

# Gordon Research Conferences

## A Quarter-Century on the Frontiers of Science

W. George Parks

We have to be practical; we have to concern ourselves with learning to apply what knowledge we now have. This was a philosophy that pervaded the early 1930's, and understandably so. It was a period of dismal depression. Basic research was regarded by many as bordering on the impractical, and there was little latitude, financial or mental, for anything but earnest practicality.

It was a time when many scientists were forced to focus their thinking on the then pressing present; it was a time when few were inclined to cast their thoughts toward the future. But fortunately one man, at least, was an exception. Neil E. Gordon, professor of chemical education at Johns Hopkins University, looked far, far ahead. He envisioned what the future structure of the scientific community would be like; he foresaw the communications problems that would arise—problems of such dimensions that they might stultify creativity. And he, with both determination and zeal, set out to do something to nourish the ideas and ideals he cherished. Out of his foresight, out of his enterprise and his dedication to science, a great institution has grown, one that now bears his name—the Gordon Research Conferences.

Gordon was an exceptional man. He founded an exceptional scientific organization, one which, in the words of one of America's senior scientists, "has filled a unique, vital function in the development of science and industry, the true importance of which can never perhaps be fully evaluated."

This year, as the Gordon Research Conferences round out their 25th year of probing the frontiers of science, no simple yardstick can be constructed to measure just what specific contributions they have made to the furtherance of scientific thought and of human understanding. However, there are some measurements of their present stature which

are discernible—the annual scope of their discussions, for instance (36 topics); the international reputations of many of the conferees; and the number of scientists (4000) who attend from many countries (46).

Such figures depict an impressive change from the pioneering seminars that Gordon started in modest fashion. But what is more significant is that neither the inherent nature nor the purpose of the conferences has changed over the years. The emphasis is still, just as it was during Gordon's initial meetings, on small, informal gatherings of knowledgeable men—men who relish the opportunity to indulge in unhurried discussion and to explore the thinking and theories of their scientific peers.

This concept, elementary as it may seem against the frame of reference that years of experience have built up, is the foundation on which the conferences have been built; and fruitful as it has proved to be, it is still the conferences' dominant characteristic and towering strength.

No book study this, but the true essence of creative thinking; it is akin, perhaps, to what the unnamed Chinese philosopher had in mind when he formulated the proverb, "A single conversation with a wise man is better than 10 years' study of books," for the conferences embrace not a single conversation but thousands of them between wise men who talk together about what they know best. From such conversations comes an extraordinary mental stimulus that imparts new energy and new impetus to research and scientific progress.

### Pioneering Efforts

The late Neil Elbridge Gordon was a man of remarkable vigor, of vast enthusiasm, and of rugged determination. As long ago as 1931, he perceived what to him was unthinkable: the progress of his beloved science was being hampered by its own growth. Or so he believed. Meetings were becoming larger and larger, much to the satisfaction of those

who regarded high attendance and growing membership rosters as symbols of vitality. Neil Gordon did not share their enthusiasm. He deplored large meetings, because he felt that they often prevented, rather than promoted, fruitful contacts between creative minds.

Large meetings, haste, confusion, and conflicting interests among attending scientists, all, in his opinion, were impeding progress. Moreover, some meetings, by their very size, were attracting the attendance of people who lacked the deep insight and true interests of scientists. These "outsiders," as Gordon categorized them, not only failed to participate in, and contribute to, worthwhile discussions, but by their very presence interfered with those who would or who could.

Partly as a result of his own observations and experiences, but far more because of his own inner vision, Gordon conceived the original plan of holding small, informal conferences among leaders in research—symposia to explore new areas of thought and experiment, or, as Gordon liked to phrase it, "to push back the frontiers of science."

There were difficulties to be overcome if any such venture was to succeed. Gordon knew this. But he was a man of determination, of determination and faith which are perhaps best typified by his own words: "It is not a question whether we can do this or that or not. It is only a question of whether we are for chemistry or against it. If we are for it, nothing can stop us. . . ."

