Quartet from the Metropolitan Chamber Orchestra

8:30 P.M. Dr. Bader's talk

For reservations call (614) 890-3000 x316 by 4:00 p.m., Wednesday, September 7. Cost — $2.00 per person.

CHEMISTRY IN ART

As a collector of old master paintings I look every year at several hundred old paintings—in junk and antique stores and at auctions all over the world—and have to decide, usually within minutes, whether a painting is worth buying. The first criteria is, of course, the general artistic merit of the work—often hard to discern in paintings covered with centuries of dirt. Secondly, is the painting really what I think it is. I am offered a painting said to be by a Dutch 17th century artist—are the pigments those used by 17th century artists? Are the wood or canvas and the ground those used by 17th century Dutch artists? Once I have acquired an old painting, the surface dirt is usually easily removed with mild solvents, and the decision has to be made how much restoration to do. Is the painting an original, a workshop production or a later copy? Is the painting in its original size? What is the condition of the support—be it canvas, wood, metal or slate? How much old restoration is there and should it be removed? Almost every old painting has some overpaint—was this added to hide losses or subjects considered undesirable by previous owners? If the painting is signed, is the signature original? The last questions can generally be answered by a combination of physical and chemical means, chiefly examination with UV light and under a magnifying glass, and test with various solvents. Many specific examples will be given to illustrate these questions and their answers.

ALFRED R. BADER

Alfred R. Bader, a Milwaukee resident and industrialist is truly a citizen of the world. He was born in Vienna, Austria in 1924, but was sent to England in 1938 by an aunt to escape Hitler and the Nazis. However, because an uncle was in fact a Nazi he was interned in Canada as a Prisoner of War, but was paroled to attend Queens University in Kingston, Ontario. There he earned a BSc. in Chemical Engineering, a BA in history and an MSc in Organic Chemistry. After working at Murphy Paint Company as a chemist for several years he was accepted at Harvard and earned a PhD under Louis Fieser, one of the prominent organic chemists of the century. He returned to Murphy which was now a part of Pittsburgh Plate Glass Company and transferred to Milwaukee. He was so fond of Milwaukee after several years that he refused a transfer and joined Aldrich Chemical Company, which then operated out of a garage on Farwell Avenue.

Dr. Bader has developed Aldrich Chemical Company into a multi-national corporation renowned for its wide selection of high purity organic specialty chemicals, and its efforts to bring new methods of chemical synthesis to research chemists

He has also pursued a life-long interest in art—his first acquisition was as a boy in Vienna—and art history. Business trips to Europe are often combined with visits to art galleries and auctions. The Dutch Masters of the 17th century are his specialty. His efforts to identify and restore paintings of this period have brought him acclaim equaling that from his work at Aldrich Chemical Company. In fact, one of his most popular speeches is one dealing with the chemistry of restoring works of art.

Bader has made numerous contributions to Oberlin College and Queens University and serves the latter as a trustee. He has taught Synagogue School at Temple-Emanu-El B'ne Jeshrun in Milwaukee for over 25 years.

A NEW LOOK FOR MONTHLY MEETINGS

For the past two years, attendance at meetings has averaged 65, only 5% of our membership, suggesting that we are not providing programs that interest the majority of our members. This year, we are attempting some changes in programming.

1. We are eschewing highly technical topics in favor of more general ones. Some of the new programs have an aura of entertainment; several are of interest to a spouse or friend; one (December) is only peripheral to chemistry; all are educational.
2. To enhance the enjoyment of the social aspects of our meetings, we are securing sponsors to underwrite the costs of social hours and to provide exhibits of new products/instrumentation. At several meetings, tours at or near meeting sites have been arranged (Art Museum, Mead, Owens-Corning, OCLC, Ross, Franklin Park Conservatory Easter Show). There is even a golf outing (Mead).
3. Appreciating that no one night is ideal for all members, we are holding meetings this year on various days. The increasingly expensive dinner meetings will be reduced this year. Half of the meetings will feature hors d'oeuvers, wine and cheese, or a dessert smorgasbord.
4. To make it easier for you, the advance payment requirement of past years has been eliminated and a single phone number is available for reservations. However, this more flexible reservation policy means the Section may have to pay for those who cancel late or do not attend. Therefore, we may have to ask for payment if your reservation is not used.
5. For your convenience, the wallet-size reference card in this issue summarizes meeting dates and topics. Clip it and mark your social calendar. We enthusiastically preview some highlights of upcoming meetings:
   October 17—A beautiful fall drive to Chillicothe for an evening of "paper chemistry" at Mead. For golfing en-

thusiasts, an afternoon on the links. A tour of the new paper mill follows an explanatory presentation by Mead chemists.

November 14—The incomparable showmanship of Dr. Hubert Alyea, Professor Emeritus from Princeton University will be demonstrated in a lecture on "Lucky Accidents" at Denison University, following a workshop for chemistry teachers. The evening is the occasion of the high school teacher's award presentation.

December 13—Several views of the fascinating world of computers await you with a tour of the OCLC facilities in Dublin, a discussion of choosing and using a microcomputer, and a mini-microcomputer show.

February 21—The Section proudly hosts ACS President Warren Niederhauser from Rohm and Haas. He will be sharing his views of the roles of the Society and soliciting your concerns, as well. We will gather at Chemical Abstracts for the presentation, then socialize afterwards with lively discussion and dessert.

March 19—The annual Columbus Section Award at a place not yet determined.

April 18—Come welcome spring back to Ohio with a visit to the Spring Flower Show at the Franklin Park Conservatory and a talk on the controversial Shroud of Turin by Dr. Eric Jumper, co-coordinator of the recent research investigations.

May 21—A far-out lecture on the chemistry of interstellar space, funded by the American Astronomical Society.

We value your reactions to these changes. The measure of their merit will be reflected in meeting attendance. Vote your support with your presence.

Bill Brown
Jerry Jenkins
Program Co-Chairmen

NOMINATIONS

The following slate of candidates for Columbus Section offices has been prepared by the Nominating Committee in accordance with the Bylaws.

Chairman-Elect:
- H. H. Krause (Battelle)
- Theodore C. Wilkinson (Ashland)

Secretary:
- Loretta H. Rolle (Westreco)
- George F. Eckert (Capital)

Treasurer:
- J. Richard Toler (Owens-Corning)
- George H. Bare (Ross Laboratories)

Councilor and Alternate Councilor:
- Larry Anderson (OSU
- Helen Churella (Ross Laboratories)
- Kenneth Greenlee (Albany)
- Jerry Jenkins (Otterbein)
- Peter Menardi (Ashland)
- Rex Ogle (Otterbein)
- Mary Scanlan (CAS)
- Robert Schwertzel (Battelle)

Members and Associate Members of the Section may add additional names to the slate by filing with the Secretary of the Section (Phil Pollick at CAS) by October 1 a written petition having the bona fide signatures of not less than five (5%) percent of the members and associate members on the current year rolls of the Section. The current membership of the Section is 1433. Since the deadline for the November issue of the *Chemical Record* which contains the ballots is October 1, a photograph and brief biography of the candidate should be submitted along with the petition.

