Carroll L. Wilson
1910-1983

Report
of
The Carroll L. Wilson Awards Committee
January 1987
CARROLL L. WILSON
1910 - 1983

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THE CARROLL L. WILSON AWARDS COMMITTEE

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January 14, 1987

TO: Colleagues and Friends of the Late Carroll L. Wilson

Dear Colleague,

This report has been prepared by the Carroll L. Wilson Awards Committee Secretariat for distribution to all contributors to the Awards Fund, with initial distribution planned for the Fourth Annual Wilson Memorial Dinner being held at the MIT Museum on February 7, 1987. The report summarizes the major activities that have taken place at MIT, since Carroll's death in 1982, to establish a lasting memorial to our mutual friend and colleague--Carroll L. Wilson--and transmits an article on Carroll by Elting Morison and the Wilson biography by Milton Lomask.

The early initiative for this memorial began, immediately following Carroll's death, among the former members of the "Fellows in Africa" program and a few of Carroll's former students and project staff. From these discussions, about seventy people including the Fellows, the WAES/WOCOL staff and other students and friends formed an ad-hoc working group of "Close Associates of Carroll L. Wilson" that:

- Raised seed money of over $50,000 for Wilson Memorial activities at MIT;
- Commissioned a biography of Carroll L. Wilson by Milton Lomask—a near final version of which forms the bulk of this report;
- Arranged for a special section of Technology Review, the MIT alumni magazine, to be dedicated to Carroll (the February/March 1985 Wilson article is included in Appendix A of this report);
- Held two reunions in January 1984 and February 1985; and
- Decided, with the encouragement of the MIT Corporation, to officially constitute the Awards Committee and to proceed with the project of implementing the awards.
For these early initiatives, we are grateful to:

- The ad-hoc Working Group including John Glass, Frank McGrory, Joe Perkowski, Mike Roemer, Constantine Simonides, and Jim Stoner;
- Scott Spangler and AZL Industries for the lead gift to fund the initial Committee expenses; and
- Hitchiner Manufacturing Co., Inc. and Millipore Corporation for their gifts to initiate the Wilson biography.

The Carroll L. Wilson Awards Committee

Bob Greene joined the ad hoc Working Group when he returned from Cairo in the spring of 1984. The Working Group finalized the concept of the Wilson Awards and formed the larger, more broadly-based Awards Committee which is listed on the Committee letterhead.

The Awards Committee then embarked on an international fund raising effort, which at this writing, has brought the total funds raised for the Wilson Memorial to over $225,000.

A third Memorial dinner was held in January of 1986.

Special thanks are in order for this phase of the effort to:

- The ad hoc Working Group for this phase which included John Glass, Bob Greene, Susan Leland, Frank McGrory, Joe Perkowski, and Jim Stoner;
- Dr. Saburo Okita and his colleagues from Japan and their splendid gift of $100,000 to MIT for this memorial; and
- The many contributors to the Awards fund from all over the world.

The First Wilson Awards—1986

In the fall of 1985, a Prize Committee was formed for the first (1986) awards. The awards were widely publicized within MIT; eighteen excellent applications were received, reviewed and ranked by the Committee; five finalists were interviewed; and two awards were made—a $5,000 graduate prize and a special $1,000 undergraduate prize. They are described in the June 11, 1986 Tech Talk article attached as Appendix B of this report.
Special thanks for their part in these first awards go to:

- June Ferracane, Susan Kendall and Frank McGrory who were information sources for the applicants;
- The committee of Sir William R. Hawthorne--Prize Committee Chairman, John Glass, Howard Johnson, Samuel Keyser (Associate Provost, MIT), Saburo Okita, and Constantine Simonides;
- Lynn Zimbalatti for organizing the application and review process; and
- Ralph Coburn of MIT Design Services for the design of the Awards poster and for the earlier design of the Awards Committee Stationary.

The Carroll L. Wilson Biography

The bulk of this report is the near final draft of a biography of Carroll Wilson, prepared by Milton Lomask, which we are confident you will find interesting and enlightening. It captures many aspects of Carroll's life and works and we are thankful to Milton for his fine manuscript.

We are especially thankful to Lynn Zimbalatti for organizing, supervising, and doing much of the word processing and packaging of the rough manuscript into the excellent version included in this report.

Carroll L. Wilson Remembered

This report begins with an article by Elting Morison entitled "Carroll L. Wilson Remembered," which was originally prepared as an introduction to a special issue of the Technology Review planned to be dedicated to Carroll. That initial plan evolved into several individual articles on Wilson projects and interest areas that have appeared in the Technology Review and in other publications. We are pleased to share Professor Morison's essay with you as another important part of this report.
Major Acknowledgments

I want to take this opportunity to thank:

- the three Co-Chairmen of the Carroll L. Wilson Awards Committee—Umberto Colombo, Howard Johnson and Saburo Okita—for their leadership, guidance and support in all aspects of the Wilson Awards;
- all other members of the Secretariat and the Committee for the contributions and support;
- Mary Wilson and the Wilson family for their encouragement and their moral and financial support;
- ENEA for their special corporate contribution to the Awards;
- Hitchiner Manufacturing Co., Inc. for their second generous gift; and
- Finally to thank again the many personal and corporate contributors—both large—and small—for their part in making this memorial at MIT to Carroll L. Wilson possible. As you would expect, contributions are still being received for Wilson Award fund and additional gifts are, of course, welcome at any time.

It has been and continues to be a great pleasure for both Edie and me to be working on the Wilson Awards. We greatly enjoy the opportunity of renewing old Wilson network friendships, making new friends, continuing the network and helping to carry on the Wilson tradition at MIT through these awards.

Sincerely yours,

Robert P. Greene
Secretariat
CARROLL L. WILSON REMEMBERED

By

Elting Morison

1984

Note: Originally prepared as an introduction to a planned series of articles, on each of the Wilson projects, in MIT's Technology Review.
I first met Carroll Wilson in 1947 soon after he had been appointed the General Manager of the Atomic Energy Commission. In those early days of the agency, he had many different kinds of problems on his mind and, like Caesar, he had to do all things at one time. One day he spoke of a peculiar trouble. Some of those who had worked for a long period in the enclosed and controlled environment of Los Alamos were having difficulty going back into the outside world. In fact they seemed even more distressed by the passage into a real society than they had been several years before by their entry into an artificial community. Given this situation he had two immediate objectives. The first was to find ways to simplify or "normalize" the process of transition. The second was to find someone who could describe the sources of difficulty and the corrective measures that were taken, so that those who might confront such a situation in the future could profit by this example. Such an account, he suggested, might be rendered by an anthropologist or a psychologist or a sociologist or a team of all three, but on the whole he would prefer to look for a discerning novelist.

As I found out in the following years there is a good deal of the essential Wilson to be found in this small occasion. No time spent on sophisticated savoring of the obvious ironies in the situation. No lingering over bizarre symptoms; nothing judgmental in the individual case. Simply enough evidence to demonstrate that there were bugs in the process of transition. The thing to do was to improve the system and leave a record of the improvement so there wouldn't be those bugs in the future. About the only surprising
departure from the person I came to know in later years was "the discerning novelist." And even that fell into place when, long after, while considering the disorder in some institutional arrangement he was put in mind of Anthony Trollope.

He came to the Atomic Energy Commission with the best possible preparation for the task. Upon his graduation in 1932, he had been appointed assistant to the President of MIT. In those days Karl Compton was introducing, unobtrusively, those intellectual reagents that produced in time a radical change in the character of the Institute, and Vannevar Bush, not quite so quietly, was taking advantage of the altered circumstances to expedite the change. They were remarkable men with whom Wilson worked closely for five years. In that time he learned a good deal about the relation of science to engineering, the organization of institutions, and the place and meaning of developing technology in a society. Then he went for three years to the Research Corporation of New York to explore these topics further within the different context of a private enterprise.

In 1940, there was yet another extension of experience within the same area of intellectual interest. In that year Vannevar Bush was made the Chairman of the new National Defense Research Committee which expanded in time to become the Office of Scientific Research and Development. His task was to mobilize the scientific and engineering energies in the society first to prepare for and then to fight a war. He asked Carroll Wilson to join him as his executive assistant. For the next six years, therefore, Wilson was fully engaged in the planning, negotiations, and the executive action that shaped the technological endeavor that became the foundation of the country's military power.
When the war was over Wilson returned to Cambridge as Vice President of the National Research Corporation of Boston. But not for long. In 1947 he went back to Washington as General Manager of the Atomic Energy Commission under the Chairmanship of David Lilienthal. Here he was engaged in the creation of a new agency, the conversion of facilities built during the war to peacetime operations, and the development of the new energy to serve purposes both military and civil.

David Lilienthal retired in 1950 and Wilson resigned shortly thereafter. He then became President of Climax Uranium, a company which extracted the ore from which atomic energy could be derived. And four years later he took over the management of the Metals and Controls Corporation in Attleboro, Massachusetts which, as the name suggests, was engaged in what is now called the business of High Tech. Four years after that, he arranged for the sale of the enterprise to the Texas Instrument Company.

Then, in 1958, at the age of 48, he pulled back from current operations to consider what he had, in the course of his varied experiences, found out about the world around him and about himself. As for the world around him—it was in great part shaped by the workings of the technological process. Sensibly managed that process could do much to remove traditional burdens and improve conditions. Because that process was constantly changing its sensible management was more likely to require ad hoc structures and new agencies than the received institutional forms—whether in universities, industry or government. And since that process now permeated the whole fabric of society its sensible management
required not only the energizing motive of private profit but a concern for policies developed to serve the public interest. Finally, in his various jobs with Compton, Bush and Lilienthal he had discovered that a resourceful individual who knew what he wanted to do could make a good deal more than a dent in any kind of organizational structure.

As for himself—he had discovered that he was more interested in a process than a product and in solving a problem that in maintaining even a well-conceived standard operating procedure. He also preferred a venture that was attended with the public interest to even an exciting enterprise for private profit. He also liked to run things and run them his way.

Possessing such information Wilson in the year 1958 looked around for useful and interesting things to do as a new departure. He considered a college presidency and he thought about organizing a group to develop a new universal language for foreign service officers in different lands in the hope that they would get a better understanding of what they were trying to say to each other. The careful canvass of these and other possibilities was ended when Howard Johnson persuaded him to join the faculty of the then Sloan School of Industrial Management. The idea was that he would teach something about the problems business men could expect to encounter and how to solve them.

The idea didn't last very long. In part this was because Wilson soon discovered that the classroom was long on analysis and short on imaginative conclusion, even longer on words and shorter on action. In larger part it was because very soon after his
appointment Wilson was asked by the Ford Foundation to make a tour of investigation through the emerging nations of Africa. There he found problems of many different kinds waiting to be solved. Among them he discerned one which he believed to be of capital importance that he was in a good position to do something about—the need to develop an adequate supply of trained and qualified people for places of responsibility in the several governments. On his return he discussed this finding with his class and out of these discussions came the program of the Fellows in Africa. It was the foundation stone for the singular career Carroll Wilson made for himself in the next twenty years.

That career has been examined in significant and particular articles by others closely associated with Wilson in one way or another in his various works. Here it may be useful to say a few words about Wilson's general way of going at things. Looked at from one angle those twenty years can seem merely an accumulation of things that happened one after another. Viewed in a different perspective it is possible to find in them a remarkable consistency and interesting logical development.

There were, for one thing, recurring constants in the method. He started always from a problem—carefully chosen, fully defined, and very specific. Whether the problem had to do with the energy, the chemical state of the atmosphere, or the place of conventional forces in military systems designed for the possible use of nuclear weapons, it always posed a clear and present or foreseen danger if left unresolved. And the way to resolve it was, invariably, by a more enlightened use of scientific understanding and engineering
capacities. Nevin Scrimshaw put the whole thing in a nutshell when he described his first meeting with Wilson who was then looking for a way to insure adequate nutrition for a population that was steadily growing. "In a manner that I was later to learn was his characteristic style, he was trying to identify a major global problem of the future that could be averted by the deliberate application of science and technology with intelligent foresight and effort."

Such an approach is no doubt to be expected from one who listed himself in Who's Who as an engineering administrator. But he clearly recognized that successful administration in the world as it is depends not only on finding the right machines but also the right people. So another recurring constant in his method was the persistent search for personnel best qualified by training, experience, and temperament to advance the understanding of the problem at hand and to do something about it. Whether he was looking for a new graduate of the Yale Law School, an Asian banker, a maker of models for social systems, a biologist, a Field Marshall, or an advisor to the President on foreign affairs, he usually found them and they were usually the best in their line of business. And he most always found the most appropriate place for the application of their knowledge and personal power. In those twenty years he devised a variety of systems through which human energy combined to do useful work—a program in which young men could administer some part of a province, a study group, a research institution, a world conference, global workshops.
These systems were very carefully designed and incisively administered to produce high thinking and enlightened doing but they were not based on the principle of plain living. There were nice balances between work, rest and recreation and the systems were, as a rule, settled in the most gracious surroundings. Though himself, except in the matter of automobiles, the least self-indulgent of men, he obviously believed human beings would rise to their best work when supported by solicitous service and the physical surroundings of an English Castle or a Grand Hotel on some Mediterranean shore. Given the results, which must include the pleasant residual memories of many members in these systems, it is hard to fault this finding.

So much for the constants in this long equation. What of the logical development? Carroll Wilson started to do something in Africa when the Ford Foundation asked him to give them a report on what was happening there. First he started the Fellows in Africa and then proceeded to be a prime mover in the creation of the International Center for Insect Physiology and Ecology in Nairobi. Then, as a new member of ACAST, the UN Advisory Committee on Science and Technology, he learned of the dangerous shortage of nutritional supplies and turned his attention to the way to expand the production of single cell protein. These several concerns combined to engage his interest in larger ecological problems which led to a series of studies on man's place in and influence upon the environment he lives in.

While at work on these studies the way in which human action could adversely influence one area of the material surrounding was
dramatically stated in the world oil shortage. From there it was natural to consider alternative energy supplies and then to concentrate on the workshop on coal. All of which come from the fact that the availability of resources was finite, that there were seemingly limits to growth and that a search must be made to find the conditions for what Wilson liked to call a sustainable society. But in time it became obvious that a more immediate threat to a sustained social structure lay in other causes and so Wilson in his last project turned to the finding of a new place for conventional arms within the existing military arrangements.

From all this it should be clear that for 20 years Wilson moved steadily from the particular aim to the dispersed implication, from the specific to the general and from the national to the continental to the global. This enlarging progression was not just in matters geographical, geological or ecological. Carroll Wilson went from a concern with the dangers created by what men could do to change some of the conditions of the nature in which they lived, to a concern for the dangers imposed by those fixed conditions of nature that could not be changed and then on to a concern for those ultimate possible dangers caused by what men could now do to one another.

So singular a career must be the product of unusual causes and a number of people have from time to time discussed what made Carroll Wilson tick. He didn’t make it very easy for them to find out. As he always sought the appropriate ordering system for any kind of energy, he contained his own within a presence of considerable formality. And he tended to put some distance between himself and other personalities around him. This, in a time when
instant intimacy is an assumed probability, occasionally put some people off and caused others to feel not fully understood. It also certainly worked against easy or full disclosure.

And, in fact, he was not one for much jocose camaraderie. But also, in fact, he had, as in other matters, his own ingenious ways of getting at the personal equation. His house in France is only one kind of example. He loved it and it gave him and his wife many very happy short retreats from their vigorous engagements. Others, it occurred to him, should have the same advantage. So he devised an interesting system of occupancy that provided many of those he knew with the same opportunity for respite in those surroundings that he and his wife had found so satisfying. Or, another example of a different kind: "He taught me a great deal but never by intention. He put me in the right place and trusted me." --which may or may not be what he intended. Or take the testimony of those Fellows in Africa who claim that the direction of their careers and the nature of their lives was changed by the opportunities provided.

And what of this larger interests and purpose? He was certainly not one of "that bunch of long-haired idealists and do-gooders" that his old trail breaker Vannevar Bush so distrusted. Nor does the word visionary, which has been used, seem quite right. It suggests the far-sighted view he took of things, but it also suggests an explicit doctrinaire prescription and charismatic emanations he did not have. One man who worked closely with him said "If he dreamed dreams down in there I never knew what they were. He just wanted things to work better."
It might be as well to leave it there. Possessed of that desire, as another old associate said "In persuading others to face up to major global problems and find ways of applying science and technology to their prevention or solution he was unexcelled."