With such convictions to buttress him, Gordon arranged his first meeting under the auspices of Johns Hopkins University. The participants, who gathered in Remsen Hall (the chemistry building of that university) were students and faculty members. In 1932 there was another single conference ("X-rays and crystal structure"). Ralph Wyckoff led the discussion, and Emil Ott, then a faculty member, was chairman.

A beginning had been made, but just a beginning. However, Gordon and his colleagues had formulated a theory. They were persuaded that the conferences would flourish best if they could be held in relatively isolated surroundings where day-to-day distractions were minimal. With this in view, Gordon arranged by 1935 for a 3-week session at Gibson Island, a small (1000 acres), wooded, hilly island in Chesapeake Bay. Gibson Island provided a unique setting for the scientific symposia. It was sufficiently difficult to reach, and sufficiently isolated, so that most people, once they had managed to get there, decided to stay for the entire conference week. The Gibson Island Club, a private organization, provided meals and sleeping ac-

Dr. Parks is professor and head of the department of chemistry at the University of Rhode Island and director of the Gordon Research Conferences.



Fig. 1. Neil Gordon.

commodations. All in all, the pleasant club, lush vegetation, beautiful bay, golf, and swimming, all combined to make the Gibson Island conferences memorable.

This conference is recorded as the "Fifth annual summer session of the department of chemistry at Gibson Island, Maryland," and the general purpose was described in *Science*:

"The Chemistry Department of Johns Hopkins University is holding its fifth Research Conference this Summer at Gibson Island near Baltimore. The conference is under the general direction of E. Emmet Reid and will run three weeks from June 24th to July 12th. The plan is flexible, varying from day to day according to the nature of the topic under discussion and the wishes of those participating.

"The day begins with a more or less formal lecture outlining some field of research and directing attention to unsolved problems. This presentation is followed by a discussion in which each one present takes a part, making whatever contribution he can to the solution of the problems presented. The ideal is to have a group large enough that all points of view may be represented, yet small enough that all who wish may take an active part.

"The plan is to have recognized leaders in each field of research give lectures and start the discussions, but its success depends on having a number in the group who are capable of contributing ideas.

"The remainder of the day is available for sports or conversations. These conferences are intended to combine mental stimulation, pleasant personal contacts and healthful recreation."

Then it was that the basic concept, character, and structure of the conferences were laid down. And these are the principles that govern the direction of the conferences to this day.

In 1936 invitations were issued for the

sixth annual summer session in biology, chemistry, and physics. Then, after Gordon resigned from the faculty of Johns Hopkins, the university organized the seventh annual research conference, which it held at the Cavalier Hotel, Virginia Beach, Virginia. Subsequently, a meeting was also held at the Hotel Henlopen, Rehoboth Beach, Delaware.

In 1937, when Gordon was elected secretary of the section on chemistry of the AAAS, he visualized the continuation of the conferences—as he had originally planned them—under the new auspices of the AAAS. The executive committee of the AAAS voted to authorize the conferences, provided that the association incurred no financial liabilities.

Gordon accepted these conditions without hesitancy. In 1938 a special research conference on chemistry was held under the auspices of the section on chemistry of the AAAS, with Harold Urey as chairman. The site was Gibson Island, and the three topics were "Resinous polymers," "Vitamins," and "Relation of structure to physiological action."

By the end of that year the pattern of the conferences had been cast. Each conference ran for 5 days, Monday morning through Friday afternoon. Morning sessions began about 10 o'clock and continued for 2 hours; afternoons were largely devoted to discussions between individuals or to recreation. The evening sessions began shortly after dinner and often carried on far into the night.

The focus was not on the past but on the future. The discussions were not centered merely on well-established results or known circumstances; rather they revolved about current problems, recent progress, and conjectures and hopes for the future.

Of equal importance was the composition of the group of participating scientists. All were names to reckon with—Urey, Baekeland, Fermi, Noyes, Langmuir, Rossini—and they came from universities and industrial laboratories. Those from academic institutions mingled and argued with those from industry or government, and to the advantage of all. Even scientists who were from competing industrial laboratories subordinated their rivalries in their enthusiasm for the scientific quest.