According to the Section Bylaws, candidates for the offices of Councilor and Alternate Councilor have been merged. The two persons receiving the highest votes will become Councilors, and the two persons receiving the next highest votes will become Alternate Councilors.

Nominating Committee
William Hoffman, Chairman

The CHEMICAL RECORD, official newsletter of the Columbus Section of the American Chemical Society, is published monthly, September through May, except January. Opinions expressed by the editors or our contributors do not necessarily reflect the official positions of the Columbus Section.

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Chemical Abstracts Service
P.O. Box 3012
Columbus, Ohio 43210

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Adv. Manager's Telephone: 421-3600, ext. 2273

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Printed by—Keyline Graphics

CATALYSTS CORNER

Thanks to Mark Messerly who has agreed to serve as a Catalyst. Mark is employed by Hanna Chemical Coatings Corp. and can be reached at 294-3361.

Now that the summer break is over we can renew our efforts for meeting our membership goals. Although 48 new members have joined the Columbus section since the beginning of the year, only 15 of those members have been credited to the section. A significant number of the new members have submitted applications from ACS publications. I think this indicates we ned to redouble our efforts in contacting prospective members. The potential is there if we make the effort. The section earns $5.00 for each new membership and $2.50 for each reinstated membership initiated from within the section. We need *35* new members to attain our goal of 50.

NEW COURSE ANNOUNCEMENT

A 10-week course on
"Programming Microcomputers in Basic"
7 - 9 p.m.
Beginning Wednesday evening, September 13
Continuing through November 16
Taught by
Dick Hang & Clyde Kerns
OSU, Retired
Cost for ACS Members: $40
Cost for Non-Members: $50

An optional, extra-cost laboratory session for those without access to a microcomputer will meet for an additional two hours a week.

If you did not receive a flyer or need more information, please call:

Pete Menardi at (614) 889-3580
or
Bill Brown at (614) 889-3963

HIGH SCHOOL INTEREST GROUP

The Columbus Section of ACS welcomes all high school chemistry teachers to their monthly meetings. In November, the high school teachers are invited, as guests of the section, to the teacher award banquet. Watch for more information in the October issue. This meeting gives teachers a chance to meet other teachers, both high school and college, as well as chemists from the central Ohio area.

In its continuing support of high school chemistry, the American Chemical Society publishes *Chemunity* for teachers and has started a news magazine called *Chem Matters for Students*. *Chemunity* is free and *Chem Matters* is $1.80 per year. Both are issued quarterly. For more information send to:

1155 16th St. N.W.
Washington, D.C. 20036

If you have questions or suggestions on how the Columbus Section can help chemistry teachers, contact Peggy C. Sheets, Upper Arlington H.S., 1650 Ridgeview Rd., Columbus, Ohio 43221, phone 488-3105.

PATTERSON-CRANE AWARD

Section Chairman Gwil Owen, Jr. (r) presents the 1983 Patterson-Crane Award to Dr. Eugene Garfield (l) on Monday, May 16, 1983.

COLLEGE SENIOR AWARD WINNERS - 1983

First row (l to r): Brian L. Cousins (Ohio Wesleyan), Thomas Morse (Capital), Keith Hildebrand (Wittenberg), Victor Jochem (Denison). Second row (l to r): Mitchell Butler (Otterbein), Julie Ann Hutt (OSU), Shayne Fawcett (Muskingum), Carolyn Wright (Ohio Dominican), Robert E. Gardiner (Kenyon)

OSU SHORT COURSES

Basic Statistical Quality Control Methods—September 12-14, 1983. This is a course for production supervisors, inspectors, quality analysts, design and production engineers, and others concerned about quality control in production and process industries and service organizations.

Applied Nonparametric Statistics—September 12-14, 1983. This course is designed for anyone who must either analyze or interpret a wide variety of data sets. Those attending should be familiar with basic terminology used in hypothesis testing and estimation.

These course will be held at The Ohio State University in Columbus, Ohio. For further information contact: Office of Continuing Education, The Ohio State University, 2400 Olentangy River Road, Columbus, Ohio 43210. (614) 422-8571.

CHEMICAL RECORD DEADLINES

Issue	Date
October	September 2
November	October 1
December	October 28
February	January 6
March	February 3
April	March 2
May	April 6

UNEMPLOYED? NEED HELP?

Happen to me? Never! If it does here are some tips and resources that may be useful.

1. Don't drop out. Stay in touch with people. If a group was laid off at the same time, form a network to give support and exchange information.
2. Review your experience and interests in order to define your job objective. Be specific rather than trying to cover all possibilities. This may require several versions of your resume to cover your area of interest. Restate your job objective in the cover letter and show how you would fit in that particular organization. Do not use a form letter!
3. Research the location and types of organization where you want to work and could fit in. Read local newspapers, *C & E News,* appropriate trade journals, *Wall Street Journal,* annual report. Other resources: *Industrial Research Laboratories* with geographic and alphabetical indexes (available OSU Main Library and Columbus Public Library), local phone books, professional organizations, other persons that recently obtained employment, and contacts you make while searching for employment.
4. Find openings through contact referrals. Make a list of people you know who could tell you of a job opening or refer you to someone else that may know of a job opening. It is important that you make these persons aware that you are not pressuring them to hire you but want information on possible openings. It is important that you expand your thinking to include all the persons that can help you. Don't overlook persons at your former company. Eventually you will have a card file of names and affiliations. Many times someone will ask to see your resume and after reviewing it will give you more referrals.
5. Apply for employment based on the information from your contact—direct to a person or to a personnel employee.
6. Recruiters: check listings in *C & E News* (one national firm locally). Remember they choose you as a client.
7. ACS Employment Clearing House and free ads in *C & E News.* Through employment clearing house at national ACS meeting preliminary interviews can be obtained at the national meeting. See *C & E News* for details.
8. College placement offices will usually assist alumni.
9. Places to apply where job listings are available:

   Ohio State Professional Employment, Archer House 2130 Neil Ave., 422-9380, weekly listings (Mon.) "green sheets" cover all openings