Whatever his personal powers and inclination for independent action, he required a base of operations and the support of institutional surroundings. As he had at the beginning he found them again for the last twenty years of his life at MIT. It was a lucky thing for both of them—and for a lot of others. He, or no one else, could have done what he did without the kind of resources and special attitudes the Institute provided. And what he did give to many people—both those in learned communities and those in authority in many lands—was a better understanding of the enduring purpose for which the Institute was founded: to serve the public interest through enlightened applications of the kind of knowledge it generates.
ONE OF A KIND: CARROLL L. WILSON*

a biography by Milton Lomask

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* Not Final Title
ONE OF A KIND: CARROLL L. WILSON

a biography by Milton Lomask

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Chapter 1
BEST-LAI'D PLANS

In the late spring of 1932 Carroll Louis Wilson was looking forward to the completion of his student days at Massachusetts Institute of Technology and to the bachelor of science degree in engineering administration that would be his ticket to the corridors of corporate opportunity. Outside the windows of his fraternity house in Cambridge, Massachusetts, the oak trees rimming the Charles River Basin were in leaf and the young man's final examinations were behind him when he received a summons to the office of Karl T. Compton, president of the now more than a century-old institution for the training of scientists, engineers, architects, and business executives.

Coming to the presidency two years earlier, Compton had already made some changes in the structure of MIT. Now he was contemplating another. He was adding to his staff a slot to be known as assistant to the president. His thought was to fill it with an MIT graduate whose academic record and observed conduct qualified him for the duties involved. It was not to be a permanent post. After four years the first occupant must step down to make way for someone else. Out of the 440 bachelor-level graduates of 1932, Compton had chosen Carroll Wilson. He hoped Carroll would say yes.

But Carroll said no. He said it firmly. Carroll always said no firmly. He always said yes firmly. He rarely said maybe. He was an inveterate planner. All our efforts to the contrary, most of us drift through life. We bumble into careers, into love affairs
and marriages. Not Wilson—at least not often. Many who knew him during his seventy-two years among us have remarked on the care with which he would construct a line of action and the doggedness with which he would pursue it.

He was a native of Rochester, New York, where his father was the Wilson half of Wilson & Heye, Public Accountants and Auditors. Among the older Wilson's associates was a vice president for exports at Rochester's major industry, Eastman Kodak. Thanks to this connection, Carroll had long since found it possible to plot the course of his life down to his last hour.

First, on his departure from MIT he would cross the Pacific to become a "China Hand" in Eastman Kodak's overseas operations. The great depression was on but to twenty-two-year-old Wilson, reared in a well-endowed home, its disruptions were irrelevant. America was still America. A capable young man with a good education behind him could still make his fortune if he planned properly and worked hard.

Like many an American youth before him, when Carroll thought "fortune," he thought in terms of a million dollars. If he could make his million with reasonable dispatch within the confines of the big photographic supply company, fine; if not, he would shift at the appropriate moment to some company where he could. Once the million was banked, he would retire from private industry to devote the rest of his life to some soul- and ego-satisfying public service. It was a well thought-out curriculum vitae—as neat and punctilious as its maker; and Wilson had no intention of deviating from it. He was well aware of the eclat certain to inure to the position Compton was offering. But sorry, he said, his plans were set.
This exchange in the office of the MIT president took place in the early afternoon and the remaining daylight hours were busy ones for the young man. It was not until evening, alone in his room, that he experienced a sudden and jolting sense of unease.

"Oh my God!" he later quoted himself as saying. "What have I done?"

At six-thirty the next morning he was on the second floor of the huge domed building at MIT that looks out over the Great (now the James R. Killian, Jr.) Court, hunkered down against the wall opposite the entrance to the president's office. When shortly before nine, Compton's stocky, broad-shouldered figure appeared at the head of a nearby stairway, Carroll was on his feet at once.

"Yes, Dr. Compton!" he shouted.¹ Thus he got the job—and he did it well; so well that it can be said that the decision made in that spring of 1932 was a salient item in the forming of Carroll Wilson's career and in the forming of his character as well.

To begin with, his labors for Compton—and as we shall soon see, they were a smorgasbord—brought him into the orbits of three remarkable men. And to a young man, eager to learn and dowered with a great capacity for doing so, what could be more agreeable than the solicitous presence at this elbow of older men of singular intellect and sterling character?

First among them—first in time, that is—was Compton, a man of solid attainments in science, in education, and in public service. After him, in swift chronology, came Vannevar Bush, vice president and dean of engineering at MIT in Carroll's student days, and
James B. Conant, president of Harvard. In the ensuing account of Carroll's life, we will have occasion to note some of what he learned from these men, how he learned it, and what he did with what he learned.

Within months after the completion of his work with Compton, Carroll was in Washington, D.C., working as executive assistant to Bush, only recently appointed to the directorship of the National Defense Research Committee, presently to be expanded into the Office Scientific Research and Development, the multi-faceted organization through which American scientists channeled their contributions to the winning of World War II. It was on the heels of that victory that Carroll moved on, and up, becoming in 1947 the first General Manager of the Atomic Energy Commission, the body enjoined by the Congress of the United States to take over from the military the custodianship of the country's frightening new force, nuclear power.

That at the age of thirty-six Wilson was put in charge of the operations of a three-billion-dollar enterprise is a tribute to his abilities. It is not one of the aspects of his career, however, that can be cited as most clearly entitling him to biographical attention.

Those developments emerged later, after his return to MIT, first as a visiting lecturer and subsequently as a tenured professor. It was during this segment of his life, beginning in 1959, that Carroll formulated, found the funding for, and conducted a series of memorable projects.

The first of these was the Fellows in Africa Program, an imaginative exercise in third-world development and international
cooperation and good will. Next came the American-based Study of Critical Environmental Problems or SCEP that was instrumental in persuading the Congress to bar the supersonic transport from American skies. Next came an international inquiry into a related matter known as the Study of Man's Impact on Climate or SMIC, and SMIC was followed by two long-term efforts to pinpoint sources of energy for the world other than oil: the Workshop on Alternative Energy Strategies (WAES) and the World Coal Study (WOCOL), both of them productive of suggestions of interest to the American and other national governments. And in the closing years of Wilson's life there was still another global workshop, known as the European Security Study or ESECS and dealing with the potential role of conventional military forces in the protection of Western Europe against attack by the Soviet Union and other Warsaw Pact nations.

Most of these endeavors dealt with problems that mankind would be confronting in the years ahead, and in 1976 we find Carroll thanking J. Merton England, the historian for the National Science Foundation, for recounting in the magazine Science some of Carroll's contributions to the creation of that federal agency. "It's great," Carroll told England, "that somebody keeps archives and that somebody as perceptive as you sifts them. Having focused almost all my attention throughout my years on the future--present focus is on 2000...--my memory goes dim about the past. If somebody had asked me about the things you report I said or did I would have to confess to complete ignorance."² The New York lawyer, Oscar M. Ruebhausen, recalls asking Carroll one day about something that the two of them had done together many years before. Carroll's response
was to wave a long arm dismissively in the air, saying that he neither remembered nor cared to think about things that were past and done.

The man who conceived and directed SCEP, SMIC, WAES, WOCOL, and ESECS could point to no university-degree-backed expertise in any of the fields of learning on which those projects rested. This fact did not go unnoticed at MIT with its long roster of highly-trained specialists in the arcana of the sciences and the technological arts. In faculty circles there and elsewhere reservations were voiced, questions raised. How much faith could be put in scientific gatherings guided by a man with little or no formal grounding in any of the abstruse disciplines involved?

That Carroll was sensitive to these criticisms is implicit in a statement he made at a party in his honor at the MIT Faculty Club, staged by a score of his friends on his sixty-fifth birthday in the fall of 1975. Several of those in attendance recall his remarks.

Elizabeth and David Dodson Gray, among others: Co-authors with William F. Martin of Growth and Its Implications for the Future, a book growing out of one of Wilson's seminars at MIT, the Dodson Grays trace their close acquaintance with Carroll to a shared concern at the velocity with which the inhabitants of planet Earth are spending its nonrenewable resources.

It was Liz Dodson Gray who shopped and found the card that accompanied the presentation to Carroll of one of those desk-size clocks that tell you what time it is in all parts of the world. The card showed a farmer of about Carroll's height (six feet, four) standing tall in a field of wheat, with under this rustic panorama a
caption reading "Happy Birthday to Someone Who's Outstanding in His Field."

When from behind the thick lenses of his spectacles, Carroll's brown eyes fell on these words he produced one of the few flashes of humor to show up on the record of a sober-spired man.

"Ah!" he said, heavy lips parting in the half-smile he frequently displayed. "Now at last I have a field."

Joseph Perkowski also remembers the party at the MIT Faculty Club. Then a graduate student at MIT, now working in building systems and technology-assessment for a high-tech industry, Joe was struck by Carroll's reaction to his gift.

Speaking in his always unhurried manner, Carroll called the time-zone clock an appropriate memento for a compulsive traveller, revealing that "only a few days" prior to the party he had "logged his 365th transatlantic crossing". What intrigued Perkowski was not "the number of the trips...but that CLW would keep track of them so precisely." Joe concluded that Wilson had "a true preoccupation with travel and that this characteristic contributed significantly to the way he shaped his life."

Others can confirm Perkowski's guess. John H. Bush, founder of a company with which Wilson was long associated, recalls the frequency with which he and Wilson ran into each other at airports in various parts of the world. "Look here, Carroll," Bush remembers himself saying during one of these encounters, "you seem to be spending at least seventy percent of your time on airplanes." To which Carroll, then a man in his sixties, replied with a smile, "Jack, I'm one of the lucky men of this world. I'm doing exactly what I want to do."
Was he running away from something? Not certainly, from his wife and their four children, for whenever it was practical to do so he took them along. From some grudgingly remembered experience then? His daughter Rosemary believes that there were strains in the home where her father grew up that he preferred not to think about. She has described him as a man determined "to separate his past from his present."

If at MIT and elsewhere there were those who lamented Wilson's lack of a field of learning, there were many others who saw in his very amateurism the "critical mass," as one of them has put it, that made his projects go. Even those who found his broad-brush methods disconcerting could see that his results attracted attention. Political leaders studied them and sometimes acted upon them. They were generously discussed in the press and in other branches of the media and in international circles.

Some of this interest centered on the ingenious procedures that Wilson developed for his projects and especially for the three largest of them, the global workshops on energy and the European Security Study. In every case he began his preparations in much the same manner. First he selected from around the world what he believed to be the best authorities on the relevant sciences and technologies. Unless he knew an individual well, however—and it is amazing how often he did—he did not then and there ask him to take part.

Instead he got in touch with the authority by mail. In this letter he outlined what he was planning to do and expressed a desire to call on the authority or to correspond with him so as to obtain his thoughts on the subject.
He used these exchanges for various purposes—partly to test and sharpen his own ideas and to acquire additional ones; partly to size up the expert. If, during the course of the conversation or the correspondence, Carroll concluded that this man or woman was reasonably flexible, one who could be counted on to join with his peers in a consensus—in the promulgation of a platform of practical, which is to say usable, propositions—then and then only would he invite him or her to participate in the impending deliberations. 5

Having bagged his experts in this cunning fashion, Carroll did not limit his own tasks to those of a presiding officer. He mingled with the informed minds. He talked with them. He questioned them. He listened to them for hours on end, patiently, the long strong fingers of his enormous hands intertwined before him and his head deferentially cocked. In short, he picked their brains. It has been said of Carroll that although he usually began a project knowing little about any of the subjects to be covered, he ended it knowing a great deal about all of them. 6

"It was something to watch him pumping an expert," says William H. Matthews, director of one of the four institutes of the East-West Center, an international research organization in Honolulu, Hawaii. Bill remembers well his labors as Carroll's assistant for the two environmental studies, SCEP and SMIC.

"When Carroll got hold of someone who know a lot about something," Bill says, "he'd wring him out like a sponge. He'd put question after question and every answer he got moved him to further questions. He took in what he heard, too, and he kept it. He had a marvelous pair of ears and an amazingly retentive mind."
Not that Carroll acquired all his information aurally. He was a steady reader and, it would seem, a speedy one. An entry in his appointment calendar for 28 December 1935 finds him starting *The Golden Bough*; James G. Frazer's classic twelve-volume study of comparative folklore, mythology and religion. Twenty-three days later the entry for 19 January 1936 reads "Finished Golden Bough."

He was more than careful in his selection of places where his carefully chosen experts convened and conferred. Five criteria had to be met: comfortable quarters, good food, elegant surroundings—there was a visible streak of the sybarite in Carroll's tightly organized persona—, a pleasing landscape, and a minimum of outside distractions. After siting a session of the Workshop on Alternative Energy Strategies in Paris, Carroll let it be known that he would "never make that mistake again." The city of *l'amour* and Offenbach was no place for men and women assembled to tackle the weightier problems of mankind.

Once his interdisciplinary savants were safely immured in their golden cage, Carroll can be pictured as figuratively knocking their heads together and gently but relentlessly prodding them into issuing an agreed-upon series of recommendations that influential organizations in their homelands, governmental or otherwise, could translate into law and action if they were so inclined. Nor were these papers to be composed at leisure after the project ended. An ironclad rule of every study and workshop was that its report must be written, typed, and edited before the project concluded—and published and distributed to bookstores within ninety days after that date!
There was more to this unique methodology than has been mentioned here, but its nuances can be better handled at subsequent points in this narrative. Of pertinence, certainly, is Joe Perkowski’s summary of the philosophy underlying Carroll’s meticulously ratiocinated rules and regulations.

According to Perkowski, Carroll’s way of doing thing rested on his belief that much of the knowledge unearthed by academic specialists has a way of disappearing into the wastebasket of time. Why does this happen?

"I remember Carroll saying," says Joe, "that it happens because most scientific gatherings aren’t run right. First this scholar and then that one gets up and reads his paper. And when he finishes, he gazes about with a 'look-how-wonderful-I-am' expression on his face. After which his paper is put on a shelf, or published and put on a shelf. And the same thing happens to the other papers. And in this fragmented condition what the hell good are any of them to most of us? What’s needed at every such conference is for someone to merge the bits and pieces of knowledge presented into some sort of coalescence that people can do something with."

Similar in vein is a commentary from another man familiar with Carroll Wilson’s methods. Dr. Nevin S. Scrimshaw of MIT, a scientist with a long record of achievement in the fields of food and nutrition, has said that at the business of "persuading others to face up to major global problems and find ways of applying science and technology to their prevention or solution, he (Carroll) was unexcelled." Similar, also, are the recollections of Francis H. McGrory, assistant director of MIT’s Energy Lab.
"I can't say how much CLW knew about the many subjects his work touched," says Frank, "but this I can say from working with him. Carroll knew how to convert knowledge into action, into movement. He was a genius at application."

A genius at application. That perhaps, could serve as CLW's

hic jacet.
Chapter 2
GROWING UP IN ROCHESTER

Born on 21 September 1910 in Rochester, New York, and baptised nine days later at Blessed Sacrament Roman Catholic Church, Carroll was the second child of Louis W. and Edna Carroll Wilson, a sister, Dorothy May, having arrived three years earlier. The house where Carroll and Dorothy grew up—a large, solid, two-story-plus-attic wooden frame structure—stood at 1359 Highland Avenue in a neighborhood of substantial houses surrounded by ample and well-tended lawns.

A boy of ten or eleven, walking at a boy’s clip more or less north-by-west from 1359 Highland could within minutes arrive at the sunken freeway that then as now followed the course of what for over a hundred years was the famous Erie Canal. If, continuing this imaginary jaunt, our boy—say Carroll or, more likely, Carroll and his constant companion Stanley Townsend—moved on in the direction of downtown Rochester, they would come presently to East Avenue with its elegant mansions behind ancient magnolias, then into Main Street East at an intersection near the building containing the fourteen-room suite of the accounting firm operated by Carroll’s father and his partner K. Werner Heye, and finally, having crossed the Genesee River, into Rochester’s densely built-up West Side where most of Eastman Kodak’s eighty-some plants and office buildings overlook the boulevards along the river. A noisy and lively manufacturing city was the Rochester of Carroll’s day and one, it would appear, with a nicely honed sense of the risible, as
witness this advertisement in the 30 August 1924 issue of the Rochester Democrat & Chronicle: "Aaron Burr's reputation can't beat ours as upholstery specialists. Rochester Furniture Company."

Carroll's American ancestors began with a family of immigrants from Ireland, who in 1849 settled on a farm outside the big city on Lake Ontario. Succeeding generations consisted mostly of farmers, businessmen, and school teachers; and his father's younger brother, Frank J. Wilson, was for many years chief of the United States Secret Service and well known for his part in the solution of the Lindbergh kidnapping and other criminal causes célèbres. Little is known of the background of Carroll's mother save that her maiden name was Edna Sarah Carroll, that she was born on 21 July 1881 in Buffalo, New York, and that her forbears came to the United States from Alsace-Lorraine.

