

DEPARTMENT OF CHEMISTRY
CORNELL UNIVERSITY
ITHACA, NEW YORK 14850

NEWSLETTER

Issue No. 5

February 1970

In planning this issue of the Newsletter, I looked back at last August's issue. I started off by saying that "much has occurred since the last issue of the Newsletter". These words again are very appropriate. I am sure you all know that Dale R. Corson was elected as the eighth president of Cornell by the Trustees soon after the Newsletter went out last August. President Corson had served as Provost of the University for a number of years before assuming the presidency. President Corson then called on Bob Plane, Chairman of the Chemistry Department, to serve as Provost. Bob decided to take the job as Acting Provost on a one-year basis. Because Bob would only be gone temporarily, it was decided to operate the Department with what I call a "troika". Instead of having a specific person as acting chairman, three people served in this capacity. These people were Don Cooke, Jerry Meinwald and Ben Widom. Just after Christmas, Bob Plane announced that he had decided to take the Provost's job on a permanent basis. This means that he will still be Professor of Chemistry and maintain a research group; but will be spending virtually full-time as Provost which, in effect, is second-in-command of the University. This is a considerable loss to the Department; but a gain for the University and we are very confident that Bob will do an excellent job. Upon assuming the permanent position of Provost, Bob Plane resigned as Chairman of the Chemistry Department. As you can tell from the Chairman's Column, the new Chairman of the Department is Gordon Hammes. I personally am looking forward to working with Gordon who, I am sure, will be as outstanding as the chairmen preceding him.

The Chemistry Department must be an excellent training ground for University leaders. As you know, Frank Long retired as Vice

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Chairman's Column

This year marks the beginning of a new decade and the entrance of a new Department chairman on the scene. This has been prompted by the decision of Bob Plane to remain as Provost. We have also lost Don Cooke to the administrative ranks; he has taken on the job of Vice President for Research in addition to continuing as Dean of the Graduate School. Although this represents a great loss to the Chemistry Department, the University as a whole will benefit.

This seems like an appropriate time to assess the current status of the Department and to speculate about what the future holds. Fortunately, Bob and his predecessors have established a strong Chemistry Department; the faculty is recognized world-wide for its excellence in research and teaching. When the Baker renovation is completed, we will have one of the finest teaching and research facilities in the world. The first stage of the renovation is now finished and the final stage will get underway as soon as fund-raising is complete.

However, in spite of the healthy state of the Department, the next few years do not look like easy ones. The financial crises of the University means that further expansion is not going to occur in the near future; in fact, maintenance of the status quo will not be easy. These financial difficulties have been compounded by a sharp curtailment in government research funds. At this point, it is clear that a reassessment of the role of science in our nation must occur. New priorities must be established. The relationship between science and society is already being critically examined in a formal program recently established at Cornell by Frank Long. However, in order for the Chemistry Department to prosper, a detailed analysis of our particular mode of operation must be made. How many chemistry Ph.D.'s can be profitably trained for society? What role should research play in chemical education? The answers to these questions may lead to the conclusion that the size of our graduate program and the size of research programs should be restricted. In any event, we must take the responsibility for making these decisions and relating them to society and political organizations. For better or for worse, the ivory tower concept of the University can no longer be upheld.

In spite of the difficulties which lie ahead, I anticipate the Chemistry Department will prosper. We will continue to stress quality in both research and teaching. This, coupled with a continuous critical evaluation of our status, should permit us to maintain a healthy and vigorous Department.

Gordon Hammes

CORNELL SOCIAL HOUR
ACS Spring Meeting
Monday, 23 February, 5:30 p. m.
Tejas Room, Rice Hotel
Houston, Texas

Faculty Members

(Academic Year 1969-70)

A. C. Albrecht	M. J. Goldstein	G. H. Morrison
S. H. Bauer	W. D. Gurowitz	H. H. Muxfeldt
A. T. Blomquist	G. G. Hammes	R. A. Plane
J. M. Burlitch	J. L. Hoard	R. F. Porter
R. A. Caldwell	R. Hoffmann	J. B. Russell
D. M. Collins	R. E. Hughes	R. R. Rye
W. D. Cooke	R. J. Klimowski	H. A. Scheraga
V. du Vigneaud	E. S. Kostiner	F. R. Scholer
E. L. Elson	F. A. Long	M. F. Semmelhack
R. C. Fay	F. W. McLafferty	M. J. Sienko
M. E. Fisher	J. Meinwald	D. A. Usher
G. A. Fisk	W. T. Miller	B. Widom
J. H. Freed		C. F. Wilcox

Emeritus Faculty

J. R. Johnson	M. L. Nichols
A. W. Laubengayer	J. Papish

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President for Research this past summer. He was succeeded by Don Cooke. In addition, Bob Hughes continues to serve as Director of the Materials Science Center; and now, Bob Plane has assumed the position as Provost; we hope things have stabilized, at least until the next Newsletter.