   Federal Job Information, 200 W. 2nd St., Dayton, Ohio 45402, 513-225-2720

   State: 30 E. Broad St., B-1, bulletins every 2 weeks 466-4026, jobline 466-9069

   City: 50 W. Gay St., 501, 222-8300, listing of jobs open

Phyllis Bean Brusky

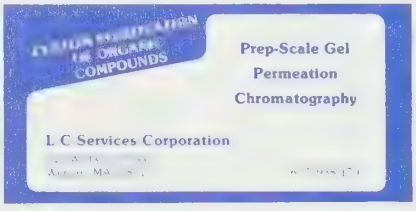
COLUMBUS SECTION ACS PROGRAM 1983-1984

Sept. 13 (Tu)	Columbus Museum of Art—Dr. Alfred Bader, "Chemistry in Art" 7:00 p.m.—Reception/Tour, 8:30 p.m.—Talk
Oct. 17 (M)	Mead Paper (Chillicothe)—"Paper Making and Pulping" 2:00—Golf, 6:00—Social Hour/Dinner, 7:45—Talk/Tour
Nov. 14 (M)	Denison University—Professor Hubert Alyea, "Lucky Accidents" 4:30—Tour of Owens-Corning Labs, 6:00—Social Hour/Dinner at Granville Inn, 8:00—Talk
Dec. 13 (Tu)	OCLC—"Choosing and Using a Microcomputer" 7:00—Talk, 8:00—Tour and Computer Show
Feb. 21 (Tu)	Chemical Abstracts Service—ACS President Warren Niederhauser 7:00—Talk followed by reception
Mar. 19 (M)	Columbus Section Award—To be Announced
Apr. 18 (W)	Franklin Park Conservatory—Dr. Eric Jumper, "The Shroud of Turin" 7:00—Talk, 8:15—Dessert, 9:00—Tour
May 21 (M)	Ross Laboratories—"Chemistry of Interstellar Space" 5:30—Tour, 7:00—Hors d'oeuvres, 8:00—Talk

To place reservations, please call (614) 890-3000 x316

PAQUETTE ELECTED TO NATIONAL ACADEMY

Dr. Leo A. Paquette, Professor of Chemistry at the Ohio State University and Chairman-Elect of the Columbus Section, has been named to the prestigious National Academy of Science. There are only six other members of the Academy in Ohio. Leo has written more than 500 research papers and holds more than 40 patents. His work drew national attention in 1981 when he produced an organic molecule which may be successful in fighting some viruses.



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AMERICAN CHEMICAL SOCIETY

CENTRAL OHIO VALLEY SECTION

SEPTEMBER MEETING

DATE: Wednesday, September 14, 1983

TIME: 6:00 p.m. Social Hour
7:00 p.m. Dinner (from menu)
8:00 p.m. Program

PLACE: Western Steer Restaurant
2138 5th Street Road
Huntington, W.Va.

SPEAKER: Dr. Alfred Bader

Dr. Bader is Chairman of Aldrich Chemical Company. Dr. Bader developed Aldrich from a garage operation in Milwakee into a multi-nationalcorporation which holds about 40% of the market for high purity organic speciality chemicals. He has also pursued a life-long interest in art. The Dutch Masters of the 17th century are his speciality. His efforts to identify and restore paintings of this period have brought him acclaim equalin that from his work at Aldrich.

TOPIC: CHEMISTRY IN ART (see attached abstract)

If anyone has old paintings about which they would like advice regarding restoration or identification, Dr. Bader would be happy to look at them before his talk.

NOTE: As always, your spouse or guest is welcome. If you wish to come only for the meeting and lecture, please feel free to do so.

Dr. Alfred Bader

CHEMISTRY IN ART

As a collector of old master paintings I look every year at several hundred old paintings--in junk and antique stores and at auctions all over the world--and have to decide, usually within minutes, whether a painting is worth buying. The first criteria is, of course, the general artistic merit of the work--often hard to discern in paintings covered with centuries of dirt. Secondly, is the painting really what I think it is. I am offered a painting said to be by a Dutch 17th century artist--are the pigments those used by 17th century artists? Are the wood or canvas and the ground those used by 17th century Dutch artists? Once I have acquired an old painting, the surface dirt is usually easily removed with mild solvents, and the decision has to be made how much restoration to do. Is the painting an original, a workshop production or a later copy? Is the painting in its original size? What is the condition of the support--be it canvas, wood, metal or slate? How much old restoration is there and should it be removed? Almost every old painting has some overpaint--was this added to hide losses or subjects considered undesirable by previous owners? If the painting is signed, is the signature original? The last questions can generally be answered by a combination of physical and chemical means, chiefly examination with uv light and under a magnifying glass, and tests with various solvents. Many specific examples will be given to illustrate these questions and their answers.

My Friends:

I am sure that I am speaking for all of us being honored here tonight when I say that we are deeply moved by the occasion and want to thank you most sincerely.

And yet, speaking personally, I almost feel as if I were standing here under false pretences. I came to Milwaukee on a Wednesday in February of 1950, four days later I started teaching at Emanuel, and as time went on I became quite determined that if God will give me good health, I shall be teaching the grandchildren of my first students in the year 2000. But this is 1961, only just a little over 20% of my goal is reached, and already people speak of honors.

Allow me to speak very personally both about what this congregation has done for me and why I think it is such a privilege to teach at Emanuel.

When I came here as a chemist fresh out of school, I knew no one in Milwaukee; yet within a few weeks I had met many hospitable and helpful people, mainly the parents of my students, and the directress of this school had made it her business to introduce me to Mrs. Bader-to-be.

In 1954, my employer, the Pittsburgh Plate Glass Company, decided to move its research laboratories to Pennsylvania, and I think that I would have moved also had it not been for my real enjoyment of teaching here; Springdale, Pennsylvania, has no Jewish Community. Also, the father of two of my students decided to invest a substantial sum in a young Milwaukee chemical company so that it could afford to employ me, and I have been with that company ever since.

Last, but not least, true friends are amongst God's most

precious gifts. My best friend is the father of one of my students.

I shall really begin to reminisce after the year 2000, yet I think that some valid statements can be made even after only 11 years. Two things have made teaching here a real experience. One has been the caliber of the directors, Mrs. Kovacs, Dr. Weil, Mrs. Soffen, and Mr. Perman, who have all been really able people, people of integrity and vision, whose constant aim it has been to improve the school. The other has been the freedom to teach Judaism, not ~~reformed~~ Judaism with the accent on the hyphenation, but Judaism. There are some schools where teaching the hyphenation is mandatory, but here I can honestly say that I have never taught anything that I could not have taught at Beth-El or at Rabbi David Shapiro's synagogue. The great tragedy of American Jewry between 1848 and 1948 had been its divisions, partly as a result of which the largest and most prosperous Jewish Community history has known has been culturally the most barren and least inspired. These difficulties are, I think, past. Emanuel now is far more truly Jewish than it was 50 years ago, and many orthodox American congregations are today more concerned with the true content of Judaism than with the letter of the law. When Joel spoke of the days when our young men would see visions and our old men would dream dreams, he did not speak of reform dreams or orthodox visions, but of dreams and visions of all our people.