Carroll's father too was a native of Buffalo, where he began life on 14 June 1880, the first-born of the three children of John Francis and Mary Ellen McGreevy Wilson. He grew up in a Catholic home, but the extent of his interest in Catholicism as an adult is a matter of conflicting recollections. Some of Carroll's children see in his seemingly negative views of religion evidence of rebellion at an early age from a strict Catholic upbringing. But Stanley Townsend, an intimate of the Wilson's Rochester home for many years, sheds doubt on this. Louis Wilson, says Townsend, seldom if ever went to church and Carroll's daughter Rosemary recalls that after "Grandpa" became a member of a Rochester country club, he abandoned Sunday Mass for the golf links. Carroll's mother was a Christian Scientist, but she made little or no effort to indoctrinate her offspring accordingly.
All in all, Carroll's attitude toward religion can be more accurately described as in keeping with the practice of his parents than as a reaction against them. He told his daughter Barbara that he had "renounced religion" at age thirteen. When she said to him, "If you were about to die, would you think of yourself as going to another world?", he answered that he had some thoughts on those matters "deep inside," and that he intended to keep them there.

At least two other instances of concurrence with parental mores can be cited. Carroll's mother, in her younger years, raised airedales and was active in the anti-vivisection movement; and all his life Carroll surrounded himself with dogs, cats, and other animals. Louis Wilson loved big cars; there was never a time when the detached garage at 1359 Highland did not shelter one or more Cadillacs, Lincolns, or Lasalles; and to the end of his days Carroll was an ardent tinkerer with and collector of classic and antique automobiles.

Townsend characterizes his memories of Carroll's mother as "nothing but pleasant." "Generous" and "thoughtful" are his words for her. But it is clear from other sources that Edna was a stringent and sometimes censorious disciplinarian, deficient in humor and with little or no capacity for fun. How these attributes affected her children is brought out in some of Dorothy's letters to Carroll--letters written in 1945, long after the older Wilsons had parted company and the younger ones had left home to become parents on their own.

Dorothy was in California at the time, visiting her mother. Her marriage was in trouble; her husband was an alcoholic and she was worried about the impact of his conduct on their nine-year-old son; and "like a Course in psychoanalysis (sic)," she wrote, the experience of
living with Edna again had awakened memories of a girlhood shadowed by "too much pressure and repression." What has "filtered thought my rather dense perception," she informed Carroll, was "the reason" for her being the sort of person she believed herself to be: "the weak one of the family, the only weakling of we four, the rather spineless, peace at all costs sister." She did not "mean to be unkind, but I can see by mother's attitude toward Don (the nine-year-old son), how she treated me as a child. Either the treatment wasn't essentially bad for you or else you were a much stronger person always, but it was wrong for me."

One gathers from Dorothy's words that early in life her brother learned how to erect within himself barriers against bothersome matters. Many years later his friends, Oscar and Zelia Ruebhausen, would observe with interest his continuing ability to do so. During the second half of CLW's life his activities frequently took him from his home in New England to New York, and on these visits he often stayed with the Ruebhausens at their apartment on the East River. Coming back to the apartment in the evening, after a long day of meetings and conferences, Carroll would remove his jacket, loosen his tie, kick off his shoes, get a beer from the kitchen, wedge his long frame into a comfortable chair, and talk for hours—sometimes about the day's doings, more often of plans for the future. When a promising idea struck him, he'd grab the folds of his shirt, just under the shoulders, and tug at them excitedly.

Mrs. Ruebhausen has participated in a number of substantial projects. From 1972 to 1975 she was the only woman on an eleven-member committee to revise the charter of the City of New York. From 1967 to 1970 the Council on Foreign Relations employed her as a special
consultant to its Executive Director. She has worked on a sixty-member body assembled to advise the United States Department of Commerce on questions of trade relating to national policy overseas.

"When I'm doing something like that," she says, "I sometimes lose a little sleep at night. Not Carroll! No matter how well or badly things were going for him, I don't think I ever saw him exhibit the least sign of worry. When the time came to retire, off he'd go to the guest room and I swear he always fell asleep at once and stayed that way all night."

Stanley Townsend's memories of Carroll's father suggest a man who was one kind of person inside the home and another out. At home he distanced himself from the other members of the family. Come evening he'd retreat behind the newspaper, a glass of whisky beside him. "I wasn't close to my father," Townsend relates, "and I got the impression that Carroll wasn't close to his either. My father didn't have anything to say to a kid. Neither, I'd guess, did Mr. Wilson."

One incident of those long days clings to Townsend's mind. "Sunday evenings," he recalls, "I'd go around to Carroll's place. It was a sort of routine with us. I'd get there about seven and we'd go up to a hideaway at the back of the attic where Carroll fiddled around with the gadgets that interested him--and part of the reason for our going up there was to keep from bothering his father."

"Well--one night, when I rang the kitchen bell, Mr. Wilson came to the door. I can still see him standing there, in the light, with a glass in his hand, a heavy-set, red-faced man. I never saw him without a glass in his hand. But I hastened to add, I never saw him drunk either. Never."
'Oh, it's you,' he said. 'My God, boy, what're you doing here?'
And he gave me a little kick. Not a hurtful one; not exactly a friendly one, either. It was an expression of annoyance. There he was, in the parlor, enjoying his paper and his whisky, and the bell rings and nobody runs to answer it, and when he gets to the door it's only me, and of course I was always under foot. I remember saying to myself, 'Maybe he doesn't like me,' and I don't think he did. He resented me. I was an intrusion on his pleasures.'

Away from home, among his business cronies, Louis could be ebulliently outgoing. Townsend's guess is that at the accounting firm of Wilson & Heye, it was Heye who handled the figures. "Wilson," he surmises, "was the one who went out and drank with the boys and knew everyone in town and pulled in the business." Pull it in he did, for until the Great Depression invaded industrial Rochester in the early 1930's, Wilson & Heye was a flourishing business with the big Fanny Farmer Candy Company among its numerous clients.

Another of Townsend's recollections is that for a time Louis sat on the Fanny Farmer Board of Directors and that one year the board held its annual meeting in "Montreal or Bermuda or some place." The directors travelled first class, stayed at a luxury hotel, and were royally entertained. "All at company expense," Stanley remembers Carroll's telling him, and the animation with which Carroll conveyed these matters to his chum indicates that one of his most pervasive dreams--his longing to traverse the world in style--crystallized at an early age.

They met--Carroll and Stanley--in their fifth year when their mothers escorted them to a temporary wooden building on the grounds of Francis Parker School Number 23, to enrolled in kindergarten.
"I think it was kindergarten," Townsend says today. "Could have been first grade. At any rate the 'tempo' had been put up only recently and the ground around it still exhibited the ravages of the bulldozer."

Cleanliness stood high on Edna Wilson's child-rearing prospectus. Carroll and Dorothy must always be scrubbed and polished at home and impeccably arrayed when they sallied forth; and for this occasion Edna had attired her son in a new overcoat. When school let out and the children, released from their first educational bondage, came tumbling and screaming into the yard, Stanley, coming up behind a handsome overcoat, gave its wearer a shove that sent him sprawling in the mud.

"At that moment," Townsend recalls, "Edna showed up--just in time to see what had happened to her son's new coat. Carroll didn't mind in the least. He was always a wonderfully good-natured kid. But his mother--ah! She gave me the side of her tongue, and I don't mean the soft side either."

Thus began a friendship that was to endure throughout the remaining sixty-seven years of Carroll's life. For eight years the two boys attended the same primary institution, Francis Parker, and for the next four years the same secondary one, Monroe Junior and Senior High School. At that point their paths diverged. Carroll enrolled at Massachusetts Institute of Technology and Stanley went to The University of Rochester, to begin a career that was to include thirteen years as a Professor of German Literature at The University of Southern California in Los Angeles, ten years as head of the Department of German at The Pennsylvania State University in University Park, Pennsylvania, extensive research in Europe on a Fulbright and other fellowships, and the publication of a variety of articles and reviews in the leading journals of his field.
During their youthful years they spent many of their out-of-school hours together. They walked in Cobb's Hill Park, "exactly three and a half minutes" from each of their homes, accompanied as a rule by one of a succession of airedales named Colonel. They talked for hours at a time and played games in Carroll's finished-off attic retreat. One of the games had to do with railroads. "What's ATS stand for?" Stanley would ask, and Carroll, of course, would reply, "Atchinson, Topeka, and Santa Fe." In time, Professor Townsend recalls, "we knew about all there was to know about American railroads: where they ran, their mileages, the names of their engines, everything else." Some afternoons, en route home from grammar school, the two boys would stop at the home of a friend who had a victrola. The professor remembers his first hearing of George Gershwin's *Rhapsody in Blue*, a recently-released piece that some Americans regarded as "unfit to be called 'music'" and others as the musical wave of the future. "Carroll's sister Dorothy," Townsend writes, "knew about such matters, being older than we were and having a keen interest in poetry and art in general."

Townsend confesses to a total disinterest in mechanical things. It runs in his mind that Carroll was always "dabbling with something of that sort," but it is from others that we learn that at sixteen he invented a torpedo that went hunting for its target--a device, as developed by someone else, that came into actuality during World War II.'

After the cold days set in, Stanley passed the late afternoons skating on the big rink in Cobb's Hill Park. Not Carroll. No sports of any kind, no group activities could tear him away from his books and his inventions; and neither then nor thereafter was he the least bit
interested in learning about such things. If, as William James wrote, "Wisdom is learning what to overlook," Carroll can be assigned to a niche among the sagacious. All his life, he was willing to let someone else, anyone else, be the all-American boy. "I never knew a man more aware of what his peers were thinking and doing," says his daughter Rosemary, "and I also never knew a man who was less influenced by them."

In his fourteenth year, a magazine writer tells us, he learned to drive the family car. To keep the law at bay, he fashioned "a fake cigarette, complete with glowing red tin-foil end." Apparently this gave him "the necessary look of maturity," for as he "swooped about the countryside with his property smoke clenched fiercely between his lips, "no policemen on motorcycles intervened."

Occasionally, in the summer months, Stanley Townsend accompanied Carroll and Carroll's mother and sister to Blue Mountain Lake, a resort in the Adirondacks where the Wilsons rented a cottage for the season. At "Blue," as the Wilsons still call the place, the boys wandered under "the trees...in the gathering darkness," singing one of their favorite songs, "Pack up all my cares and woe;/ Here I go, swinging low;/ Bye, bye, blackbird." Here, too, one evening, they experimented with cigarettes and Townsend recalls that on the following morning Mrs. Wilson "reached out and not ungently seized my shirt..., sniffed, and said to me, 'Go easy with those things,'" or words to that effect.

Among Townsend’s memories of Blue is an incident premonitory of Carroll's ways of looking at things as an adult. Once while his mother and the two boys were out on the lake in the Wilsons' motor boat, Edna "was horrified to discover what seemed to be a dead mouse" on the floor of the craft. "Carroll," Townsend recalls, "stepped on it firmly to
ensure that it was dead." Only then did they realize that it was not a mouse but "a small bat and that it had probably been alive since bats are usually inactive in the daytime." Anti-vivisectionist that she was, Edna was visibly upset at its destruction. Carroll said, "Oh dear!" He was unhappy to see his mother distressed, but his mild reaction to the incident suggests that he was convinced he'd done nothing more nor less than the situation required. Years later, he responded similarly to newspaper accounts of a typhoon in India that left thousands dead. When Rosemary Wilson expressed grief at the loss of so many lives, Carroll pointed out that on balance the disaster was of benefit to a country incapable of adequately feeding its teeming millions. What Rosemary saw as a human tragedy, her father saw as nature's way of adjusting population to resources.

During the school year Carroll and Stanley were in touch almost daily, with the exception of one week. And what happened to Carroll during that interval is the subject of the earliest letters in his free-flowing and at points scarcely legible scrawl that we have.

Louis Wilson came from modest beginnings. In Buffalo, where he grew up, his father was a traffic cop, and Louis was understandably determined that his brilliant boy should go even higher in the world.

Accordingly, in the fall following Carroll's completion of his studies at Francis Parker grammar school in 1924, Louis and Edna put their son and his bags into the family car—a Lincoln that year—and drove eastward by way of Boston to Andover, Massachusetts, to enter Carroll in the well-regarded preparatory school for boys, popularly known as Andover or Phillips Andover, officially as Phillips Academy.
They were to repeat this trip sooner than they thought, for as the events of the next five days reveal, fourteen-year-old Carroll had already decided that he was not going to cut the pattern of his life from any template fashioned by hands other than his own. All his life it was to be Wilson's way, or no way.

The Wilsons reached Andover on 15 September, a Sunday. By nightfall Louis and Edna were on their way home and Carroll was ensconced at Williams Hall with a roommate named Charley, who turned out to be a non-stop talker. To make matters worse, Charley had many friends and they were forever piling into the room, and none of them ever stopped talking either. They were "pretty good" kids, Carroll admitted, but he didn't care for any of them and they didn't care for him. They "think I'm funny," he wrote home, "because I'm not crazy about softball and that stuff." Indeed he felt "completely left out because everybody has their own friends and think I'm awful funny."

Already they'd given him a couple of nicknames. One of them, "Orpheus," suggests that he'd owned up to liking classical music, which he did. The other, self-explanatory, was "Engineer." As though the local passion for softball were not burden enough, Carroll presently discovered that every Phillips boy had to take two hours of gym a day. "Isn't that rotten?" he asked his parents.

Nor was Orpheus-Engineer Wilson looking forward to Saturday night, for on that evening there was to be a "parade" of the new students, "and we have to walk all over town shouting we're 'Fresh Preps,' and some have to carry mud and stones around with them." Edna, of course, had provided her boy with only the dressiest of clothes, "but I'll try," he promised her, "not to get dirty."
By Tuesday he wasn't sure that he could put up with Phillips
Academy for as much as another twenty-four hours but if he did remain,
he was going to have to get away from Charley and company and into a
room by himself. He'd talked to Mr. Phillips, but Mr. Phillips had said
that at the moment there were no single rooms available, but there might
be one later. What Carroll was looking for, he told his parents, was a
"cozy little room," preferably one with a window facing "directly west
toward home." He described himself as feeling "awful exiled all the
time," adding that "if I can get a single room pretty soon it will be
better." He did have a few favorable things to say of Phillips. The
meals were good—he described one of them in detail: "lamb, mashed
potatoes, peas tomatoes soup and some very good pudding for desert;"
"Mr. Phillips and Mrs. Bailey and Mr. Healy our master in the hall and
at my table" were all "very nice" to him; he'd encountered "a kid from
Lowell, Massachusetts, named E. Clark Dixon whom he liked; and there was
"a Jap in the building" who seemed nice. "It's probably pretty hard for
him," Carroll observed, "because the kids don't pay much attention to
him."

Edna had left her gold watch with him and Carroll was happy to
report that "now that I have fixed it up...(it) hasn't lost a minute
since we were in Boston." His own watch was on "new time," but he'd
kept "Mother's watch" on "old time," meaning apparently Rochester time,
so that by looking at it he could figure out exactly what everyone was
doing at home. His spirits plummeted when "Mother's watch" said
6:15 p.m., for that was the dinner hour at 1359 Highland Avenue, the
hour of "reunion," when everybody related what he or she had been doing
during the day. Ah, how he longed to be in the Wilson's big,
high-ceilinged dining room at that moment. "Every car that goes by," he wrote, "I look out to see if its you and yesterday...I saw a Caddy cab, a new one coming up the road and nearly stopped it and made them take me home." He signed this letter, as he did most of the others, "A terrible lot of Lonely love/ Carroll" and followed this with a postscript reading "Have sister kiss peggy for me"—Peggy being the female successor to a long line of airedale Colonels—and followed this with a row of x's across the page.

It would seem that Main Street, Andover, was off limits to the Phillips Academy boys for Carroll devoted considerable effort to figuring out alternative routes to the only two places in town he wanted to go.

One was the Post Office where he bought the special delivery stamps he put on all his letters. The value of each of them was ten cents, and one of his communications carried a "2 cents due" notice on the outside. He expressed the hope that his specials didn't wake anybody up in the middle of the night and sought to prevent this calamity by writing on the envelope in printed letters: "Not to be Delivered Between (10:00 P.M.) & 7:00 A.M."

His other destination in Andover was the railroad station. There he picked up a time table and was soon telling his parents that the minute they told him he could come home, he'd hop on a train by himself. "I...know about going from one station to another in Boston," he assured them, "so don't worry about me, please."

The frequency of letters home increased as the week progressed: one on Monday, one on Tuesday, three on Wednesday, and three on Thursday. By this time his missives had become a Miserere mei:
Before I bought all my books I wanted to know if I had to stay here because I feel worse than dead and keep feeling worse all the time and when I go in a kids room they drop hints for me to go and so I come back here and find Chuck and his friends who don't like me any better than I like them and on my schedule there are only 3 classes a day and sometimes only 2 so when I come up here and do my home work I can't go out but just have to sit here and look at my watch and think what you all are doing at home and wish I was there with you.