You will recall that we decided to experiment with the Social Hour at the New York meeting and scheduled it for Monday instead of Tuesday. The Social Hour was a smashing success, with two large rooms jammed-packed with Cornellians. I heard only a few comments about having the Social Hour on Monday instead of Tuesday. I have the feeling that regardless of which night it was in New York it would have been just as well attended. We have again scheduled the Social Hour for the Houston ACS meeting on Monday, 23 February, at 5:30 p.m. in the Tejas Room of the Rice Hotel. If you have any preferences about which night the Social Hour should be held, please let me know. I hope we will have another well-attended Social Hour.

For the past month, we have been busily moving back into renovated Baker Laboratory. At this time, the move is virtually complete and we are thoroughly enjoying being uncramped again in our up-to-date facilities in both Baker and the Research Building. The renovation is an excellent piece of work and I'm sure that all of you will be delighted to see how it turned out. I hope that each of you will be able to visit us in the near future to inspect our facilities. We now have all of our lecture halls and recitation rooms and research laboratories back again; we are no longer scattered all over campus. It's good to be home again!

With this part of the renovation done, we have completed about 80 percent of our total building program. What is left is Phase II of Baker renovation. This involves the complete renovation of the large undergraduate teaching labs and the addition of an auditorium with a few more small teaching laboratories. We are very eager to get started on this project but, at this moment, it appears that it will be a year

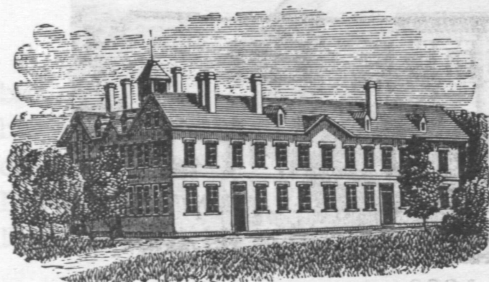
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Lauby's Recollections

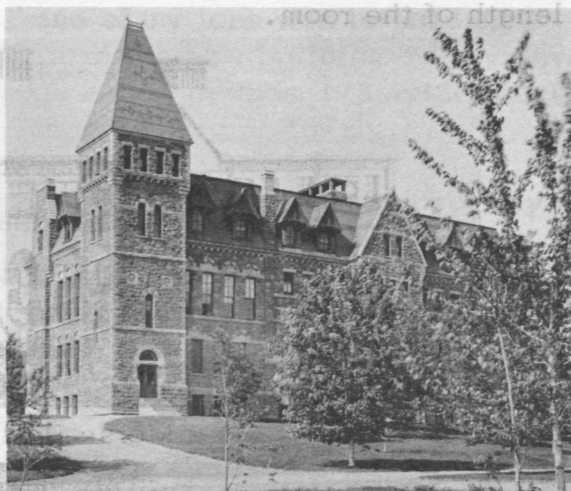
The Department of Chemistry is moving back into renovated Baker Laboratory. This is a good time to recall the many homes Chemistry has occupied down through the years. Which ones have you known?

In 1868 Chemistry, under Professor George C. Caldwell, had a modest beginning in one basement room of Morrill Hall.

The "School of Chemistry" moved in 1870 to its second home in a new wooden building situated where the north wing of Goldwin Smith now is. This was built to house Chemistry and Physics but, immediately, other departments crowded in and the congestion was great.



Second Home - 1870



Franklin Hall - 1883

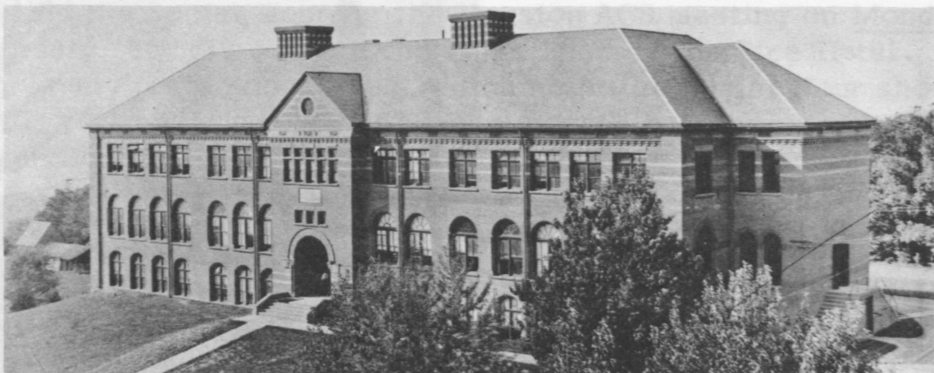
The pressure for room led to the construction in 1883 of "the Stone Laboratories", Franklin Hall, designed for Chemistry and Physics. A small brick annex was added to this in 1887 to give Chemistry more elbow room.