The commandment to teach our children diligently, follows in the Torah immediately after the commandment to love God with all our heart and all our soul and all our might, and rightly so, for if we did not teach our children there would be no Judaism. And, if you ask me, how

one best teaches Judaism, I do not know. I, and I think all of us, are still learning. But I would point to the teaching of Moses: "It is not in heaven that you should say, who should go up to heaven for us and bring it to us that we may hear it and do it. Neither is it beyond the sea, that you should say, who shall go over the sea for us and bring it unto us that we may hear it and do it? For the word is very near to you: in your mouth and in your heart, that you may do it." Judaism must be taught as a religion of life here and now, and the bible must be made to have meaning for us today: not only as great literature and as history, but as a guide to daily living. If we can do this, we succeed; if we only teach about the bible and about Judaism, we fail. I sincerely hope and pray that we can succeed.

chemisch
physikalische
gesellschaft

Gegründet im Jahre 1869 von H. Hlasiwetz,
J. Loschmidt, J. Petzval und J. Stefan

EINLADUNG

zum Vortrag von

Dr. Alfred Bader

Ehrenbürger der Universität Wien

über

Josef Loschmidt - einer der größten Naturwissenschaftler Österreichs im 19. Jahrhundert

am

Dienstag, 7. November 2006, um 17.30 Uhr

im Großen Hörsaal des Instituts für Experimentalphysik der Universität Wien
1090 Wien, Strudlhofgasse 4 / Boltzmanngasse 5, 1. Stock

Dr. Alfred Bader, geboren 1924 in Wien, gründete nach seinem Chemiestudium an der Queen's University in Kanada und an der Harvard University 1955 die Firma Aldrich Chemical Co., fusionierte 1975 Aldrich Chemicals Co. mit dem führenden biochemischen Zulieferunternehmen Sigma in St. Louis und war bis zu seiner Pensionierung im Jahre 1991 Vorsitzender von Sigma-Aldrich. Durch eine großzügige finanzielle Unterstützung - zusammen mit seiner Frau Isabel - ermöglichte er 2003 der Österreichischen Akademie der Wissenschaften, den Ignaz Lieben-Preis zu reaktivieren, der ab 2004 alljährlich vergeben wird. Heuer findet die Preisverleihung am 10. November statt.

CHEMISCH-PHYSIKALISCHE GESELLSCHAFT
c/o Institut für Experimentalphysik der Universität Wien, A-1090 Wien, Boltzmanngasse 5
Sekretär: Ao.Univ.Prof. Dr. Georg REISCHL
Tel.: +43-(0)1-4277/51108, 51153 - Fax: (01)4277 9511 - Email: CPG@exp.univie.ac.at - http://www.cpg.univie.ac.at
Präsident 2005/06:: Ao.Univ.Prof. Dr. Harald Posch, Institut für Experimentalphysik, Universität Wien

Dr. Alfred Bader, Founder and Director Emeritus of Sigma-Aldrich Chemical Company, Milwaukee, WI

Lecture Series: Central Michigan University
Monday, April 12, 1993

Three lectures co-sponsored by the Art and Chemistry Departments at Central Michigan University and the Midland Section of the American Chemical Society

Monday, April 12: 10 AM / Wightman 142
"The Bible through Dutch Eyes"

Monday, April 12: 3 PM / Dow 175
"Josef Loschmidt - The Father of Molecular Modeling"

Monday evening, April 12: 7:30 PM / Dow 175
"The Adventures of a Chemist Art Collector"

Dr. Alfred Bader, Founder and Director Emeritus of Sigma-Aldrich Chemical Company, Milwaukee, WI

Lecture Series: Central Michigan University
Monday, April 12, 1993

Three lectures co-sponsored by the Art and Chemistry Departments at Central Michigan University and the Midland Section of the American Chemical Society

Monday, April 12: 10 AM / Wightman 142

"The Bible through Dutch Eyes" - an examination of the iconography behind the Biblical sources in 17th century Dutch paintings, drawings and prints. Seventeenth century Dutch people were extremely well versed in the Old and New Testaments and drew on these sources in their personal aspirations and in their delineation of good versus evil in their battles with tyrannical Spain.

Monday, April 12: 3 PM / Dow 175

"Josef Loschmidt - The Father of Molecular Modeling" - a discussion of purported discoveries of molecular structure in chemistry by the famous German chemist August Kekule which actually were the work of the obscure chemist Joseph Loschmidt, whose manuscript Kekule had read four years before.

Monday evening, April 12: 7:30 PM / Dow 175

"The Adventures of a Chemist Art Collector" - Dr. Bader is a well-known collector of 17th century Dutch art. In this address, he will describe how his background in chemistry has assisted him in uncovering rare and original works of art.

Examples of the magazine covers of the Sigma-Aldrich Chemical Company, featuring reproductions of works of art in Dr. Bader's collections, will be available for viewing.

Following the evening presentation, a reception for Dr. Bader will be held in Dow 264.

[For visitors to Mt. Pleasant, evening parking is available in lot 22 - see reverse]

Akademie věd České republiky
Ústav fyzikální chemie J. Heyrovského
OS Chemická fyzika České společnosti chemické

Pozvánka na přednášku zahraničního hosta

Dr. Alfred BADER

(USA)

Richard Anschütz, Archibald Scott Couper and Josef Loschmidt: A Detective at Work

STŘEDA

Přednáška se koná **ve středu dne 5. června 1996 ve 14:30 hodin**
v Brdičkově posluchárně Ústavu fyzikální chemie J. Heyrovského AV ČR,
Dolejškova 3, Praha 8.