Over the ensuing half-dozen years, the conferences—the Gibson Island Conferences, as they came to be known—moved ahead slowly but quite steadily. Then stormy weather blew up. Despite the many advantages that the island offered, there were also disadvantages. Harmony did not always prevail between the members of the Gibson Island Club and the visiting scientists; accommodations were limited; the heat and humidity were often uncomfortably high.

In 1946, Gordon and his assistant Sumner Twiss (who had directed the conferences during Gordon's illness) resigned. The conferences were at low ebb; few thought the young, struggling organization would manage to churn through the heavy weather. Those were uncertain and crucial days.

A committee of the conferences, under the leadership of George Calingaert, set out to select both a new site and a new director. The committee appointed W. George Parks of the University of Rhode Island as director and selected Colby Junior College, New London, New Hampshire, as the new meeting place.

The conferences had come very, very close to foundering. Now, in 1947, a new era was opening. (The conferences were officially named the Gordon Research Conferences of the AAAS in 1948.) When the conferences left Gibson Island, they had consisted of ten weekly sessions; soon they had been expanded to 12 sessions at Colby. The conference administrators then pondered an important question: Was it wise to conduct conferences on different subjects concurrently at the one site? An analysis of participants' views revealed that most relished the singleness of purpose of the conferences. Most savored the assurance that anyone they met on the Colby campus was a scientist with kindred experience and objectives. They looked with disfavor on any "intrusions."

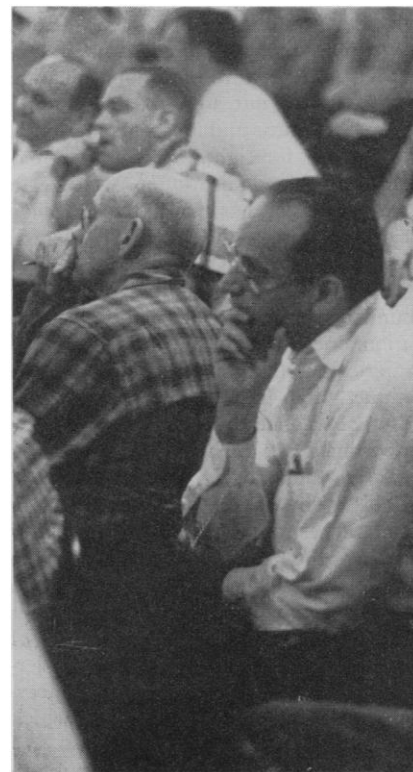


Fig. 2. Participants. [Courtesy George Woodruff and *Business Week*.]

Consequently, in deference to those wishes, an additional site—New Hampton School at New Hampton, New Hampshire—was opened up in 1950. By 1953 it too was accommodating 12 full-week sessions, so a third conference location, Kimball Union Academy at Meriden, New Hampshire, was established. Each of the three sites is now operating at maximum (12-week) capacity. Although there has been pressure to expand still further, it is the present feeling of the board of trustees that no immediate expansion is required. The consensus of the administrators is that 36 topics, well selected and with some scheduled for alternate years, provide a spectrum of subject matter which is adequate to cover the most active areas of science. The conferences are primarily concerned with those active areas where information is developing so rapidly that it is well-nigh impossible for the literature to keep pace.

### Spectrum of Subjects

Gordon was interested in many sciences, but he was devoted to chemistry. Consequently, and as this outline indicates, his original plan was to foster communications among those who were leaders in chemical research. So, by and large, the early conferences dealt with subject matter that was characteristically chemical in nature. But Gordon also foresaw that as science burgeoned there would be more and more specialists who should communicate with other specialists in different but related fields, but who would have difficulty in doing so. Chemists, physicists, biologists, mathematicians, and many others, should share knowledge and experiences, for theirs is a common goal, the search for truth; and a mingling of ideas and concepts through the reaction of active minds is, through what we might term a synergism, enormously productive.

The conferences are still, in the main, essentially chemical. But in large measure they are now more appropriately termed "scientific" meetings with a chemical core rather than "chemical" in a narrow sense.