Please let me know by special delivery or something quick because I haven't bought any (books) it wouldn't take me 2 minutes to pack up and come home. Thus he was writing on Tuesday. On Wednesday morning:

Dear Mother: I just received your mail and when I read Daddy's card I got so sick I thought I was going to faint and so I went to the bathroom and I threw up half my breakfast and when you mentioned Peggy its a wonder I didn't start right out for home. I haven't smiled since I came and I don't think I ever will until I can come home. I don't like to look at anyone because they all would laugh at me if they saw my eyes.

Please let me know if I must stay here and if you say I must I think I'll die.
And on Wednesday afternoon:

Please, Please, Mother and Daddy let me come home because I don't fit here and I never will.⁹

Over the weekend the Lincoln arrived to carry him home. Carroll Wilson had won his first—but not his last—battle to chart his own course in life. But Louis Wilson was nobody's fool. He knew how to convert defeat into victory. Enroute home father and son struck a bargain. Carroll could go to Monroe Junior and Senior High School, opened only the year before and already touted as one of the most academically challenging secondary schools in the country, provided he agreed to get an A in every subject."¹⁰

How well Carroll kept his end of this negotiation we shall never know. Rochester retains public school students' records for fifty years, and then destroys them. But we do have the Monrolog 1928, Carroll's yearbook. It shows that he was one of the nine members of the graduating class of January 1928 to be elected to the National Honor Society, described by the Monrolog as open only to students "in the upper fourth" of their class. Also on the list was Stanley Townsend, class of June 1928.
Chapter 3
GETTING STARTED

In the fall of 1928 Carroll matriculated as a freshman at Massachusetts Institute of Technology, precisely aware, as has been noted, of where he was going. He was also precisely aware of how he was going to get there; alone. He'd made this clear to his sister before leaving home. He disliked people generally, he told Dorothy, and felt no need for them. Nor, he said, had marriage any place in his plans. He travels farther faster who travels light.'

In the near future Carroll's attitudes on these matters would alter dramatically; but how deep the change was, to what degree it engaged the inner-man--this hardest-to-answer of the many questions raised by what we know of Carroll Wilson's life and works. That he came to like and value many people and to be genuinely interested in knowing what they were all about: these are undeniable facts, but never would he make it easy for people to know him. Many have commented on this trait in Carroll--on his reserve, his formality, his essential remoteness. None has done so more eloquently than the woman who became his wife within less than a decade after he became a student at MIT. Asked if she can describe her husband's reactions to this or that family crisis, Mary Wilson shakes her head. "Oh no," she says in the gently reproving tone of a woman surprised that anyone would expect an answer to such a question. "Carroll, you know, was a bottled-up man."
Certainly he was an in-upon-himself eighteen-year-old when he arrived at "Tech" for the first time and enrolled in the famous Course number XV at what is now known as the Alfred P. Sloan School of Management at 50 Memorial Drive on the Cambridge waterfront. Throughout the ensuing academic year he trod the same path he had followed for four years at Monroe. He cracked the books. He earned consistently high marks in his courses in business administration, his major, and in mechanical engineering, his minor. He held aloof from his fellow students, viewing them with the disdain of a superior being toward men concerned with matters as peripheral as wrestling and soccer, football and girls. To be sure, he went out for freshman crew--and was undoubtedly relieved when he didn't make it. He even pledged a fraternity, but he seldom mingled with the brothers, and by the end of the year he had "quit them cold." Finding himself with a roommate who smoked, he persuaded him to refrain from lighting up in their quarters in return for his (Carroll's) picking up five dollars of the other boy's share of the monthly rent. "Oh what a frightful prude I was," CLW later confessed to a writer for the Saturday Evening Post. ²

But the time was fast coming when the prudery would disappear and the bookworm would turn into a butterfly. Carroll's own account of this transmogrification was that it began in the summer of 1929, following the appearance in the vicinity of the family's cottage at Blue Mountain Lake of a young man from Princeton, given to dazzling sartorial effects and hedonistic ways. Somehow this apparition out of F. Scott Fitzgerald stirred the strain of friskiness in Carroll ³--a facet of his personality to which Stanley Townsend can testify.
Speaking of the high-school-age Carroll, the professor remembers the two of them in one of the Wilson-family cars, with Carroll at the wheel, travelling at a "scary ninety miles or so an hour" from Blue Mountain Lake to the elegant hotels and pleasure palaces of Saratoga Springs, New York. He remembers too their occasional raids at 1315 Highland Avenue on the stock of liquor regularly procured by Louis Wilson from that staple of the prohibition era, his "personal bootlegger"--an activity on the part of the boys that when discovered released the scold in Edna. Most vivid of all to the professor is his memory of the fascinated attention with which he and Carroll listened to grown-up sister Dorothy's tales of nights spent with the "flaming youth" of the Jazz Age in the saxophone-haunted speakeasies of Rochester.

By the time Carroll returned to MIT in the fall of 1929, this latent aspect of his makeup had surfaced. He arrived in Cambridge garbed in duds like those of the Princeton "glamour boy,"--raccoon coat included--and a few months later was voted "best-dressed man" of the sophomore class. He acquired a different roommate, the smoker, it would appear, having retreated to lodgings where he could sin in peace. He discovered that people could be fun--or at any rate useful. One of his classmates, Thomas B. Rhines, noticed that Carroll's "intent seemed to be to 'get rich quick,'" and that he "worked at knowing the right people to give him contacts appropriate to this objective." Another, John F. Crowther, concluded that one of Carroll's "greatest talents was in 'buttering up' a person," and that he had the makings of a "con man." Less than elegiac but not inaccurate, these on-the-spot appraisals of Wilson-the-student become
ironic in retrospect. Although all his life Carroll gravitated to the best and the brightest and the richest, and although at the time of his death his net worth was in the neighborhood of $600,000,⁴ he never amassed the great fortune that was his original polestar. In the end a passionate intellectualism—an interest in "issues," in world problems—overwhelmed the get-rich-quick inclinations of his youth. "[M]en live by ideas as well as by their stomachs," he would one day affirm.⁷

For the remainder of his college years, the refurbished Carroll prevailed. He dated girls. He damaged one automobile and wrecked another, carrying friends to and from athletic events—and Louis Wilson, overjoyed at seeing his chick bursting the shell, uncomplainingly underwrote the repairs for one and replaced the other. He managed the lacrosse and cross-country teams, chaired the student self-government's budget committee—a position that made him "big man on campus"—and even flunked a couple of courses and made them up in the summer.⁸

Again he pledged a fraternity, Delta Kappa Epsilon, and this time it was for keeps. At intervals Carroll and his roommate lived in the "Deke" house at 403 Memorial Drive, at other intervals in an adjoining building where their apartment became a popular hangout for the brothers. When a resident of the fraternity proved to be an overbearing bore, Carroll gleefully participated in an escapade designed to teach him manners. The offending Deke had a car and one day while this vehicles was parked out front and its owner elsewhere, Carroll and his friends dismantled it and carried the parts upstairs. When that evening the alarmed motorist stormed into the house,
demanding to know where his car was, the brothers told him not to worry, that he would find it safe and sound and completely assembled in his room—which he did.⁹

After Carroll had taken his degree and become President Karl T. Compton's assistant, fun and games took second place to a time-consuming job. He drafted the boss' letters, kept his appointment calendar, relieved him of many of the routine activities connected with the administration of MIT, and assembled the budgetary requirements for the Institute. Compton was active in a number of national organizations, including the Engineering Council for Professional Development and the Science Advisory Board, set up in 1933 under President Roosevelt to consider the relation of science to the federal government. Carroll accompanied him to sessions of these bodies and acted as a secretary to committees connected with both of them. When the president's work confined him to Cambridge, the younger man went alone to these meetings as the older man's eyes and ears.¹⁰ Not that their relationship was exclusively business. With the passing years it grew increasingly personal. The notation "Walked with K.T. [Compton]" appears with frequency in one of Carroll's briefly-kept diaries and several entries in his appointment calendar read "Dinner Comptons" or "Movies Comptons" or "Skiing Comptons."¹¹

From time to time the travels connected with his work put him in places where he could check on the comings and goings of his family. Sister Dorothy, married on 4 September 1935, had moved to Montclair, New Jersey, where her chemist-husband DeWitt B. Stucke was an employee of Hoffman-LaRoche in nearby Nutley, a Swiss-owned corporation now known as the Roche Pharmaceutical Company. His parents had divorced.
Edna was preparing to live for a time in California and at fifty-four Louis Wilson had taken as his second wife an attractive and outgoing thirty-five-year-old named Helen Hollinger.¹²

Demanding as his tasks for Compton were, Carroll managed to do other things. He listened regularly to the Saturday afternoon radio broadcasts from the Metropolitan Opera and recorded his reactions in one of the short-lived diaries: "'Mignon'--Delightful," "Tannhauser--last act especially good." He listened to one of President Roosevelt's message to Congress and was unimpressed: "atrocious attitude--bad political harangue 'drive the money-changers from the temple' and other tripe." He read ceaselessly. It's worth noting that though his training was in the technologies, most of his off-the-job reading was in the humanities. He read and re-read The Forsyte Saga, John Galsworthy's portrayal of an upper middle class family in late nineteenth and early twentieth century London. He revelled in the misadventures of Becky Sharp of Thackeray's Vanity Fair and in the doings of Anthony Trollope's engaging villains.¹³

Years later, as a frequent visitor to England, he was grateful for the time spent in the pages of these and other novelists. "My reading of British literature," he once wrote home, "makes England so much more interesting than if I did not know London through Becky Sharp, the Forsythes, the Barretts of Wimpole Street, and many others."¹⁴

He devoted two months to an invention. It occurred to him that users of cigarettes might appreciate a stiff box-like container, so fashioned that its contents would neither be exposed to the air nor crushed when the package was pocketed. The hardest job was to design a top that could be flipped open easily and then closed completely.
Eventually Carroll did it. He even got a patent for the item and set up an organization for its production, but the flip-top cigarette pack so common today did not appear on the market until Carroll's patent expired and interested manufacturers could utilize his brainchild without paying royalties to its father.¹³

He continued to find time for the ladies. We meet some of them in one of his diaries: "Took Miss O to club for dinner....Beaucoup de plaisir. But Trop.... Took radio to Dorothy Corner--called on Marguerite." Passing friendships, one gathers, nothing overtly amorous. Then suddenly, in the appointment calendar for 22 December 1935, we encounter a one-line entry, "M. Bischoff," signalling the germination of something deeper, for Mary Alice Bischoff of London, England, was soon to become Mary Wilson of Boston, Massachusetts, and points west and south.

Born on 5 October 1913, Mary was the last of the three children of Charles E. and Alice Colby Bischoff. Charles, a London solicitor, died six months later, leaving to his American-born wife the bringing-up of Mary, her sister Frances, and her brother Edward.

In recently-recorded reminiscences,¹⁴ Mary ventures the belief that "people are born with special interests or at least acquire them at a very early age;" and the examples she offers in support of this theory are her husband's fascination since boyhood with unusual automobiles and hers since girlhood with horses. One of her childhood memories is of a wooden horse named Jock that for many years stood in the fourth-floor nursery of the Bischoff's London home at 29 Onslow Gardens. Hard usage had deprived Jock of some of his accoutrements, and it was a bitter grief to Mary when Frances and Edward refused to
let baby sister help them when the time came to resupply their dapple-gray plaything with a mane and a tail.

Unsurprisingly, several of Mary's recollections of her life with Carroll are equine-connected. During Carroll's years with the Atomic Energy Commission in Washington, D.C., the Wilsons and their offspring made their home in nearby Fairfax, Virginia, on a 5.67-acre property known as Little Spring Farm. Livestock was plentiful: a miscellany of cats and dogs, a goat or two, a frequently changing number of horses.

"One evening," Mary recalls in her recorded reminiscences, "Daddy [Carroll] and I were heading for a reception at the White House. I had done the feeding, supervised the supper, hugged the children, bathed and dressed...and we were in the car when a friend who happened to be on hand cried out, 'Stop! You can't go to the White House with hay sticking out of the trunk!'"

On another occasion, Mary's services as a leader of one of the 4-H Clubs, a nationwide educational movement for rural youngsters, got her into trouble. This episode began when she went to inspect a pony that had been reported as being neglected. What she found was "a skinny thing attached to a rope...no feed and no water anywhere." Learning from the little girl in charge that nothing could be done "until her father came home the following day, I invited her to bring the pony over to a box stall at my place." Next day, the father appeared. He was "raging," insisting at the top of his voice that Mary was trying to steal his animal. Carroll was home at the time and well within earshot, but there was no sign of him during the ruckus. As Mary puts it, whenever "things became extremely difficult, Carroll
always had urgent business at his desk." He did come out after the
visitor had calmed down and departed with the pony, and Mary remembers
his patting her on the back and saying that she had handled the
situation "just right."

Today, on the farm in Seekonk, Massachusetts, where the Wilsons
lived during the last twenty-nine years of Carroll's life, Mary
continues as in the past to raise New Forest ponies, a special breed
that traces its lineage back to the days of William the Conqueror when
these amiable outsized ponies were first found grazing in a
92,000-acre royal hunting ground called the New Forest--now a national
park--in the South of England.

The events that brought Carroll and his future wife together
originated in London in the winter of 1935 when Mary's mother decided
to visit the United States and renew her ties with people she'd known
in her beginning years, first in Yonkers, New York, where she was
born, and later in Newton Center, Massachusetts, where she met and
married Mary's father. Mary travelled with her, and in Boston mother
and daughter stayed with one of Mrs. Bischoff's girlhood friends on
Commonwealth Avenue and travelled back and forth to suburban Newton
Center to spend time with relatives.

Years before Mrs. Bischoff had made the acquaintance of
Jerome C. Hunsaker, then a young aeronautical engineer, doing a tour
of duty as a naval attache at the American embassy in London. By
1935, Hunsaker had become head of MIT's departments of aeronautics,
engineering and mechanics. He and his wife Alice were prominent in
Boston society, and shortly after the Bischoffs arrived from England
they were invited to a tea at the Hunsakers' Beacon Hill home at
10 Louisburg Square.
As the Hunsakers had two daughters and other young women were coming, they also invited some young men. Among them were James B. Fisk—then a graduate student in physics at MIT, later president of Bell Telephone Laboratories—and Carroll. Mary, we are told, took one look at Carroll's towering, sparsely-fleshed and always slight stooped figure, and it was love at first sight.

Not that Mary herself could be brought to use such language. Her own remembrance of the magic moment is that, "Well, he did look presentable." As her son Paul Wilson has observed, "Frankly, it's a tossup as to which of my parents exhibited the greater degree of what's called English reserve: my mother, who came by it honestly, or my totally American father."

As for Carroll's reactions to tall, fair-haired, blue-eyed, regal-looking Miss Bischoff, with her notably aquiline features and a way of tossing her head upwards when she spoke: "You're going to marry that English girl," Jim Fisk said to him on the day following the tea party;¹⁹ and a few weeks later Carroll was writing in the first of his off-and-on diaries, "Peut d'être [sic] j'ai de coeur."²⁰

But peut être is not absolument, and the man who had once vowed to marry no one was not about to rush into anything. Neither, for that matter, was Mary. As she later remarked, she needed time "for looking over" the young man—and time was exactly what she did not have. Her mother's schedule called for a visit with friends in New York and in Florida and for returning to England in the near future.

From Carroll's diary and other records, it is clear that the cautious lovebirds confronted this problem together and that by the
turn of the year they had found a solution. Mary would go home as planned but she would return in the spring, having meanwhile obtained a job that would permit her to remain in the United States for several months.

Consonant with this scheme, we find Carroll on 5 January 1936, making inquiries "re summer remuneration for lady riding instructors." On 20 January Mary is writing him from Florida. "Letter from M.B.," he notes in the diary. "Will be over next summer. Tres bien." On 27 January Mary comes back to Boston. Carroll meets her "at 2:55." They have tea at the Ritz, dinner with the Walworths, the Bischoff's relatives in Newton Center. They spend the evening at the theatre, watching Walter Hampden in *Cyrano de Bergerac*. On 28 January the diary reads: "lunch at Ritz with Mary. Decided to go to New York with her. Left on the 4 o'clock train." On 28 January Carroll accompanies Mary and her mother to the docks of New York, where they board the *Berengaria* for the journey home. "Au revoir till June," Carroll writes. "Returned [to Boston] at 4 o'clock on coach for 1st time in life." Carroll liked to travel first class. "Cold as Blitsen." Back at his office at MIT on 20 January, he disposes of the "usual quota" of official mail, "30 letters," and then pens two personal letters: one to his mother, the other to his sister, both of them "re MB."