Doc. Dr. Z. Herman, DrSc.
předseda OS

Doc. Dr. V. Mareček, DrSc.
ředitel ústavu

Přednáška Dr. A. Badera poskytuje jedinečnou příležitost seznámit se s touto mimořádnou osobností vědeckého a podnikatelského světa. Rodák z Vídně (1924), vychovaný mezi válkami většinou u příbuzných na Moravě, unikl zázrakem německé okupaci a studoval v Anglii a Kanadě. Po válce získal doktorát Harvardovy university v organické chemii. Z malé laboratoře v garáži v Milwaukee vybudoval v USA chemické impérium Aldrich Chemical Company, v němž byl dlouho ředitelem a členem správní rady. Proslul jako štědrý podporovatel výzkumu v organické chemii cestou malých soukromých grantů a jako člověk, který stále bedlivě naslouchá potřebám chemiků. Jeho druhou velkou láskou je umění, obrazy holandských mistrů. Je mecenášem vědy, škol i umění; u nás jeho nadace financuje Baderovu cenu České chemické společnosti. V poslední době se věnuje historii objevů v chemii; jeho přednášky a články o výzkumech Josefa Loschmidta ukazují tohoto významného fyzika, rodáka od Karlových Var, v netušeném světle - podobného druhu je i tato přednáška. Dr. Bader je nositelem prestižní Parsonsovy ceny Americké chemické společnosti a autorem pozoruhodné biografie "Adventures of a Chemist Collector" (1995).

Národní galerie v Praze
Sbírka starého umění

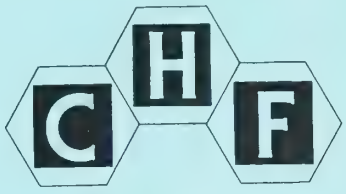
Vás zve na přednášku

Dr. Alfred Bader
Milwaukee, USA

The Bible through Dutch Eyes
Rembrandt and the Jews

která se koná
v koncertním sále kláštera sv. Anežky České
U Milosrdných 17, Praha 1 - Staré Město
v úterý 24. června 1997 od 16,30 hodin

* * *



Please join us in September for a (bring your own)
Brown Bag Luncheon featuring:

The CHF Alchemical Art Collection

A guided tour of the extensive collection of alchemical art at CHF

Presented by: Alfred Bader

Date/Time: Friday, 19 September 2003, at 12:00 Noon

Address: Chemical Heritage Foundation
315 Chestnut Street
Philadelphia, Pennsylvania

Location: Ullyot Meeting Hall

RSVP (acceptances only) to:
Daniela Banks
(215) 925-2222, extension 328

Alfred Bader's love affair with fine art began during the difficult pre-World War II years, when, as a young boy in Austria, he began collecting stamps. Although a Jewish refugee from the Nazis, Bader was interned with other "enemy aliens" in a Canadian POW camp, where he bought his first oil painting, a portrait of himself painted by a fellow prisoner, for the price of one dollar.

In 1951 Alfred Bader founded Aldrich, later Sigma-Aldrich, the world's largest supplier of research chemicals; Bader was able to combine his passion for fine art with his distinguished career as a chemist when Aldrich began using Old Master paintings from his private collection, some alchemical in theme, on the covers of its catalogs and journal, the Aldrichimica Acta. This early appreciation for fine art became a life's mission, including years of devotion to the study of art history with preeminent experts, art dealers, collectors, and historians of Old Master paintings. In 1962 he became both collector and dealer when he created "Alfred Bader Fine Arts." His love of 17th century Dutch and Flemish painting, particularly portraits and Biblical or historical themed-works by Rembrandt students, grew to include the work of Italian, French, and German painters and contemporary artists. "Alfred Bader Fine Arts" has earned an international reputation, selling to such esteemed museums as the Rijksmuseum in Amsterdam, the National Gallery of Scotland, and the Getty. Bader has curated special exhibits, become a renowned lecturer, and was named a fellow of the Royal Society of Arts in London.

ULLYOT

PUBLIC AFFAIRS LECTURE

LEARNING FROM EXPERIENCE: THE ALDRICH STORY, THE ROCKY ROAD TO SUCCESS

Alfred Bader

Art collector
Entrepreneur
Scientist

THURSDAY,
18 SEPTEMBER 2003

Chemical Heritage Foundation
315 Chestnut Street
Philadelphia, Pennsylvania

PRESENTED BY

Chemical Heritage Foundation

Philadelphia and Delaware Sections
of the American Chemical Society

Department of Chemistry of the
University of Pennsylvania

Department of Chemistry and
Biochemistry of the University
of the Sciences in Philadelphia

Alfred Bader

Born in Vienna in 1924, Alfred Bader moved to England at the age of 14 to escape Nazi persecution. After the war began he was deported as an enemy alien to Canada, where he was interned. Two years later he was released to study engineering chemistry at Queen's University in Kingston, Ontario.

After a research fellowship in organic chemistry at Harvard, where he earned his Ph.D. in 1950, Bader joined the Pittsburgh Plate Glass Company (PPG) as a research chemist in its Milwaukee paint division. In 1954 he devised and patented a method of preparing bisphenolic acid for which PPG received $1 million from Johnson Wax—a rare accomplishment for a young research chemist.

Around that time, problems with the supply of organic research chemicals led Bader to found the Aldrich Chemical Company and the Alfred Bader Chemical Library, which supplied small quantities of rare chemicals at nominal cost. To make his sales catalog distinctive and interesting, Bader included not only details of the products' physical and chemical properties and references to recent chemical literature but also reproductions of paintings from his personal collection, which he had begun accumulating in his twenties.

In the early 1970s the Aldrich Chemical Company merged with biochemical supplier Sigma. In 1992 Bader left the board of Sigma-Aldrich to pursue a second career as an art historian and art dealer.

ULLYOT PUBLIC AFFAIRS LECTURE

PROGRAM

Thursday, 18 September 2003

6:00 p.m.

WELCOME

Arnold Thackray

PRESIDENT, CHEMICAL HERITAGE FOUNDATION

INTRODUCTION

LEARNING FROM EXPERIENCE:
THE ALDRICH STORY, THE ROCKY ROAD TO SUCCESS

Alfred Bader

ART COLLECTOR, ENTREPRENEUR, SCIENTIST

7:00 - 8:00 p.m.

RECEPTION

($10 per person)

Reservations required

Please RSVP by 12 September

Register on-line at www.chemheritage.org

Parking is available at the
Bourse Garage on 4th Street
(between Market and Chestnut Streets
near the Ritz Theater).
Parking validation provided on request.

ULLYOT PUBLIC AFFAIRS LECTURE

GLENN EDGAR ULLYOT

Glenn Edgar Ullyot earned a B.S. in chemistry from the University of Minnesota and a M.S and Ph.D. in chemistry from the University of Illinois. During a successful thirty-eight year career with SmithKline & French Laboratories (now GlaxoSmithKline), Dr. Ullyot progressed through several stages of responsibility, from bench chemist to director of Scientific Liaison

Dr Ullyot's primary scientific interests were with medicinal chemistry, therapeutic agents, and their biological activity. He published many papers, received patents on numerous compounds, and played a significant role in the development of several products including Benzidrex, a non-stimulating analog of the inhaler Benzidrine, and Diazide, a diuretic agent for the treatment of high blood pressure

Dr Ullyot was an active member and leader in the American Chemical Society for more than sixty years and served on several important U.S. governmental committees. Owing to his deep commitment to education, he established the Ullyot Public Affairs Lecture in 1987, stating, "Chemistry, biology, and physics are the basic sciences that are keys to understanding the world around us. It is my hope that each Ullyot lecturer will increasingly stimulate more people to appreciate the positive impact these sciences and the people who pursue them have on our daily lives."