Last summer's range of topics profiles the breadth of interest which chemistry (and the conferences) now embraces:

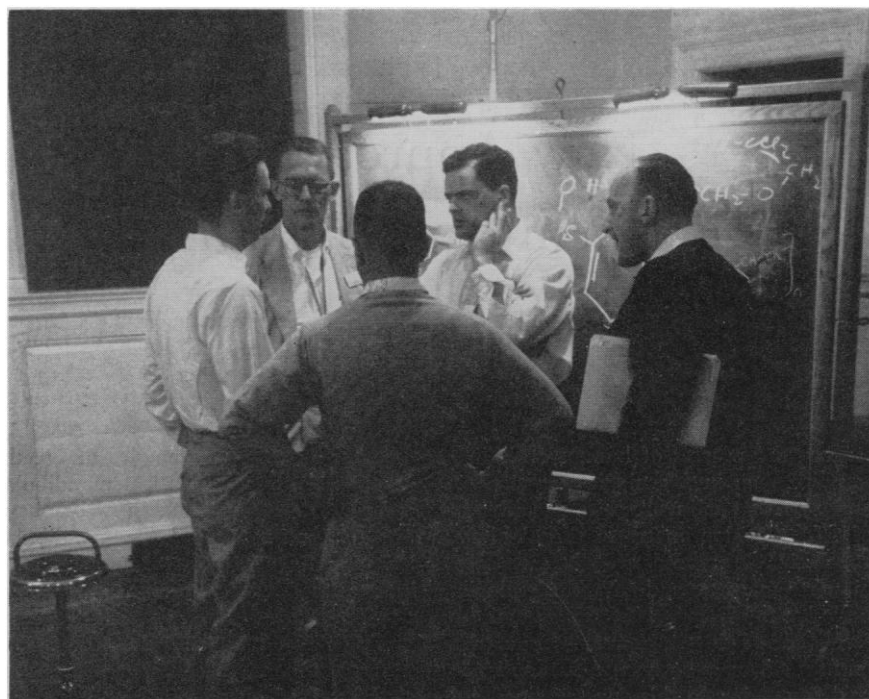


Fig. 3. Discussion. [Courtesy George Woodruff and *Business Week*.]

*Colby Junior College*: catalysis, petroleum, separation and purification, polymers, textiles, corrosion, instrumentation, elastomers, food and nutrition, vitamins and metabolism, medicinal chemistry, and cancer.

*New Hampton School*: organic reactions and processes, metals at high temperatures, proteins and nucleic acids, coal, radiation chemistry, organic coatings, chemistry and physics of metals, chemistry of steroids, analytic chemistry, inorganic chemistry, statistics in chemistry and chemical engineering, and adhesion.

*Kimball Union Academy*: lipide metabolism, stream sanitation, nuclear chemistry, chemistry and physics of isotopes, solid-state studies in ceramics, chemistry of bones and teeth, chemistry at interfaces, ion exchange, high-pressure research, toxicology and safety evaluations, infrared spectroscopy, and glass.

The number of subjects and the number of scientists who participate in the conferences is now vastly greater than it was even a decade ago. Even though this means that the conferences, as an institution, are large, each conference is itself

small. Following the precepts that Gordon laid down, each group is restricted in size (100 to 125 conferees maximum). Discussions are thereby active, and views may be more effectively shared. Formal papers are discouraged; discussion, in the manner of a true symposium, prevails. In order to keep inhibitions at a minimum and discussions as free as possible, no record is kept of what is said, nor is the publication of any aspect of the proceedings permitted.

Many unselfish men have done much over the years to raise the conferences to the stature they now enjoy. Moreover, without the early assistance of a number of cooperative corporations, the conferences would not have been able to shoulder the initial burdens.

But to Gordon alone the conferences are indebted for the vision, the zeal, and the friendly enthusiasm that nourished them through many trying years. Any institution is but the lengthened shadow of a man. Gordon's is a long shadow and one of great substance. Its influence has been felt over the past two decades and will be felt over many decades yet to come.