In 1890 Chemistry acquired its fourth home, Morse Hall, for its exclusive use. This laboratory, situated on the knoll west of Franklin Hall, was named after S. F. B. Morse, inventor of the telegraph, whom Ezra Cornell had been associated with in erecting the first telegraph line and in the organization of Western Union. Ex-

panding needs led to the enlargement of Morse Hall in 1899, and in 1910 the addition of the Andrew Carnegie Wing. In the early morning hours of Sunday, February 13, 1916, a fierce fire gutted Morse Hall.

Plans were immediately started for a new laboratory. Meanwhile, the basement and first floor of Morse Hall were fitted with a roof and partitions and rooms were provided in many other campus buildings to tide Chemistry through the emergency.

This was the scene which greeted me in the fall of 1917 when I entered Cornell as a member of the class of 1921. One of the most vivid memories of that year is of the temporary lab for Qualitative Analysis in the attic of Rockefeller Hall. With practically no ventilation, at times the fumes became so dense we could not see the length of the room.



Morse Hall - 1890



Baker Laboratory - 1923

Professor L. M. Dennis, Chairman of the Department, used all of his great powers of persuasion to induce banker George Fisher Baker in 1919 to donate one million dollars for a new building and "The King" and his faculty spent endless hours planning for it. The input of effort by them undoubtedly set an all time record for faculty devotion. Meanwhile, building costs spiraled upwards, but Mr. Baker obliged with another half million.

In the summer of 1923 Chemistry moved into the exciting new Baker Laboratory, its fifth home. Considered by many to have the most attractive exterior of any Cornell building, the interior design incorporated the best of other outstanding laboratories and had many novel features, such as its large open hood system. It immediately became the outstanding model for laboratory construction. As a graduate assistant to Professor Dennis, one of my jobs was to conduct visiting chemists and architects through the new building. They never failed to be impressed when our large hoods in Room 178 avidly sucked up the ammonium chloride smoke I generated so profusely.

Baker Laboratory accommodated the Department magnificently but one feature has never been exploited. The front entrance was built with a spacious niche on either side, and rumors immediately circulated about whose busts were to decorate these recesses. Dalton and Lavoisier? Liebig and Emil Fisher? Gmelin and Meyer? Dennis and Bancroft?



Chemistry Research Building - 1967
(adjoining Baker Laboratory)

When Clark Hall for Materials Science replaced "The Circle" and was connected with Baker Lab, the libraries for all the physical sciences were consolidated in elegant quarters in Clark.

The greatly increased teaching and research needs of the 1960's demanded still more room and renovation of the worn-out interior of Baker. The new Research Wing was added to the northeast corner of Baker and occupied in 1967. The renovation of the offices, lecture rooms and research labs in Baker has just been completed, with psychedelic colors and air-conditioning in line with the times.

The worn-out, dingy undergraduate labs on the east side of Baker still cry out for redoing. Plans are complete and the hope is that this final phase can be started within the year. Search for funds to complete the \$11 million package of building and renovation is going forward. My solution for this is to offer the two niches at the main Baker entrance for busts of the two most generous donors. Do you want to make this your thing?

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or more away. About the only hurdle left to overcome for the completion of our building program is money. The cost of the Phase II part of our renovation is between two and three million dollars and until these funds are in view or in hand we will not be able to begin. We are still actively seeking support for the remainder of our building project and, hopefully, will be successful within the near future.

The undergraduate laboratories are in poor shape. In spite of the moneys being tight, the University has granted us a special allocation which was used to re-lamp these laboratories, fix up some steamlines, water lines, replace many of the valves and add electrical circuits. This work was absolutely necessary as many of the lights in the laboratories did not work and were not able to be repaired. The same was true with the steamlines and water lines. Also, with the increasing numbers of various kinds of electrical and electronic instruments which are being used in the laboratories, starting at the freshmen level, new electrical conduit and electrical circuits had to be installed. While the labs are still not very pretty, they

are a bit more functional and, hopefully, the undergraduate's laboratory experience will be enhanced by these small improvements.