PAST ULLYOT LECTURERS:

1990 Mary L. Good
1991 Harry B. Gray
1992 Maxine F. Singer
1993 Bassam Z. Shakhashiri
1994 Orlando A. Battista
1995 Carl Djerassi
1996 Harold E. Varmus
1997 P. Roy Vagelos
1998 Earnest W. Deavenport
1999 George B. Rathmann
2000 Mark S. Wrighton
2001 Robert S. Langer
2002 Jacqueline K. Barton

THE CHEMICAL HERITAGE FOUNDATION

The Chemical Heritage Foundation serves the community of the chemical and molecular sciences and the wider public by treasuring the past, educating the present, and inspiring the future.

THE ULLYOT PUBLIC AFFAIRS LECTURE

The annual Ullyot Public Affairs Lecture was established in 1990 by Glenn Edgar Ullyot to emphasize to the general public the positive role that the chemical and molecular sciences play in our lives. Ullyot lecturers are distinguished in their fields, nationally recognized, and able to communicate to a nonscientific audience.

CHF CHEMICAL HERITAGE FOUNDATION
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THE MERCK COMPANY FOUNDATION,

$\sigma\pi\delta$,

AND

THE DEPARTMENT OF CHEMISTRY

TRINITY UNIVERSITY

proudly announce

The 1993 Merck Foundation Lectures

by

DR. ALFRED BADER

Distinguished Chemist
Founder of Aldrich Chemical Company
Art Historian and Collector

Thursday, February 18th at 2:30 PM, Room 219 MEB
"Josef Loschmidt - The Father of Molecular Modeling"

This lecture, presented during Dr. Mills' Advanced Organic Chemistry class, will examine the foundation of molecular modeling - the visualization of molecules so essential in modern chemistry.

Friday, February 19th at 12:30 PM, Room 206 MEB
"The Development of the Aldrich Chemical Company"

This informal presentation, sponsored by the Student Affiliate Chapter of the American Chemical Society, σπδ, will hear about and discuss with Dr. Bader his history of involvement with the Aldrich Chemical Company. Attendance is limited to 15 students, so sign up with Amy Kazala, president of σπδ, as soon as possible.

Friday, February 19th at 4:00 PM, Science Lecture Hall
"The Adventures of a Chemist Collector"

How does a chemist look upon art? Dr. Bader, the Dutch Masters, and Aldrich have been unified since the first Aldrich catalogs were produced. But there is more to this story than collection of art or the supply of chemicals. In this presentation Dr. Bader presents a fascinating account of his ongoing efforts in the collection of significant art.

This series of lectures is made possible by a generous grant from the Merck Company Foundation to the Department of Chemistry at Trinity University.

Dr. Alfred Bader

Since founding Aldrich Chemical Company more than 40 years ago, Dr. Bader has been instrumental in building Aldrich into one of the world's foremost suppliers of high quality, fine organic and inorganic chemicals. A native of Austria, Dr. Bader went to England and eventually to Canada, where he received several degrees from Queen's University in Ontario. Later he also earned a Ph.D. degree from Harvard University in Cambridge, Massachusetts.

While working in Milwaukee, he received permission from his employer to start a small business on his own, which he did in 1951 in a rented garage. When, in 1954, his employer decided to move its Milwaukee operations to Pennsylvania, Dr. Bader opted to remain in the city he had grown to love and formed Aldrich Chemical Company. In 1975, he and Dan Broida, then the President of Sigma Chemical Company in St. Louis, led the effort which resulted in a merger of Sigma and Aldrich that year to become today's Sigma-Aldrich Corporation.

Throughout his career, Dr. Bader has traveled extensively meeting customers and suppliers, giving lectures and becoming well known among leading chemists throughout the world. He has been the driving force in accumulating a collection of 39,000 rare chemicals which Aldrich makes available to the research community. Over the years, he has also personally helped many deserving chemists at universities with grants to underwrite their research.

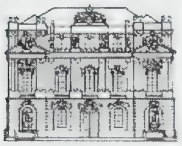
Dr. Bader also has won renown as an art historian and a student of the Bible. His collection of the works of seventeenth century Dutch Masters is considered one of the finest private art collections in the world. He was named a fellow of the Royal Society of Arts in London for his achievements as an art collector and historian and for his research in art restoration.

From: "Our Chemist-Collector Approaches Sixty"

At Pittsburgh Plate Glass, he was employed as a Research Chemist and later became Organic Group Leader in the paint division. Alfred found it wasteful of research chemists' time and talent to prepare high-purity intermediate compounds necessary to get on with the heart of the research itself. At that time, the only significant U.S. source for such products was a division of Eastman Kodak Company. He suggested to his superior to form a division to augment the list of high-quality intermediates available to research chemists. The proposal was rejected.

He then requested and received permission to try it on his own during his spare time. In 1951, he rented a $25.00-a-month garage, acquired some basic equipment and made MNNG, 1-methyl-3-nitro-1-nitrosoguanidine which was used as a starting material for diazomethane, and a few other compounds. Not wishing to personalize the company by using his own name he suggested to the attorney preparing the articles of incorporation that they toss a coin between "Daniels" and "Aldrich ", the names of his own and the attorney's fiancée. The coin came up "Aldrich".

In 1954, Pittsburgh Glass decided to move its research division to Springdale, Pennsylvania. Although sales from his personal venture were only $15,000 per year, Alfred decided to resign his position and stay in Milwaukee, a city he had come to like. The development of Aldrich now became his full-time occupation.