During the next three months, the lovers kept the transatlantic communication lines busy. In February, Carroll read *Flush*, Virginia Woolf's biography of Elizabeth Barrett Browning's cocker, and ordered a "copy sent via London to MB." In June, Mary returned to the United States. Mrs. Bischoff came with her. In those days, Mary will
tell you, "looking over" one's prospective mate necessitated the presence of a "chaperone." Carroll, she recalls, "met me at the boat and for a few days we spent...time together." Then Carroll departed on a business trip with Compton that was to last for over two weeks, and Mary went up to Aloha, a camp for girls in Fairlee, Vermont, where she worked, not as a riding instructor, but as secretary to "Mother" Gulick, founder with her husband and at that time director with him of the three popular Camps Aloha. "I was an absolutely rotten secretary," Mary recalls. Half the time she couldn't transcribe her own shorthand. Mother Gulick sensed what was going on. "Tell me, Mary," she said, "when is that young man coming to see you?"

Alas, the young man was travelling with his boss in far parts. All Mary could do was wait, and while she was waiting her brother Edward further flummoxed an already well-scrambled situation. Edward wrote from Toronto, where he had gone to be with his sweetheart, a young Canadian physician known to her intimates as "Rome" (shortened from Rosamund) McCullock. Edward wrote that he and Rome were planning to marry, and he'd like to know if and when Mary and Carroll meant to do so. Given this information, he and Rome could so time their arrangements as to be free to attend Mary's wedding. Mary replied that yes, she was planning to marry Carroll, but she couldn't say when because he hadn't proposed. By return mail, Edward told her that he was delighted at the news and that he had written to congratulate Carroll on his impending nuptials!

What a comedy of errors, thought Mary. Here was her brother marrying her to a young man who hadn't even asked her! How could she face the young man when he finally arrive at Aloha? He finally did.
They went for a stroll and Carroll talked--about his work, about his trip with Compton, about everything except what Mary was waiting to hear. Hours passed (perhaps they were only minutes but they seemed hours to her) before at last, Carroll assumed the traditional position--on one knee--and said the proper words. In the years ahead they would often laugh together over this moment at Camp Aloha.

Back to England went Mary, to get ready for the big day, and on 28 March 1937 (Easter Monday) Carroll made the first of his 365-plus transatlantic crossings. At 9 a.m. that day his plane put down at Plymouth, England, and at 4:15 p.m. he arrived at Paddington Station, London, to be met by one of Mary’s relatives and taken to 34 Hereford Square where the Bischoffs now resided.

Two days later, at Chelsea Old Church—a handsome 400-year-old structure and one of the many historical treasures of London to be all but obliterated in World War II—they were married, with the Reverend R.E. Sadlier as the celebrant. Among those in attendance were the Karl Comptons, the Vannevar Bushes and the Jerome Hunsakers. The bridal music from Wagner's Lohengrin saw the bride down the aisle and Bach’s anthem "My Heart Ever Faithful" concluded the rites. Daughter Rosemary finds it of interest that the hands of a clock, visible in a picture of the newlyweds taken at the close of the ceremony, point to 4 p.m., the invitations having called for the ceremony to begin at 2:30. "What do you know!" she says. "Daddy was late to his own wedding."

During his stay in the British capital, Carroll obtained from the London County Council a driver's license to operate "a Motor Vehicle of any class or description from 1 March 1937 until 28 February 1938,
inclusive." In this vehicle, whatever it was, they enjoyed a
honeymoon that included a tour of the New Forest. It ended on 7 April
when they shipped for home on the Normandie out of Le Havre via
Southampton. Back in the Boston area, they set up housekeeping at
85 Strathmore Road in suburban Brookline, having entered into a union
that would last for the remaining forty-seven years of Carroll's life.
Chapter 4

VANNEVAR BUSH'S "ALTER EGO"

By the time of his marriage, Carroll had completed his four-year stint as assistant to President Compton of MIT and had begun his long and close association with the then vice-president of the Institute, Vannevar Bush. Impressed by the young man's performance in Compton's office, Bush had requested him to develop a plan for the administration of patents on inventions by members of the MIT staff.

For Carroll the major outcome of this undertaking was a change of jobs. In March 1937 he crossed the Charles to work at 13 Newbury Street, the Boston office of a science-funding foundation known as The Research Corporation of New York. Here he managed a department, newly created to handle not only MIT's patents, but also those of other such institutes and universities. Carroll described his work at 13 Newbury as less than exciting. Still, for three years, it brought him in touch with many of the liveliest minds in America, expanded his comprehension of how the scientific community operates, and paid him three hundred dollars a month.

Meanwhile Vannevar Bush had left MIT to become president of the Carnegie Institution of Washington and the guiding spirit in the creation of the Office of Scientific Research and Development (OSRD), the civilian agency of the federal government through which some 30,000 American physicists, chemists, engineers, and physicians developed the new processes and weapons—amphibious warfare, radar, and the atom bomb among them—that helped the United States and its allies to fight the second World War.
The origins of this science-mobilizing body go back to May, 1940. In Europe the armies of Nazi Germany were marching and conquering. The United States had not yet joined the spreading conflict but there were those in America, Bush for one, who sensed that that day was near. At a luncheon meeting at the Century Club in New York, Bush and a half dozen like-minded associates, Compton of MIT and Conant of Harvard among them, crystallized the idea that would become OSRD. Thanks to his friend Harry Hopkins, then a power in the White House, Bush obtained an appointment with President Roosevelt, who agreed to authorize the suggested agency—an organization known for a year and a day as the National Defense Research Committee (NDRC) and after that, its scope having been considerably enlarged, as OSRO.²

Consisting in its early days of eight members appointed by the President and serving sans pay, with Bush as chairman and Compton and Conant in charge of major divisions, NDRC was empowered to contract with institutions of higher learning, private industries, and individuals for scientific investigations and reports. An executive order dated 27 June 1940 activated the agency and on the seventeenth of that month Carroll Wilson received a phone call at the home where he and Mary were now living in Framingham, Massachusetts. Years later, discussing this call in a letter to Bush, Carroll couldn’t remember whether the person on the other end of the line was Bush or Compton. He did remember the date "because," he wrote, "it was Bunker Hill Day and a holiday in Boston. Whoever was on the line told him of the impending establishment of NDRC--it was the first Carroll had heard of it--,
said that its members needed his services, and asked him to "come to Washington...that night and spend a few days."¹

To Washington he went—and the "few days" stretched into six years.

For almost three of them, home remained in Framingham. Not until January, 1943, did Carroll and Mary and the first of their children, four-year-old Diana Bischoff and two-year-old Rosemary, move to Washington, D.C., to live first at 2220 Cathedral Street and then in suburban Silver Spring, Maryland, at 94D2 Woodland Drive.⁴

Carroll's duties varied enormously. With Conant he prepared an inventory of those institutions and persons in the United States capable of developing the instruments of war that the agency was set up to procure—a list that came to be known as the "Bible" of the organization. At intervals he took care of the patent problems connected with the invention of military material. At other intervals he handled the acquisition of security clearance for scientists engaged in secret work. For still other intervals he functioned as a general trouble-shooter. On one occasion we discover him gently chiding the administrative staffs of a couple of institutions, one a university and the other a private company, for spending hours anguishing over whether they should or should not approve an expenditure of fifty dollars.⁵

Plainly word of his abilities had gone abroad. Twice during the 1940's, private industry beckoned. One company offered Carroll forty thousand dollars a year; another, seventy-five thousand. These were tantalizing figures when laid alongside his nine-thousand dollars a year at OSRD, but Carroll refused both proposals. His
flair, he told Karl Compton, was for research and development, not for industrial management—a flash of self-appraisal confirmed by subsequent experience. As Oscar Ruebhausen has observed, "Carroll's talents were for thinking and planning. He was not a good businessman," and Barbara, the youngest of Carroll's four children, recalls that her father's investments, "were dictated by his interests, not by what he might make out of them. If he thought a company was doing something advanced and worthwhile, he put money in it. Nine times out of ten, consequently he bought high and sold low." On joining a private industry in 1954, Carroll was promised a block of stock by its president. "He never got it," says Ruebhausen, and a note in CLW's papers, dated September, 1954, and dealing with this transaction, reads: "Concluded with RW [Rathbun Willard, the company board chairman] arrangements re: stock option—1400 shares [never implemented]. In Jan. 1957 RW gave Mrs. Wilson and 4 Wilson children x shares stock."

After NDRC became OSRD and Bush moved up to directorship of the enlarged agency as a whole, Carroll was carried on the books as his "executive assistant"—but from first to last, according to James Phinney Baxter 3rd, the agency's official historian, he was Vannevar Bush's "alter ego." His shift of bosses—from Compton to Bush—was from still waters to churning seas. Both men were known for their ability to direct the thinking of others, but they operated differently. Compton was always the soft-spoken diplomat. Bush, behind his twinkling exterior, was more often than not the stormy petrel.
One catches echoes of Compton's way in the persuasive but unoppressive style with which Carroll, in later years, performed the role of mentor to a variety of bright young graduate students. Among Compton's contributions to the growth of MIT was his introduction into that bastion of formulas and blackboard diagrams of a strong infusion of the liberal arts. Who can doubt that his example was conducive to Carroll's enduring preoccupation with English literature?

Illustrative of Vannevar Bush's impact on the younger men around him is a story from Oscar Ruebhausen. A partner now with a well-known law firm in New York City, Ruebhausen spent a portion of the war years in Washington as general counsel for OSRD. One morning, he recalls, he and Carroll "took alarm at 'some decision or other'" that Bush had made. "I have to put it that way," Ruebhausen explains. "I have to say 'some decision or other' because I no longer remember what it was. All I remember is that Carroll and I deemed the matter important and concluded that it was our duty to say so to Bush himself. Into his office we marched. We reminded him of the action he'd taken and told him flat out it was wrong. Well, he gave us a look. You could call it a penetrating look. 'Gentlemen,' he said, 'this is a direct challenge to my judgment, leaving me no choice but to defend it.'"

Another story--this one from Elizabeth Dodson Gray--shows that Carroll took to heart the lesson he learned that morning. Liz's recollection is of an incident in one of CLW's classrooms during his professorial years at MIT. No sooner had one student finished reading an assigned paper than another was demanding the attention
of the professor. "Sir," he said, "I would like to critique that paper." The professor's response was swift and vehement. "No!" he said, slicing the air with both hands. "No critiques! If you have any suggestions to add to those we've just heard, tell us what they are. But no critiques!"

No critiques! No direct challenges. Don't tell a person that his ideas for dealing with a matter are wrong. Ask him, instead, if he's aware of any gaps in his thinking that remain to be filled or point out that there are other ways of doing the same thing. So Vannevar Bush had preached, so Carroll Wilson would practice.

Born in 1890, the son of a Universalist minister and the grandson of a Cape Cod whaling captain, Vannevar Bush came to manhood amidst the stone outcroppings of New England and embodied in himself the firmness of those natural phenomena. He began his higher education in 1909 at Tufts College, concluded it in 1916 with a Doctor of Engineering degree, jointly issued by MIT and Harvard. During the First World War he worked partly at the antisubmarine laboratory in New London, Connecticut, partly as a consulting engineer to the American Radio and Research Corporation. In 1919 he returned to MIT as a member of the faculty, and during the next twenty years he produced an array of inventions. Among them was the differential analyser, a mathematical robot used during World War II to solve intricate problems in atomic physics, acoustics, structure, and ballistics. Three careers lay behind him--scientist, inventor, educator--when he moved to Washington to become one of the architects of both OSRD and the National Science Foundation.
At the time of his death in 1974, he was best known to the generality of Americans for the accomplishments of his fourth and longest career—that of the country’s foremost statesman of science. To this day many members of the scientific community remember with approval his defense of J. Robert Oppenheimer during the hearing in 1954 that eventuated in the decision of the Atomic Energy Commission, then headed by Lewis Strauss, to deny to the “father of the atom bomb” a renewal of his long-held security clearance. Testifying in his crackling down-East manner, Bush contended that the three-man board formed to conduct the hearing had made a serious mistake in accepting as one of the “security risk” charges against Oppenheimer that he had openly opposed the development of the hydrogen bomb. "As I move about," said Bush, "I find...discussed today very energetically that here is a man who is being pilloried because he had strong opinions....If this country ever gets...that near to the Russian system, we are certainly not in any condition to lead the free world toward the benefits of democracy."

In his published writings, Bush celebrated the benefices of private enterprise, pictured socialism as a form of government destructive of human freedom, and warned against carrying the welfare state too far. Small wonder that some observers have described him as a political conservative. Yet, so wide-ranging were his activities and so unorthodox his mental process that one hesitates to shoehorn him into the constriction of a label, political or otherwise. Bush went where his thoughts took him. Perhaps the cement that bound him and Carroll Wilson together was
the never openly articulated recognition by both of them of this quality of independency in the other. Their closeness over many years was attended by few outward manifestations of it. When sometime after World War II, Carroll landed an executive position with an industrial firm, he hastened to thank Bush for helping him get it. "This is just the latest example of the great and beneficent influence you have had in my life," he wrote, only to water down this tribute to his old friend with a bit of banter: "I shall endeavor to continue to deserve the trust you have put in me by continually sticking your neck out about what I might be able to do." 10

As NDRC got underway in the summer of 1940, the war in Europe arrived at a turning point. France, Luxembourg, The Netherlands, Belgium, Norway and Denmark had fallen to the Nazis; and the Battle of Britain—the German effort to bomb into submission the only remaining democracy in Europe—was beginning. Constituting the first setback for the German war machine, England’s victory a few months later had considerable effect on public opinion on the other side of the Atlantic. Visibly waning by late summer was the belief on the part of many Americans that their country should hold aloof from the conflict; escalating rapidly was a conviction that the United States should intervene, at least to the extent of helping supply Great Britain with weapons and the other sinews of battle.

At NDRC the welcome mat was out when at summer’s end a group of British scientists, headed by Sir Henry Tizard, scientific adviser to his country’s air ministry, arrived in Washington, bringing with them the proposal that arrangements be made under which the United
States and Great Britain could carry on an exchange of scientific information pertinent to the war effort.

Long wedded to just such a scheme himself, Bush selected Carroll to act as NDRC's liaison officer and the younger man quickly drafted the agreements—later endorsed by the British and American governments—under which the suggested scientific interchange would be implemented. Consistent with the terms of these documents, Bush aired his intention of sending to England a mission charged with the establishment of a branch office of his agency in London.

When word of this development reached Conant of Harvard, he promptly volunteered to head the mission—and Bush, with equal promptitude, said nothing doing. Conant, giving the reasons for his offer, stressed his acquaintanceship with many of England's leading scientists as a result of his university's long-standing cooperation with Cambridge and other British educational institutions. Bush reminded Conant of the presence of war vessels in the Atlantic and pronounced the president of Harvard too valuable to his country for so risky a journey.

Conant knew with whom he was dealing. He knew that nothing could be gained by "pestering" Bush with arguments. Instead, as he phrases it in his autobiography, he "went to work on Bush's alter ego."

How Carroll handled this matter remains unknown. Apparently he too resorted to a flanking maneuver. Presently, at any rate, Conant was in receipt of a letter from Frank B. Jewett, senior member of the National Defense Research Committee and president of the National Academy of Sciences. Jewett wrote that he was seeing Bush on the following day and would put in a good word for Conant.
However the word was put in—by Jewett on his own or by Jewett at Carroll's urging—it worked. At noon, 16 February 1941, aboard the American Export Line's S.S. Excalibur, the three-man mission—Conant, Wilson and Frederick L. Hovde, a chemical engineer from the University of Rochester—sailed for Europe. Their destination was Lisbon, from whence they would fly to London. Conant and Carroll would remain in England only for whatever time it took to set up the new office. Hovde would stay behind to become the first of the administrators of OSRD-London.

In his autobiography, Conant describes this trip as the "most extraordinary experience" of his life, and it's clear from Carroll's account of it in his letters home that for him too it was an adventure. More than once we find him assuring Mary that the whole thing was closer to "a junket than a mission," a statement patently designed to allay her fears for his safety. As the Excalibur steamed eastward "in a blaze of light at night with floodlights...on the American flag painted on the sides," there were but few causes for alarm. Once, a British gunboat "came within half a mile and signalled to us to fly our number," only to "plough" northward after "satisfying itself that we were O.K." When word arrived that "30,000 Germans had occupied Santander, Spain...we sat round until 1 a.m. discussing the possibilities--what each would do if the Germans took Lisbon before we got there."

Carroll found his fellow passengers a fascinating lot. He provided Mary with descriptions of the "principal characters"—a series of sketches marked by an acerbity seldom encountered in the remainder of his voluminous correspondence. Reflecting the
passions of the time, he divided the Americans on board into two
camps. One of them he referred to as "the Nucleus", meaning those
who like Conant, Hovde, and himself believed that "the U.S. should
be in the war." On the other list he put the isolationists and the
 appeasers. His most caustic observations fell on 54-year-old
 John Cudahy, a man then very much in the news.