In the last Newsletter, a new program was described in which the incoming graduate students who would be teaching assistants for the undergraduate courses were brought in a week early. This was done so they could discuss and learn about teaching and actually run many of the experiments that the undergraduates would be doing. The reaction from everyone involved in this program was that it was extremely helpful and a very good idea. We can see that it has led to improvement in our instruction and we plan to continue this program in the future. This "indoctrination" was in large measure run by the experienced teaching assistants and the professors in charge of the various courses. Everyone pitched in and had an enjoyable time. The experienced graduate students did this on a voluntary basis and deserve much credit and thanks for making the program a success.

Because research funds and student support continue to shrink, we took in a much smaller graduate student class this past fall and anticipate accepting a smaller-than-normal class again this coming fall. Each year I think that we cannot go on much longer under this current chaotic system of fragmented research support and student support. However, as I write each Newsletter, it appears that nothing has changed except for the situation growing worse. I would hope that in the near future a more sensible, orderly plan for student support and research support will evolve.

Along with this is an apparent bleak job outlook for our advanced-degree graduates. I will not speak of our undergraduate majors since almost everyone of them go on to graduate school or medical school. We were fortunate in that all of last year's advanced degree graduates obtained suitable positions, either in industry or academia. However, things appear to be tighter this year with fewer jobs being available in either field. It is still a bit early to make any judgments about this; I hope that with the next Newsletter I will be able to paint a rosier picture.

It is often said nowadays that science has not made its proper case to the public and to the various legislative bodies. This apparently must be true since funds for higher education and research are being reduced more and more. Coupled with the substantial increases in the cost of living, the cost of equipment, etc., this has put us and every other college and university into a real tight financial bind. I would hope that this trend can be reversed.

News of the Faculty.— The successful flight of Apollo 11 caused more than the usual amount of excitement at Cornell and in the Chemistry Department. One of the investigators for the Apollo 11 project was George Morrison who received a moon sample for analysis. This sample was on display for the entire Cornell and Ithaca community and was the first moon sample to be displayed anywhere. George has completed his analysis and participated in the conference in Houston where all investigators reported their findings. As a result, George is now a radio, T. V. and newspaper personality; write-ups of his findings and pictures of George have appeared in many newspapers; he has spoken on the radio; and has appeared on various T. V. programs. It has been quite an exciting experience for everyone in the Department but even more so for George and his research group. George is now eagerly awaiting the samples from Apollo 12. As a result of the Apollo flights, we now have a new area of chemistry — cosmochemistry.

Bob Fay is thoroughly enjoying his sabbatic in England. He writes back that he is very busy attending lectures and seminars and optical activity in quantum mechanics, valence theory, ligand-field theory and vibrational spectroscopy. He has also embarked on an experimental program concerned with the circular dichroism of metal acetylacetonates. Jack Freed is currently finishing up the first half of his sabbatic leave, which he has spent in Japan. He has some very interesting comments and observations on the student unrest in Japanese universities. From Jack's letters, it appears that the newspaper accounts are pretty accurate. Jack will shortly be leaving Japan to commence the second half of his sabbatic leave in Israel. It turns out that we will have two other members on sabbatic leave in Israel

this term. Harold Scheraga has just left and will spend the next six months at the Weizmann Institute. In addition, Frank Long will be spending the next six months traveling to various places and plans to spend some time in Israel. Simon Bauer is on leave for the academic year at the Naval Research Laboratory in Washington, D.C. Because of his proximity, we get to see Simon every couple of months.

Visiting Lecturers. I mentioned in the last Newsletter that we were looking forward to a very exciting fall series of lectures. The Baker Lecturer for the fall term was Professor Herbert C. Brown of Purdue University. Soon after completing his Baker Lectureship here, Professor Brown was awarded the Medal of Science by President Nixon. This again reflects the outstanding calibre of the Baker Lecturers. Many of our Baker Lecturers have gone on to receive medals of science and other high awards, including Nobel Prizes.

Professor F. Albert Cotton of the Massachusetts Institute of Technology was the Debye Lecturer and presented a series of three lectures on the subject of "Cyclopentienylmetal Compounds with Unusual Structure and Dynamical Properties" and "Strong Metal-to-Metal Bonds."

The NIH Training Grant Lecturer was Professor William P. Jencks of Brandeis University. He presented a series of lectures during the month of December on "Mechanisms for Catalysis and Chemical Reactions."

The Baker Lecturers for next year will be Professor S. I. Weissman of Washington University during the fall and Dr. Earl L. Muetterties of Du Pont in the spring. In addition, the NIH Training Grant Lecturer for next year will be Professor L. L. M. van Deenen of the Biochemical Laboratory of Rijksuniversiteit in the Netherlands.

Bill Gurowitz

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