Einladung
der Österreichischen Akademie der Wissenschaften (ÖAW) und des Max-Kade-Alumni-Clubs zum Vortrag

Die Geschichte der Unternehmen Aldrich und Sigma Aldrich

von Dr. Alfred Bader

mit anschließender Diskussion zum Thema:

Die Rolle der Industrie in der naturwissenschaftlichen Forschung an den Universitäten

Leitung: Prof. Dr. Karl Kuchler
stv. Vorsitzender des Max-Kade-Alumni-Clubs

3. November 2005, 18 Uhr
Johannessaal der ÖAW, Dr. Ignaz Seipel-Platz 2, 1010 Wien

ALFRED BADER gründete 1955 nach seinem Chemiestudium an der Queen's University in Kanada und an der Harvard University Aldrich Chemical Co. 1975 fusionierte Aldrich Chemicals Co. mit dem führenden biochemischen Zulieferunternehmen Sigma in St. Louis. Alfred Bader war bis zu seiner Pensionierung im Jahr 1991 Vorsitzender von Sigma-Aldrich.
Der großzügigen finanziellen Unterstützung durch Alfred und Isabel Bader ist es zu verdanken, dass der Ignaz-Lieben-Preis, der älteste Preis der Akademie der Wissenschaften, im Jahr 2004 reaktiviert wurde und heuer zum zweiten Mal verliehen wird.

Sigma-Aldrich ist eines der weltweit führenden Unternehmen in der Herstellung von chemischen und biochemischen Produkten für wissenschaftliche Forschung in der Gentechnik, der Biotechnologie und in der pharmazeutischen Entwicklung.

MAX KADE – Stipendien werden an hochqualifizierte, junge promovierte Wissenschaftler und Wissenschaftlerinnen auf dem Gebiet der Naturwissenschaften, der Medizin und der Technischen Wissenschaften verliehen.
Informationen unter www.stipendien.at

Please Bother Us!

One of the most pleasurable aspects of my work is talking with our customers. I spend several days a month visiting university laboratories and meeting with our industrial customers to ensure that the quality of our service is good and the purity of our chemicals excellent, and to get suggestions from fellow chemists for new products we should add to our Catalog/Handbook.

Occasionally I may even get a complaint — hardly ever about purity — but sometimes about delays in delivery. We list over 10,000 products, including hundreds of new stains, dyes and inorganic chemicals, in this Catalog/Handbook. Well over 96% of these are in stock, ready for immediate delivery. A few products are back-ordered, and we make a great effort to reduce their number.

Nothing is as important to me as having our customers know that we think of them as individuals, not as names on a printout or numbers on a list. It would be unthinkable to send our customers to intermediaries or dealers who cannot possibly give as good service or know as much about our products as we do. At Aldrich, we want no barriers between our customers and us. Order from Aldrich directly, and if you have any questions, ask us. We want to be bothered.

I hope Aldrich will never become so large that we cannot be "bothered" by our customers. We care immensely and sincerely, and if you should ever wish to discuss a problem directly with me or any of our very capable technical or sales personnel, please call us at (414) 273-3850. It is important to me that we preserve our tradition of service and quality. So please, bother us.

Alfred Bader

Dr. Alfred Bader, President
Aldrich Chemical Company, Inc.

chemists helping chemists in research & industry

The Hudson-Bergen Chemical Society

Sigma Xi Clubs of Ramapo College & FDU
Fairleigh-Dickinson University, Chemistry Department
invites you to a special program

The 1st Dr. Aart DeKorte Memorial Lecture

Speaker: **Dr. Alfred R. Bader**
Chairman Emeritus, Sigma-Aldrich, USA

Topic: **The Adventures of a Chemist Collector**

Date: **Wednesday, October 13, 1993**

Time and Place:
Social - 6:00 - 6:45 PM
Dinner 6:45 - 8:00 PM
Lecture - 8:00 - 9:00 PM

The Multipurpose Room, Student Center
Fairleigh-Dickinson University
1000 River Road at Lone Pine Way, Teaneck, NJ 07666

Reservations: **Elaine Stolarz, (201) 692-2330**
Dinner **$ 18.00 Members and Guests; Students: $ 10.00**

Abstract: Dr. Bader received his BSc in 1945 and his MSc in 1947 from Queens University in Kingston, Ontario and his PhD in Organic Chemistry in 1949 from Harvard University with Professor :Louis Fieser In 1951, he founded the Aldrich Chemical Company in Milwaukee. Aldrich has grown from tiny beginnings to one of the largest suppliers of research chemicals. It merged with Sigma, the biochemical supplier in 1975. Dr. Bader has been President, Chairman, and now Chairman-Emeritus of Sigma Aldrich, which employs over 4000 worldwide. Dr. Bader has always been interested in the ABC of his life: art, Bible, and Chemistry. and their histories. He has lectured widely on all three, has been guest curator of old master exhibitions, and has acquired, researched, and had restored many old paintings of the 17th Century Dutch Masters.

Speeches to Convocation, 1 November 1986

Dr Alfred Bader, chemist and businessman

I am especially happy to be awarded the degree of LLD, Doctor of Laws, because I have sometimes secretly wished that I were a lawyer, and my good friends know how I have always enjoyed a fight when I knew – or thought I knew, that I was right.

Today, I want to talk to you very personally about what Queen's has meant to me –how it has affected, nay, changed my life – and to share with you what I think is essential for a truly happy life.

To many people, a university is the place where you acquire a profession. And of course, at Queen's I became a chemist – good enough to get into graduate school at Harvard, and to start a chemical company.

But Queen's taught me more – it changed my outlook in very personal ways.

My first impressions of Canada were truly mistaken.

From the time I came to Canada in July of 1940 until I came to Queen's on 15 November, 1941, I thought that Canadians were largely dishonest and uncivilized. I had come to England in 1938 at age 14, a Jewish refugee from Hitler. In May of 1940 with the fall of Belgium and Holland, the British government feared that many refugees might in fact be fifth columnists and so Churchill's famous dictum 'Collar the lot'. I was included in this roundup and was sent here as a prisoner of war, suspected of being a Nazi. We landed in Quebec and were taken to a camp on an island in Lake Champlain. I was the youngest in the camp, and on our first day there the camp commandant interrogated me carefully, marvelling that a youngster of 16 had parachuted into England. When I tried to explain that I was no parachutist but had fled to England and was a Jew, he just laughed and assured me that he did not believe me, and anyway – he didn't like Jews either. A few days later our suitcases arrived – many had been opened forcibly and were empty. On the day of my release 18 months later, I had to sign a form stating that I had no claim against His Majesty's Canadian Government. In retrospect, of course, compared to the treatment of Jews in Nazi Europe, the treatment here was paradise – but at the time I didn't have the perspective. Queen's provided that. The great majority of Queen's people – students and academics – were decent and warm-hearted people – that I learned very quickly.

Queen's provided perspective in another, more important matter. The term 'Christian' here at Queen's meant something quite different from what it had meant to me, the Jew in Vienna. To me, the word Christian had meant that I was excluded; it meant hypocrisy, talk of loving your neighbour alongside *Hunden und Juden ist der Eintritt verboten* – Dogs and Jews keep out. Here at Queen's I got to know many professors – men like Norman Miller – who were believing Christians and also truly good human beings. Many years later, one of these, Professor John Coleman, who had been the housemaster at the Science '44 Co-op where I had lived, related a most telling story. An American diplomat, talking to a Polish academic in Poland, had said that he was a believing Christian. To which the Pole replied, 'Yes, I understand, I also am an anti-semite.' Poland and Austria were and are different from Queen's, where Christian has a different meaning.