America's ambassador to Belgium at the time of its conquest by
the Nazis, Cudahy had told reporters that the occupying Germans
"behaved better than U.S. soldiers would have done"—a statement
that prompted Time magazine to say that Cudahy "talked as if he felt
that invasions are not so bad if babies are not bayonneted." The
former ambassador, at the time Carroll met him on the Excalibur, had
become a correspondent for Time-Life magazine. He was en route to
Germany where he would obtain an interview with Hitler at
Berchtesgaden and quote der Fuhrer in an upcoming issue of Life as
saying that the only thing he wanted was "peace and prosperity" for
all nations.¹⁴

"Mr. Cudahy....is simply amazing," Carroll wrote. "He has the
mind of a five-year-old child. We had a pow-wow the other night
trying to convert him but it's hopeless. We suspect he is on his
own hook going to Berlin for the [Joseph] Kennedy-[Charles]
Lindbergh crowd to get Hitler's peace terms. He is pretty
self-conscious with us and is probably conscious that he is on a
slimy mission....He studiously avoids J.B.C. [Conant]. I think he's
afraid J.B. might convert him."

Japan had entered into a military alliance with Germany and
Carroll's sketches took in the Japanese on the Excalibur passenger
There are five men," he wrote Mary, plus "the Baroness Fugii and her two sons and a nurse. The nurse walks around in Japanese costume continually rocking the baby and humming Oriental music and sits by the hour looking at Esquire! The men are sawed off, dead-pan birds—they drink like fish and get plastered nightly. And what else they do I can't put in this letter but will tell you about when I see you."

In late February, Carroll was writing from the Palaccio Hotel in fashionable Estroil on the borders of Lisbon. Throughout the war the Portugese capital was an important center of transoceanic air transport, a jumping-off place for continental Europeans fleeing the battlefields and struggling to get somewhere else. The place was "mad," Carroll told Mary. "One feels as though one were on a very small island which might be washed into the sea at any moment by the dark...civilization of the middle ages which begins only 100 miles to the East and extends almost to San Francisco around the world."

Not that the week in the Lisbon area was without its diversions. "Prices are low and life is gay," Carroll recorded. "The casino is just across the park from here." There one evening he watched an American woman "take 5,000 escudos away from the head" of the German Gestapo who had come to Portugal to play baccarat.

Friday, 25 February, brought a "minor thrill...when we read a...news dispatch [from Berlin] saying that J.B. and we were experts in poison gas and going to London to help the English use [it]...against the Germans." Carroll spent a part of that day with a well-known physician, discussing the health problems that the war had created in England. Learning that vitamins C and B-1 were in desperately short supply there, he urged Mary to send some of both to her mother and sister in London.
Getting on a plane from Lisbon to the British Isles proved difficult. Conant got off on Saturday, accompanied by John G. Winant, who had come over on the Excalibur to replace Joseph Kennedy as America's ambassador to the Court of St. James. Wilson and Hovde were detained until a clerk at the British Embassy—"incredibly ineffective or downright crooked"—located the orders that at 8 a.m. Tuesday put them on an England-bound DC3 belonging to the Royal Dutch Airlines.

The DC3 set down in the "west of England" where Carroll and Hovde were placed on a train to London, to be met at Paddington by a group of English scientists and escorted to their hotel. Late that night, traversing the streets on foot, Carroll was astounded at how easy it was to get around in a unlighted sky. "[L]ittle did I realize," he wrote Mary, "that our evening walks at Westwind [their home in Framingham] were perfect training for walking in blackout."

Frequently, in the weeks ahead, he would walk to his hotel after evenings at the homes of his wife's relatives, tin hat on head, gas mask slung over shoulder, and flashlight in hand. In time he grew accustomed to the droning of planes overhead, to the booming of antiaircraft guns in Hyde Park, to the occasional shaking of the walls of his hotel. "London," he wrote, "looks rather bedraggled with a tooth knocked out here and there." One evening he and Hovde took refuge in the basement of a warehouse where, at the height of the Battle of Britain, 15,000 persons had spent the nights. Then there were no "sanitation facilities whatsoever." Now, with 3,500 sleeping in the place on the average, there were "some." After the all-clear sounded, the two Americans explored a number of other shelters. Among
them were a bleak cavern under the docks of London and the "model Shelter" beneath the vaults of a large bank where they dined in the "shelter restaurant...orchestra playing--fine silver, linen and food --My God, what a world of contrasts!"

At noon on 6 March, Conant lunched with Winston Churchill at 10 Downing Street and Carroll and Hovde were guests at the Athenaeum Club, where one of their hosts was physicist Charles A. Darwin, "grandson of origin of species." They spent the afternoon in the company of A.V. Hill, member of Parliament for Oxford. He took them through the Royal Society, England's oldest scientific body. The tour included "the Fellows" meeting room in which the secretary [Hill at that time] has a set of red, yellow and green lights. In the discussions each person is allowed ten minutes. For the first minute the light is green. It then turns yellow, and red after ten minutes. If the speaker still persists, the fellows begin laughing and he perforce must stop."

On 19 March, all three members of the mission attended a luncheon in Ambassador Winant's honor at the Savoy. "[T]he most distinguished group with whom I've yet broken bread," noted Carroll. "The entire cabinet--bishops, lords, viscounts, etc. I sat at a table facing the head table not 25 feet from Churchill and had a wonderful opportunity to watch him....I will bring home the menu with the names of all the guests. On my left was Sir Joseph Addision, descendant of the Addison....J.B. sat at the head table between the Lord Chief Justice (couldn't help thinking of Gilbert and Sullivan) and the Belgian ambassador." By the time of this event Roosevelt had signed into law the Lend-Lease Bill, America's first full-scale effort to come to the
aid of the "beleaguered fortress" that was the United Kingdom in 1941. Carroll couldn't "begin to describe what this has meant to the British People."

Wartime security restrictions prevented his sharing with Mary the substantive activities of the mission to England. Here and there in his letters, to be sure, one spots oblique references to inspection tours of military installations, to meetings at sundry research centers. Documents available to us now show that on 31 March, CLW spent the day at Farnborough in Hampshire, conferring with George P. Thomson, chairman of a committee of English scientists assembled to examine the possibilities of nuclear fission (the splitting of the atom) as an instrument of war.\(^5\)

By 16 April he was back in Washington where he continued his work as Bush's assistant until a few months after the cessation of hostilities in the fall of 1945. December of that year found him serving as secretary to an interdepartmental working group set up to prepare an agenda for the use of Secretary of State James F. Byrnes at a meeting in the Soviet Union of the foreign ministers of that country, the United States and England to discuss the international handling of atomic matters. Carroll's job was to draft the proposals that Byrnes took to Moscow, where on 27 December the ministers called for the creation of the international agency that, as authorized a few weeks later, would be known as the United Nations Atomic Energy Commission.

The installation of this body within the only recently formed UN initiated in Washington activities with which Carroll was closely connected. On 7 January 1946 Byrnes ordered his deputy, Dean Acheson,
to take charge of a committee set up within the Department of State to formulate guidelines for the assistance of Bernard Baruch, subsequently named by the President as the American representative to the UN on atomic matters.

To prepare these specifications, Acheson recruited a Board of Consultants, headed by David E. Lilienthal, longtime chairman of the Tennessee Valley Authority, and on 23 January Carroll and lawyer Herbert S. Marks, Acheson's special assistant, signed on as the staff, with Carroll acting as secretary of the Board of Consultants and Marks as secretary of the parent body.

During the ensuing weeks, Wilson and Marks organized and put into writing the thoughts and data that went into what was to be known as the Acheson-Lilienthal Report, viewed in some quarters as the "last best hope" for a degree of international cooperation that would divert nuclear power into peaceful channels and eliminate atomic and other weapons of mass destruction. It was a hope, as we know now, that would wither as the Soviet Union retired behind the "iron curtain" and the Cold War set in.

By the time the Acheson-Lilienthal Report became public in late March, 1946, Bush had put OSRD into the hands of a caretaking staff--preparatory to its pending termination--, the Wilsons had moved back to Framingham, and CLW had become vice president and financial director of National Research Corporation, a Boston company engaged in the development and production of high vacuum equipment processes for use by makers of penicillin and other industries.
Chapter 5

MANAGING THE ATOM

But high vacuum processes were not to be the wave of Carroll Wilson's future. In mid-October, 1946—less than seven months after his assumption of the vice presidency of National Research Corporation in Boston—he received another phone call from Washington.

The voice on the other end of the line belonged to Herbert Marks, the State Department lawyer with whom Carroll had worked on the Acheson-Lilienthal Report. President Truman had signed into law what the press was calling the McMahon Bill, after its principal sponsor, Democratic Senator Brien McMahon of Connecticut. The McMahon Bill was the instrument whereby control of the country's new force—nuclear power—was to be removed from the aegis of the military and turned over to a five-person civilian agency to be known as the Atomic Energy Commission. Truman had named David Lilienthal to the chairmanship of this body. Lilienthal, in turn, had asked Marks, an acquaintance of many years, to assemble a "housekeeping staff," a few young men capable of conducting the operations required to put the AEC into business. Already Marks had obtained the services of Joseph A. Volpe, Jr., an attorney working in the Manhattan District, the arm of the military that had brought
the atomic bomb into existence." Would CLW be good enough to join them? Marks guessed that their labors would take a couple of weeks--maybe a little longer." By the end of the month Carroll was back in the national capital. Again he had taken on a temporary job that would burgeon into a permanent one: the largest, the most pressing--and the most vexing--of his career to date.

On 12 November, the staff and the "five atoms," the newspaper's name for the recently-appointed Commissioners, left Washington to inspect some of the facilities that the Manhattan District had established during the war. At their first stop--Oak Ridge, the mammoth installation in Tennessee where many of the materials for the atom bomb had been made--the five Commissioners held their first meeting and issued their first orders. One of these named Carroll to the post of acting administrator. At the next stop--the hillside mesa at Los Alamos in New Mexico, where the first bombs had been built--the newly-designated administrator left the party and hurried back to Washington. At a desk in Herbert Marks' office in what is now the Old Executive Office Building alongside the White House, he spent the next several days drafting a document, to be signed by the President, that a few weeks hence would transfer America's three-billion-dollar atomic empire from the Manhattan District of the United States Corps of Engineers to the AEC. Simultaneously he arranged for the procurement of temporary quarters for the agency, six rooms for the Commissioners and three for the staff in what is now the Department of State building on Virginia Avenue Northwest. A few month later the AEC would find a permanent home at 19th Street.
and Constitution Avenue Northwest in a stolid concrete-block
structure originally erected for the Public Health Service. Its
smallness—capacity, 350 persons—delighted Carroll, who believed
that big jobs are best performed by small work forces.

Awaiting the Commissioners on their return to Washington on 21
November was the task of choosing a general manager. Under the
McMahon Bill, the holder of this position, like the Commissioners,
was to be appointed by the President with the advice and consent of
the Senate. Lilienthal, however, had been assured that Truman would
name whomever the five atoms suggested.3

Carroll, Marks and Volpe, having consulted with fourteen
knowledgeable individuals in and out of government, began the
selection process by presenting the Commissioners with thirty-three
possibilities. A four-man advisory panel, set up by the
Commissioners, reduced the roster to eight. The first man to be
offered the job, H. Rowan Gaither, Jr., assistant director of the
wartime Radiation Laboratory at MIT, declined. So did the next
individuals approached: James R. Killian, Jr., vice president (and
later president) of MIT, and Edwin R. Gilleland, a chemical engineer
at the Institute.4 With the list shortened to five, one of the
members of the advisory panel, the eminent Washington attorney
John Lord O'Brian, did a little thinking out loud.

"The general manager of the Atomic Energy Commission," he told
his fellow panelists, "should, preferably, be a young man. He must
be healthy and vigorous, and a tremendous worker. He must be a top
administrator. He must know sciences and scientists. He must have
a faculty for getting along with people, be a great human engineer,
and--". A sudden gasp escaped the speaker. "Good Lord!" he concluded. "I'm describing Carroll Wilson."5

There was no argument from O'Brian's listeners. The panelists, to their great relief, had found their man--a classic instance of serendipity, for Carroll's name was on none of the lists. Everyone concerned had assumed that, having come to Washington on an ad hoc assignment, he was eager to return to the National Research Corporation in Boston, a company he himself had helped organize in 1940. Such indeed were Carroll's intentions. During its brief existence NRC had known profit years and loss years, but now it was doing a million dollars worth of business a year and things were looking up. Carroll requested and was given time to think before saying yes to what Jack Beall, writing in the Saturday Evening Post, described as "the most exacting and critical job in the United States, except those held by Harry S. Truman and [soon to become Secretary of State] George C. Marshall." On 30 December the President announced Carroll's appointment and on the first day of the new year, at 12:01 a.m., the Atomic Energy Commission began its official life.6

Reporters covering the new agency demonstrated a nice understanding of the tightwalk on which the Commissioners must balance. On the one hand they were to encourage the extension of nuclear science with peaceful applications in mind--a process depending for its success on the free exchange of information. On the other hand, as inheritors of the military responsibilities of the Manhattan District, they must see to it that the country's atomic secrets remained under wraps.
The Commissioners, in addition to Lilienthal, were Robert F. Bacher of Cornell University, one of the key physicists at Los Alamos during the war years; William W. Waymack, editor of the Register and Tribune in Des Moines, Iowa, a public director of the Federal Reserve Bank of Chicago, and holder of a Pulitzer Prize for editorial writing; Sumner T. Pike, one-time member of the Securities and Exchange Commission; and Lewis L. Strauss, partner in the Wall Street investment firm of Kuhn, Loeb and Company. The principal job of the Commissioners was to formulate policy, that of the general manager to execute it. Associated with the Commission were two consultative bodies: the General Advisory Committee, headed by J. Robert Oppenheimer and consisting for the most part of scientists, and the Military Liaison Committee, consisting of army officers. Overseeing the Commission from Capitol Hill was the Joint Committee on Atomic Energy, ten members from each of the two houses of the Congress. Plainly the new agency was a many-layered organization, and in the opinion of some of the scientists of the day a top-heavy one. So assiduous was the legislative supervision of the civilian caretakers of the country's nuclear arsenal that a common saying among AEC employees was that "the Joint Committee is the commission, the commission is the office staff, and the general manager is the office boy."

By and large, press comment on Truman's selections was favorable, but when on 27 January 1947 the Senate half of the Joint Committee began confirmation hearings in Room 312 of what was then the Senate's only office buildings, first Lilienthal and then CLW found themselves in trouble.
Lilienthal, during his many years as head of the Tennessee Valley Authority, had acquired a virulent enemy in the person of Tennessee's most powerful politician, Senator Kenneth B. McKellar. Regularly, in years past, McKellar had striven to metamorphose TVA into a patronage pool for himself. Just as regularly, Lilienthal had frustrated these raids on his domain. And at 78, the Democratic warhorse from Tennessee had neither forgotten nor forgiven. He was not a member of the Joint Committee, but at the opening meeting of the confirmation hearings and at most of those that followed he could be seen on the dais, under the big gilt mirror at the back of the room, sitting next to the chairman Republican Senator Bourke B. Hickenlooper of Iowa--, and closely following the proceedings from behind an interminable scowl.

As a member of the Senate since 1917, as its president pro-tempore for a recent two-year period, the old man constituted a force that neither Hickenlooper nor any other member of the committee dared to ignore. Repeatedly, McKellar adverted to ancient charges, long since examined by another Congressional committee and declared groundless, that the chairman-designate of the AEC, though he styled himself a political independent, was in reality a communist-in-New Dealer's-clothing. The aging Tennessean's remarks were frequent, barbed--and unavailing. Well before the conclusion of the long hearings, the scuttlebutt on the hill and the word in the press was that David Lilienthal would survive the inquisitions."

Carroll's turn came in late January and early February. During both his own testimony and that of those who spoke for him, two matters surfaced with considerable regularity--two doubts in the minds of some of the investigating senators.
One was his age. At 37 was he seasoned enough for the job to which he had been named? John Lord O'Brien addressed himself to that one. O'Brien quoted one of the Commissioners as saying that, given the novel and intricate technical problems confronting the AEC, the question was not whether Carroll was too young but whether his bosses, the Commissioners, were young enough.  

The other matter was the nature and extent of his experience in private industry. Had CLW ever met a payroll? It was Democratic Senator Edwin C. Johnson of Colorado who put that inevitable query. Carroll's reply was that as financial director at National Research Corporation for eight months, he had handled "perhaps 300 employees." Johnson and Republican Senator Arthur H. Vandenburg of Michigan are known to have considered those figures unimpressive when compared with the 43,700 employees at the AEC.

All of Carroll's mentors came to his defense. Bush went out of his way to read into the record the letter he had written CLW at the time of his departure from OSRD. "As a fine executive officer should," it read in part, "you managed your Director in his diverse relationships, and kept him from 'putting his foot in it' innumerable times. By your clear and constructive thinking you aided to mold the whole organization and all of its relations." Said Chairman Hickenlooper, "Personally, I feel that very few men would merit that kind of a compliment from you." Said Bush, "Very few men got that kind of a compliment."

Conant cited Carroll's refusal of a $75,000-a-year job that in time would have made him president of one of the country's better known corporations. Compton mentioned Carroll's refusal of another
corporate berth at $40,000. Johnson of Colorado regarded these revelations as open to more than one interpretation. Was it possible, he asked Compton, that CLW was "afraid" to take on an executive position in private industry? The soft-spoken MIT president was not about to dip into waters of an unknown depth. He had no idea as to what had gone on in Carroll Wilson’s mind. He suggested that Johnson put his question to Carroll himself. When Compton noted that CLW had contributed substantially to a recent reorganization of the United States Weather Bureau, Senator McKellar, previously relatively moribund, suddenly came alive. His statements, delivered from the dais, were in the manner of a man saying "Aha!" He asserted that during the last six months the forecasts emanating from the rejuvenated Weather Bureau had been correct on no more than two occasions at most!13

Testifying on 7 February, Compton said that how much experience CLW had had in meeting payrolls was irrelevant to the question of whether he was fit for the post to which the President had named him. It was the MIT head’s understanding that the AEC would conduct the bulk of its work through contracts negotiated with a variety of American industries. It followed that "the job of General Manager would not be so much the actual running of a big operation like General Electric Company or Monsanto [Chemical Company], but would be the job of seeing to it that the contracts and the relationships between contractor and the Atomic Energy Commission for carrying out the purposes of the Commission are properly set up." Compton then reminded the Senators that this was precisely the kind of work Carroll had done during his years at Vannevar Bush's right-hand man at the Office of Scientific Research and Development.14
The day following Compton's appearance before the committee found The New York Times, in an editorial, calling it "essential that the [AEC's] first important organizational step in selecting Mr. Wilson for a crucial job be amply sustained. The Commissioners, the newspaper pointed out, had "combed Mr. Wilson out of a welter of candidates and came near dancing in the streets when they secured him....Mr. Wilson...is modest in his ways. He cannot pound the table as Senator McKellar can. Thus he is not the conventional picture of a big executive. But the conventional picture is, as often as not, wrong...""

On 10 March the Senate committee recommended the confirmation of the five Commissioners and Carroll. For Lilienthal the vote was 8 to 1 with Republican John W. Bricker of Ohio, whose views were not unlike those of Senator McKellar, casting the single nay. For CLW the vote was 6 to 2 with one member of the Committee abstaining and Bricker and Johnson of Colorado opposed. Bricker's explanation was that he considered Wilson "the alter ego of Mr. Lilienthal."

Notwithstanding McKellar's announced determination "to put on the 'damndest fight the Senate ever saw'," that body promptly endorsed the Committee's findings and the five atoms and their office boy were free to go on with their busy schedule."

Busy it was. "Nobody except the few who struggled through the formative time" of AEC, Commissioner William Waymack told Carroll, "will ever understand what it was like. Not even as to the sixteen hours of work a day, seven days a week--or was it twenty." Well organized though Carroll was and of a singularly unflappable temperament, he could have filled the twenty. David Lilienthal's
description of the original Commissioners as "the quintuplets in a quandary" reflects his realization that the AEC was called upon to plough new ground—and Carroll Wilson's section of that ground was extensive.

He was charged, among many other things, with seeing to it that nobody worked for the AEC whose security clearance was not in order—a frazzling chore in a Washington churning with the Cold War fears and suspicions that culminated a few years later in what has come to be known as the "McCarthy era." Whenever anything the least untoward occurred in the security department, it was up the Hill for Carroll—and sometimes for Lilienthal as well—to explain matters to the Joint Committee. It was up the Hill for both of them on 18 May 1949, following the disappearance from one of the AEC laboratories of 287 grains of uranium. It was down the hill for two highly relieved men on 27 May when it came out that the uranium had been inadvertently dumped into a disposal can by a laboratory worker "too skeered to 'fess up to it.'"19

One of his more demanding tasks was to supervise the men in charge of AEC's network of laboratories, production plants and testing ranges in sixteen states. Lilienthal insisted that the Commissioners confine themselves to making policy. None was to assume executive responsibility for any of the Commission's functions. In the beginning, consequently, the directors of the AEC's outlying facilities came near to being czars on their home grounds. They were given a free hand in implementing the Commissioners' orders. They were permitted to negotiate on their own contracts involving sums ranging as high as five million
dollars. When in the summer of 1948, mounting criticisms of this arrangement dictated a change, it fell to Wilson to effect a realignment that shifted much of the managerial control from the field offices to Washington headquarters. "Ups and down." So Lilienthal described the work of the AEC in March, 1949. "Wilson," he added, is terribly tired."

In common with all front-line federal officials, Carroll operated in a floodlight of publicity. As part of his reorganization of the Commission, he created a new post at headquarters—that of Deputy Manager. The appointment of engineer Carleton Shugg to this job stirred one of those rumors with which Washingtonians entertain themselves. The story, soon making the rounds, was that Carroll was miffed and ready to resign because his deputy was getting three thousand dollars more a year than he was. In the governmental purlieus of the national capital, fact must huff and puff to catch up with fancy. Months elapsed before The Washington Post revealed that not only had Carroll himself selected Shugg for the post, but that he had recommended that its occupant retain the eighteen-thousand-dollar-a-year salary he had been receiving as director of a large AEC installation on the West Coast.

Reporters covering the Commission noticed that among the non-scientists at AEC headquarters, Carroll seemed to have the most complete grasp of the mysteries of nuclear science. At least one of their readers took note of this fact. "Mr. Carroll Wilson," he wrote, "How is the atomic bomb made...?" Late November, 1947, brought to the General Manager's desk a cheery note from William
Loeb, Editor and publisher of the well-known Union-Leader in Manchester, New Hampshire. Loeb was the possessor of "a 1947 M.G. two-seater car, with which I shock the good citizens of Vermont and New Hampshire by using it in the deep snow." Press accounts of Carroll's fondness for Rolls Royces and Invictas encouraged Loeb to believe that "we may possibly win out in the world atomic race."

The sharp-tongued New Hampshire journalist reasoned that "for a man embarked on your career and with your problems, [an]...interest in those two particular cars would indicate a healthy mental balance."  

H.I. Phillips, a columnist for the Buffalo Courier-Express, described seeing Carroll on a train and wrote that he was unable to keep his eyes off him. Here, Phillips mused, was a young man "who knew how to take a mess of uranium, thorium, plutonium and all those things and...blitz all mankind." And what did he look like, this youthful holder of the keys to Armageddon? Too mild "to trap butterflies," said Phillips. "And that name, Carroll Louis Wilson!" Willy-nilly, the columnist kept thinking of the "first two names as Louis Carroll, but if that were true, how the author of Alice in Wonderland would turn over in his grave today."

In after years Carroll was heard to say that never could he have kept so many irons in the fires at AEC had it not been for the cooperation of men with whom he had struck up friendships that were to endure well into the future. Among these helpful co-workers were Herbert Marks and Joe Volpe. Like Carroll, both these members of the temporary housekeeping coterie had remained with the Commission, Marks as General Counsel and Volpe, who would also hold that
position later on, as a member of the legal staff. Another was Jim Fisk, who'd been one of Carroll's roommates at MIT and whom Carroll persuaded to take over the position of Director of Research. Still another was physicist David Langmuir, one of Carroll's friends from MIT days, whose first job after joining the AEC in 1948 was to serve as secretary of an internal committee set up to coordinate the Commission's multiple programs.25

Like the Commissioners, the General Manager was in demand as a speaker and in the spring of 1949 a request of this sort took Carroll back to Rochester, New York. The invitation, extended over the signature of E.B. (Jack) Hall, an Eastman Kodak official, was to address the Genessee Valley Club in its Georgian colonial mansion on fashionable East Avenue. Well in advance of this return to the scenes of his boyhood, CLW dispatched a biographical sketch and a copy of a speech he had delivered earlier in the year at Amherst, Massachusetts. Thanking Carroll for these items, Jack Hall ventured what he called a "hunch."

"As you may know," he wrote on 6 April, "the older membership of the Valley Club (sic) is composed of what we might call the more solid citizenry of Rochester." As science and "particularly theoretical science" had played little or no part in the lives of these "manufacturers, bankers, and the like," Hall feared that a "talk similar to your Amherst speech might sail considerably over their heads." He was of the opinion that some of them might understand "fishing" ("fission!" wrote CLW's secretary in the margin of Hall's letter) but he had "serious doubts" that the words "isotope" and "transmutation" would mean anything to them. It was
Hall's "hunch," therefore, that instead of discussing the "scientific angles" of his work, CLW should confine himself to its "cloak-and-dagger" aspects—a reference, it would seem, to occasional newspaper stories, quoting this or that well-known American as critical of the longtime exchange of certain kinds of atomic information on the part of the United States and Great Britain. "I thought," wrote Hall, "I would pass along these thoughts and you can use your best judgment." Carroll's best judgment, as conveyed to Hall a week or so later, was that "as substantial stockholders in the enterprise for which I am responsible, the members of the Club are going to have to hear about atomic energy."26

At 4:48 p.m. Thursday 28 April, he arrived at the Rochester airport to be picked up by his father and taken to the home now occupied by Louis Wilson and his second wife at 70 Stoneham Drive in the Ellison Park Heights section of the city. He spent Friday morning observing the work being done for the Atomic Energy Commission at the University of Rochester.27 That afternoon he attended a celebration connected with the twenty-fifth anniversary of Monroe Junior and Senior High School. (One surmises that Carroll, a genius at making arrangements, had so scheduled his trip home that he could take part in the Silver Jubilee for his old school). That evening he told members of the Genesee Valley Club about isotopes, transmutation, and fission. He assured them that the day was near when atomic reactors in private hands would be providing electricity for America's homes and factories. With his customary and, in this instance, stunningly inaccurate optimism, he
predicted that in a short while chemistry would solve the awful problem of what to do with dangerous nuclear waste.²⁸

Though for Carroll it was an enjoyable evening, it was essentially just one more appearance among many. For his father, out in the audience, it was another thing altogether. It was a moment to be cherished for the rest of his days. Years before, Louis Wilson had joined a local country club, but only after concluding that the "solid citizenry" of the Genessee Valley Club had no intention of inviting him in. Now he sat in the holy of holies of social Rochester—and the man on the podium was his own son!²⁹

If for Carroll there were pleasant perquisites attached to managing the atom, there were also distressing ones. By the close of 1949, it was apparent to his companions at the AEC that he and one of the Commissioners, Lewis Strauss, were not getting along.

David Langmuir remembers the reaction of one of his uncles, a Wall Street investment counsel, when Truman announced the names of the first five Commissioners. "My uncle," Langmuir recalls, "thought it remarkable that in a group as small as that there should be a man as capable and driving as Lewis Strauss." In his fiftieth year at the time of his appointment to the AEC, Strauss was regarded in many circles as a man of parts: brilliant, able, Biblical in his devotion to his Jewish faith, charming when he chose to be, a skillful raconteur, humorous, generous—and tragically flawed.³⁰

Growing up in Richmond, Virginia, Lewis Strauss dreamed of becoming a scientist—an ambition fired by a statement in a high school textbook that "the most vitally interesting" question
confronting mankind was one raised by the known existence within the atom of incredible amounts of power. "Is it possible," the textbook authors asked, "for man to gain control of this tremendous store of subatomic energy and use it for his own ends?" Strauss was planning to study physics at the University of Virginia when, at the time of his graduation from high school, financial reverses within the family made it necessary for him to go on the road as a shoe salesman.

Within a few years, he had saved twenty thousand dollars and had wangled a job as private secretary to Herbert Hoover, then overseeing the distribution of food and other forms of relief in war-torn Europe. The eclat with which he performed his duties under Hoover attracted the attention of important individuals in the American financial community. In 1919 Strauss became an associate in Kuhn, Loeb and Company, in 1928 a partner in that respected investment firm. By the time Truman summoned him to the White House to solicit his services for the newly-created AEC, Lewis Strauss had become a millionaire fifty times over. Inside the AEC he quickly became the "great dissenter," several times refusing to go along with significant policies endorsed by Chairman Lilienthal and the other Commissioners.

Langmuir is under the impression that the temperaments of Strauss and Wilson were such that the simple act of reporting to work at the AEC put them on a collision course—a development aggravated, Langmuir believes, by Lilienthal's insistence on a managerial decentralization that placed the procurement and distribution of uranium ore in the hands of the General Manager and
barred Commissioner Strauss from direct participation in those vital operations. Strauss was a powerhouse, Carroll was no pussy cat, and clashes between them rapidly materialized.

One clash occurred during a meeting of the Commissioners. At an earlier executive session from which Carroll was excluded, Strauss had complained that the General Manager had neglected to act on reports that a worker at one of the AEC laboratories was a poor security risk. Learning of this charge at a regular meeting of the Commissioners, Carroll asserted that Strauss was mistaken. In fact, he had long since instigated an investigation into the alleged security risk. Being called a liar in the presence of his fellow Commissioners did not set well with Strauss, who considered himself a man of unbending integrity.31

On another occasion, Strauss took Carroll aside for a bizarre conversation. Carroll's son Paul quotes Strauss as reminding his father that he was a family man with a wife and four children to support. The Commissioner went on to say that if the General Manager would take his orders from Strauss instead of from the Commissioners as a whole, things could be so arranged that Carroll would never again have to worry about financial matters. CLW interpreted these remarks as an attempted bribe, said as much, and terminated the exchange.

"Paul's recollection of that incident is correct," says Joe Volpe. According to Volpe, Strauss tried to influence other AEC officials in the same manner. When a report prepared by Volpe for the Commission displeased Strauss, he said that if the young attorney would make some changes in it, the two of them could do
"great things" together. "You can be my lawyer," he said to Volpe. Strauss was sitting on the Board of Trustees of the Institute of Advanced Study in Princeton, New Jersey, when in 1949 physicist Henry D. Smyth replaced Bacher as the Commission's scientific member. When Smyth refused to follow Strauss' lead on a crucial issue, the latter urged him to change course, intimating that were he to do so, Strauss would see to it that the directorship of the Institute at Princeton fell into Smyth's hands.

Carroll, educated by his confrontations with the great dissenter, concluded that Strauss was "one of those men who cannot bear to hear it said that he has made a mistake about anything, no matter how trifling." Years later, seeking to counter a growing barrage of criticism, Strauss described himself as "a plain man who has only tried to do his best for his country." That Strauss did good things for his country is a matter of record. But, as the New York Times observed, he was "not a plain man." He was complex, his "air of seeming infallibility" stemming from "a feeling of inferiority in a man who never went to college and...has had to endure anti-Semitic prejudice." His reaction to even the smallest sign of disapproval was tropistic. Automatically his enemy became America's enemy also, a communist at the very least, perhaps even a traitor. When in 1959 the Senate refused to confirm him as Eisenhower's Secretary of Commerce, he withdrew to his farm in Brandy Station, Virginia, to pass the remaining years of his life raising Angus cattle and penning his memoirs, patently unaware of the degree to which defects in his own character had contributed to the downfall of a valuable public servant.
The eighteen-month period beginning in late December 1948 witnessed a series of resignations from the AEC. By the end of 1949 Commissioners Waymack and Bacher had gone, to be replaced by Gordon E. Dean, a lawyer with experience in government circles, and Smyth. In 1950 first Lilienthal and then Strauss stepped down, to be replaced as Commissioners by Thomas E. Murray, a New York industrialist, and T. Keith Glennan, president of the Case Institute of Technology. Lilienthal, listing the reasons for his resignation in his journal, described himself as ready to give up "eating the racy, fiery fruit of management and turmoil" after nineteen years as the administrator of two of the federal government's largest enterprises. One of his suggestions, during his last-minute talks with Truman, was that the President consider naming CLW to the Commission. Although the General Manager "was seldom heard of," Lilienthal argued, he had made valuable contributions to the work of the agency. "What's his name?" the President asked, seizing a pad and pen, only to add, "Oh yes, I know him" when Lilienthal repeated the name. It was Lilienthal's conviction, he told the President, that CLW would make an excellent Chairman.

What makes these kinds of words about CLW interesting is that the first AEC Chairman is known to have been "disappointed" in the way Carroll handled the members of the Joint Committee in Congress. Carroll's friend and public relations advisor Osgood (Jim) Nichols, who provides this information, quotes Lilienthal as describing Carroll as a political naif. He was stiff and formal in his relations with the politicos on the Hill. He operated on the assumption that everyone was as rational as himself, and as Napoleon
remarked, in politics an absurdity can be an asset.