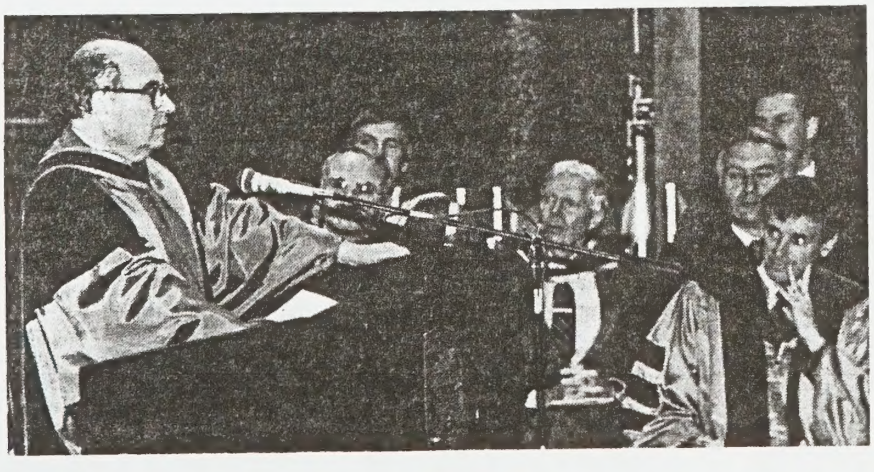
Profession and perspective. Plus confidence that I would be judged as an individual. On my first day here, 15 November 1941, the laboratory storekeeper in Gordon Hall urged me to quit – no boy starting in November had a chance of passing – yet, I did pass, and to my surprise won the scholarship for first year Engineering English. That $30 meant a great deal to me. Three years later, very short of cash, I discovered that the university calendar listed the Andrina McCulloch Scholarship for Public Speaking. How silly could I get? I had never spoken publicly before, and spoke with a strong accent. But $50 was $50, so I tried, and won. Vice-Principal McNeill, who was one of the judges, took me aside and urged me to join the debating team – not something done by engineers. Yet, I did join. Dr McNeill became my good friend, and guided me to win that year's debating championship.

In November of 1941, I was terribly shy and worried. I had to report to the RCMP every week, and had been told that I must not tell anyone where I came from. Other students came from Glebe or Lisgar or KCVI. Where had I come from? And I am sure I was pretty selfish – my past experience seemed to prove that was the only way to succeed. Queen's taught me that I would be judged as an individual, that I did not have to be a member of the 'in-group' – even an alien Jew would be treated fairly by these Scottish Presbyterians. Whereas McGill would not accept me in 1941 because of a quota system and the President of the U of T declared that these youngsters from the internment camp might be a menace to the war effort, Principal Wallace and Jean Royce accepted us with open arms. At Queen's, I gradually lost my shyness and gained self-confidence.

What is the best advice I can give you today? In life, most of us make two decisions that are far more important than any others. The choice of profession and the choice of our mate. I am reminded of the saying of one of the world's ablest chemists, Vladimir Prelog, who celebrated his 80th birthday this year. Asked about happiness, he said, 'If you want to be happy for an hour, buy a bottle of wine; if you want to be happy for a week, slaughter a pig; if you want to be happy for a year, get married; if you want to be happy for your life, enjoy your work.' To which I would add, 'Enjoy your work and find a mate with whom you can share everything, and you will be as close to paradise as you can be.' As I am.

By a happy coincidence, it today is Isabel's sixtieth birthday. We met on a boat from Quebec to Liverpool in 1949, and it took me nine days to propose. Today I wonder why it took me so long – I just had not proposed to a girl before and so I was a bit slow. The only flaw I discovered in Isabel in all these years was her going to the University of Toronto. None of us is perfect. But then her brother came to Queen's, as did many nieces and nephews, and one niece, Laurie Overton, is at Queen's today.

A great many Queen's people have helped me, and I have tried to repay those many acts of kindness by helping others. At the end of my days, I pray that I will have succeeded as Queen's succeeded with me – in helping others in their professions, in their perspectives, in their realization of their potential. The three P's through Q – profession, perspective, potential through Queen's.



Lisa Lowry

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2419 E. Kenwood Blvd., Milwaukee, WI
www.lubavitchofwi.org

FOR IMMEDIATE RELEASE: April 5, 2006

THE BIBLE THROUGH DUTCH EYES:
Rembrandt and the Jews

MILWAUKEE, WI – May 2, 2006, 7:00 pm, Renowned Rembrandt expert Dr. Alfred Bader, a Milwaukee art collector and dealer, will be guest speaker at Helene Zelazo Center for the Performing Arts. Born in Vienna in 1924, Dr. Bader left Austria in 1938 to escape Nazi persecution. He earned a doctorate in chemistry from Harvard and went on to found what has become Sigma-Aldrich. Dr. Bader has published widely on chemistry, art and the Bible and is a world renowned expert on Rembrandt.

Drawing on his broad knowledge of the Old Masters with a particular emphasis on Rembrandt and his students, coupled with an encyclopedic knowledge of the biblical sources, Dr. Bader will explore the unique often complex relationship of the Dutch Artist's views and relationships of their Biblical and Jewish subjects, using tens of detailed slides. The presentation will examine the nuances of this fascinating relationship.

Dr Alfred Bader – Became both collector and *dealer* when he created "Alfred Bader Fine Arts" in 1962. His love of 17th century Dutch and Flemish painting, particularly portraits and Biblical or historical themed-works by Rembrandt students, grew to include the work of Italian, French, and German painters and contemporary artists. Bader still enjoys the thrill of discovery; he prefers to come upon "dirty old paintings" in antique shops which, thanks to his dedicated research and restoration, reveal themselves to be great, forgotten works. "Alfred Bader Fine Arts" has earned an international reputation, selling to such esteemed museums as the Rijksmuseum in Amsterdam, the National Gallery of Scotland, and the Getty. Bader has curated special exhibits, become a renowned lecturer, and was named a fellow of the Royal Society of Arts in London.

The Beis Hamidrash – The Institute for Jewish Literacy Judaic classes, family/adult experiential learning weekends, lectures and holiday preparation classes. It is responsible for the distribution and sales of educational books and maintains a department for University students.

Recommended contributions: Adults $10.00 & Students $5.00

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