Perhaps Truman sensed Carroll's limitations in this respect. At any rate, he had his own plans for the AEC. On 11 July 1950, he elevated Commissioner Gordon Dean to the chairmanship—an action that Carroll regarded as dictated not by the demands of the position, but by political considerations. Following a recent shift in the party makeup of the Senate, Brien McMahon had become Chairman of the Joint Committee for the second time—and in years past Dean had been the Connecticut Senator's law partner.

By the close of July, Carroll had resolved to resign and had discussed his reasons for doing so with Lilienthal, Bush and others. It was CLW's belief, based on Dean's conduct on the Commission to date, that under his leadership the AEC would become so centralized that the Commissioners would be the managers de facto, thus stripping the General Manager of the authority he would need to execute the Commission's policies. As for Carroll's announced determination to make public his reasons for quitting—on that his advisors were of different minds. His Deputy, Carleton Shagg, urged him not to resign and, if he did, not to make known his reasons. Lilienthal, although not averse to CLW's stating his reasons, suggested that in his letter of resignation he say "as many nice things about the President as he could," lest the political foes of the President use the letter against him.

On the morning of 4 August, Carroll submitted to the Commissioners a memo detailing his reasons for leaving. "I regret," he wrote, "that I do not have the degree of confidence in the Chairman (Dean)... which I believe it is essential that I should have..."
in order to serve effectively in administering the atomic energy
program...."39 That afternoon, he carried his letter of
resignation to the White House. During his talk with the President,
he made no secret of why he was leaving. Truman expressed regret
but thanked him for his "candor." A few days later, the AEC
released to the press both Carroll's letter and his memo, and there
was a flutter of news commentary; front-page articles in the New
York Times and the Washington Post and a scattering of
editorials.40

Gordon Dean voiced no resentment of Carroll's criticisms.
Instead, he made public a statement extolling Wilson as an
"indefatiguable worker (who)...subordinated his personal interest to
the general advancement of the national energy program."41 The
day was near when Dean and Wilson, working together on a nuclear
weapons study for the Council on Foreign Relations, would come to
know each other better—and Wilson would be heard to say that he had
misjudged the other man, that Dean had done a fine job during his
three years as Chairman of the AEC.42

Carroll's method of resigning from the Commission gives pause.
It represents a break in the pattern of the man as we know it from
the memories of those around him and from the tone and contents of
his correspondence.

Carroll, as the New York Times said, was not given to pounding
tables or to instigating public outcries. His letters, taken as a
whole, exude an almost narcotic blandness: no soul-searching, no
confessions, no "cris de coeur." Seldom in his amplitudinous
correspondence do we find him criticizing anyone or complaining
about anything—even at times when we know that he was under stress. His daughter, Diana, summarizing differences with her father, writes that "he was into data and I was into feeling." Indeed, his letters swarm with data; his grasp of the many and intricate technical facets of the issues that concerned him is astounding. Is the term "photographic memory" a figure of speech or does it refer to a reality? If to the latter, Carroll can be described as possessing that kind of memory. But his writings were those of a man determined to keep feeling in its place—"deep inside," like his thoughts on the mysteries of religious belief. On occasion he would talk to Oscar and Zelia Ruebhausen about whatever troubles the Wilson offspring were getting into. What struck Mrs. Ruebhausen about these recitals was the "matter of fact" manner in which Carroll delivered them—like a corporation official making a routine report to his Board of Directors.

Carroll disliked confrontation and avoided it whenever possible. When circumstances forced him to fight, he fought, albeit with a minimum of racket. Still, no man can be exactly himself day after day, and in that summer of 1950 when he resigned from the AEC with a splatter and a bang, he was for a time at least a different Carroll Wilson. In the years ahead, he would deviate from the pattern again—but not often.
Chapter 6
PRIVATE ORDEAL

For Carroll, after his stint with the Atomic Energy Commission, it was back to private industry for nine years, a period marked by a working association with two manufacturing firms, another tussle with his nemesis Lewis Strauss, and months of corporation infighting: a period characterized by members of his family as "the unhappiest of his life." It was the one stretch of his otherwise sternly organized career--so Oscar Ruebhausen asserted--when CLW can be described as "drifting."

In November 1950, the Wilsons disposed of the farm where they had been living near Washington and returned to New England, this time to the Cannondale section of Wilton, Connecticut. For several months, Carroll worked as a consultant, devoting much of his time to the preparation of a personnel management study for Metals and Controls Corporation, a manufacturer of thermostatic controls, electrical equipment and nonferrous metal products, with a large plant--2000 employees--in Attleboro, Massachusetts, and branches in Mexico and Holland. Then, in 1951, he accepted the positions of Director of Industrial Development and President of a subsidiary at Climax Molybdenum, a company engaged in the mining and processing of uranium and vanadium ores. On the whole, his four years at "Climax Moly" were pleasant, thanks to the congenial relationship between himself and Arthur H. Bunker, the company president. When in July 1954 he became President and General Manager of Metals and Controls, the Wilsons moved again to Seekonk, Massachusetts, a drive of
"twenty minutes or less" from the M & C plant in Attleboro, and Carroll's troubles began. ¹

One of the fastest growing activities at the big factory in Attleboro was the production of reactor cores for use in the nuclear-powered submarines then being developed by the Navy under the aegis of the Atomic Energy Commission. To participate in this phase of M & C's work, Carroll would need access to the uranium ore market in Grand Junction, Colorado, a circumstance that obliged him to seek a reinstatement of his security clearance, which was about to lapse. On 17 June, accordingly, an application for reinstatement went to the Schenectady Office of Operations of the AEC. As Carroll had held security clearance for considerable periods, first at AEC itself and then at Climax Molybdenum, he assumed that his request would be handled in a matter of days. Instead, weeks passed with no word save a message from Schenectady that his application had been forwarded to AEC headquarters in Washington.

On 25 August, Carroll dispatched "S.O.S.'s" to two of his friends in Washington: AEC Commissioner Henry Smyth and Vannevar Bush. "It is now more than two months since this reinstatement was questioned...," he wrote Smyth. "Naturally, I have confined my attention to the (nuclear) project here to those matters which were purely unclassified. The time has now come, however, when I should acquaint myself with what we are doing and see how we may better serve the AEC program....It occurred to me that you might be interested in learning of this situation and may wish to inquire as to the status of this matter and whether it is merely involved in a slow-moving machine or whether it is stalled somewhere." In the
letter to Bush, Carroll was more explicit. It was his conviction, he wrote, that his (CLW's) request for reinstatement had "provided an ideal opportunity for the Chairman to use a 'pocket veto'." There was no need for Carroll to tell Bush who "the Chairman" was. Lewis Strauss had just returned to the Atomic Energy Commission in that capacity.

David Langmuir recalls a tale that was making the rounds of the New York financial community at the time of this incident. Strauss, according to the Wall Street grapevine, was heard to say that he meant to get Carroll Wilson fired if he had to buy Metals and Controls to do so. By 1954, Langmuir had become the AEC's Canadian liaison officer and was living with his family at the nuclear research center in Chalk River, near Ottawa. One morning, shortly after boarding a plane for Washington at the Ottawa airport, he heard himself being paged over the speaker. It was Carroll, asking him to take a later plane as CLW had something to tell him. The Carroll Wilson that Dave located in the lobby was not his usual, imperturbable self. He was visibly agitated. He described his troubles with Strauss and urged Langmuir, on his arrival in Washington, to discuss the matter with Carroll's friends there.

Langmuir no longer remembers "precisely how that business was resolved." but a handwritten "Memo for Commission" in Lewis Strauss' papers indicates that it was largely the work of Henry Smyth, the scientist member of the Commission. "Dr. Smyth at yesterday's meeting (of the Commissioners)," Strauss' memo opens, "raised questions of renewal of... Clearance for Carroll Wilson." The memo fails to give the date of the meeting, but obviously it occurred
shortly after Smyth's receipt of the 25 August 1954 letter from CLW, requesting the scientist's help. "I am writing this memo for the record," wrote Strauss, adding:

(1) I have no question about the loyalty of Wilson and believe him to be a loyal citizen.

(2) I have no question as to the character or association of Mr. Wilson. These constitute the only criteria we are supposed by law to concern ourselves with.

The Commission did notice, however [

(1) that Mr. Wilson without knowledge of the Commission in 1948 when he was Gen. Mgr. wrote to Dr. Cyril (S.) Smith (a British-born metallurgist, who had worked on the atom bomb at Los Alamos during the war) authorizing him to convey data on the Metallurgy of Plutonium to the British. This was in violation of the law...

(2) that Mr. Wilson initially cleared Robt. Davis for continuance on sensitive work at LASL (Los Alamos Scientific Laboratory) after we had been put on notice by the FBI that Davis had been a member of the communist party just prior to his employment by the MED (Manhattan Engineering District) and that Davis had admitted to effective perjury in his employment questionnaire.

(3) that Mr. Wilson had written a letter to the U.K. specifically requesting that Klaus Fuchs (later discovered to be a Soviet spy) & one other (scientist) be a member of a British group to be sent here to a declassification conference in 1947.
(4) that Mr. Wilson without the knowledge of the Commission had issued passes permitting (Donald) McLean [sic], the U.K. Embassy attache who later disappeared into Russia, to enter the AEC headquarters at all hours and without escort.

Perhaps none of these items is censurable and that none of them standing alone is important. The important existancy [sic] of these four instances and perhaps others, which may be on the record of which I am not aware should be known to the Commission before a decision is reached. ³

Whatever the Commissioners knew, the decision was made a few weeks after the drafting of this memo. On Saturday 6 November, Carroll went to New York to be interviewed by an official of the AEC Security Division, and on 19 November he received his reinstatement—four months and two days after it was requested. ⁴

By the time his clearance came through, Carroll had discovered that life at M & C was not going to be easy for a man averse to confrontation. The company he now headed dated back to 1930 when Rathbun Willard and two associates combined two small firms, one of which they themselves had originated, to form Metals and Controls. ⁵ During many of the intervening years, as the only surviving founder, Willard had run the corporation, occasionally serving as both President and Board Chairman. He was occupying these positions when Carroll was brought in, and for a few weeks CLW was carried on the books as Vice President, an arrangement that ended on 15 July when Willard relinquished the presidency to the younger man under an arrangement which permitted the older one to continue as Chairman of the Board.
Carroll himself had been a member of the board for three years when he assumed the presidency, and he and Willard had seen a good deal of each other, once conferring for a day and a half at the older man's home in Attleboro. In the summer of 1954 Willard was in his seventy-second year, and he had let it be known that he was planning to retire in the near future, well aware that the time had come to put the direction of his company in younger hands. 6

Such was Carroll's understanding of his duties when he took over, but within a few months it was plain that Willard, having captained the ship for over twenty years, was not about to remove his hand from the tiller. There followed a struggle for control, characterized, as Carroll observed, by "occasions of crisis" arising from "the ambiguity of a situation in which there were two chief executives—the Chairman of the Board and the President." 7

Nothing Carroll did satisfied the old man. Willard, CLW complained, was long on criticism and short on constructive suggestions. 8 When the new president, sensing an impending economic recession, suggested a retrenchment in certain facets of the business, Willard accused him of wanting "to lay off 20% of the employees without warning" and lacking "the imagination to take risks." 9 When Carroll urged the company to borrow three and a half million dollars to underwrite an expansion of the profitable nuclear fuel business, Willard countered by insisting that the improvements be "financed from retained earnings and depreciation"—and continued to hold this view even after the Board had sanctioned Carroll's proposal. When the members of the nine-man board, alarmed at the recurring "occasions of crisis," decided to meet at more frequent intervals than in the past,
their aging chairman objected vociferously. When the Board voted to enlarge itself and ordered CLW to get in touch with three potential members, Willard rescinded these instructions and Carroll let the matter drop, knowing that individuals coming in under such circumstances would find themselves in an embarrassing position.\textsuperscript{10}

During the opening days of 1958 one of the company directors pointed out that M & C's troubles arose from the failure of the by-laws to define in a clear way the respective powers of the president and chairman. To Rathbun Willard, he suggested that the by-laws be amended so as to make clear that the president was the top boss. Willard responded by informing Carroll that, yes, the by-laws should be changed--but not in the manner suggested. Willard demanded (1) that the by-laws be so altered as to give him (Willard) the final say in the conduct of the company for the rest of his life; (2) that he be provided with a fund ("1.5% of net after taxes") to do with as he wished; and (3) that henceforth his yearly compensation "be not less than \$40,000." He gave CLW forty-eight hours in which "to agree."\textsuperscript{11}

Carroll's replies to these ultimatums were contained in a letter to Willard, sent from Washington not quite a month later. Carroll made no direct reference to Willard's demands. Instead, he reminded the older man:

Only a fortnight ago I reaffirmed to you my sincere desire to try again to find a modus operandi with you which would permit your greater participation in the daily running of the business. I urged that you set aside an hour every morning when we could review together the important items for the day. You gave me no
encouragement to carry it out....

Under the circumstances, I see no choice but for you to lay this whole matter before the board at a meeting at which I would not wish to be present. Only when they decide what they and you want me to do can I decide whether the job is one (in which) I believe I can...discharge the responsibilities expected of a president and general manager. I repeat that without a high degree of confidence no arrangement in words can make the relationship workable.

Whatever may lie ahead of us, of one thing I am certain. My respect and affection for you as a fine human being will not be diminished.¹²

This letter was dated 29 January, and a few days later the two men met to discuss its contents at the M & C offices in Attleboro. Again Willard voiced his ultimatums, telling Carroll that this was his last chance "to agree" to them. Frustrating to CLW and his supporters were the old man's frequent shifts of sentiment. Early in the year, Willard was circulating a letter to the employees, saying that whenever "advancing age makes necessary a change in leadership and when the ones approaching retirement don't step out completely----[it] can be a trying time both for the new and the old teams. In this connection I want to tell you that my new colleagues have been very patient where I have been impatient, and that they have not failed to show me consideration and kindness." A few weeks later, during a talk to the assembled employees, he was describing one of his "new colleagues"--Carroll--as a man who thought "of people only as things
to be bought and sold. He is the most egotistical man I've met. He spends hours trying to figure out ways to get his name in the papers." It is unlikely, however, that Carroll cared much for the publicity generated by what the newspapers interchangeably described as the "management fight" or the "middle management revolt" at Metals and Controls.  

One of the big changes there in 1958 was a decision by the Board to put the company's booming reactor-core production under a wholly-owned subsidiary to be known as Metals and Controls Nuclear, Inc. As president of this entity, an officer of the corporation, Jerome Ottmar, was selected. Ottmar had been with M & C since 1938. Repeatedly in the weeks following his appointment, he refused to follow Carroll's orders, and when the directors took under advisement a motion to dismiss him on charges of insubordination, the "occasions of crisis" began rocking rapidly to a climax.

Carroll's strength lay with the directors, of whom the majority--Vannevar Bush among them--consistently endorsed his policies. Willard's backing came from the employees, who for the most part regarded him, in Carroll's words, as "a fine human being:" genial, outgoing, generous, and a conspicuous contributor to the social and economic welfare of Attleboro.

On 6 February, Ottmar, having been warned by a member of the Board that his job was "in peril," spent the day in nearby Providence, Rhode Island, at the offices of the brokerage firm of Brown, Lisle and Marshall and the Rhode Island Hospital Trust Company. Both organizations had a financial interest in M & C and Ottmar's proposal was that their executives use their influence to see to it that Carroll Wilison was fired--a suggestion that the businessmen in Providence ignored.
The same day that saw Ottmar touring the city of Providence saw the "sudden appearance" at Metals and Controls of a batch of petitions signed by the company engineers and sales executives. These documents charged Carroll with a "malicious plot" to oust Rathbun Willard, and requested that the Board jettison Wilson instead. Evidently there was a firmer basis for this protest than Carroll and his adherents ever saw fit to reveal. Present in CLW's papers is a nice example of wishful thinking: the draft of a "Notice," dated three days before the circulation of the petitions and opening with the statement that "The Board of Directors of Metals and Controls Corporation announced today the resignation of Mr. Rathbun Willard, Chairman and founder of the company." Accompanying the notice was a press release. "In recent weeks," it read in part, "Mr. Willard has been using increasingly desperate and irresponsible methods to undermine Mr. Wilson's authority.... At a meeting of the Board today, attended by all 9 members, we requested his resignation. Only Mr. Willard and one other member voted against this resolution. When Mr. Willard refused to resign as Chairman, the Board had no alternative but to relieve him of his office. (Signed) By Order of the Board of Directors, Vannevar Bush, Chairman." Prepared for consideration at an upcoming meeting of the Directors, according to a marginal note in CLW's handwriting, this release was never used.

The petitions sent through the offices and plants of M & C spurred what Willard described as a "wave of emotion." When, at the monthly session of the Board on 7 February, he brought the petitions into the room, the directors promptly ordered them removed from the premises. Six days later, Willard summoned the employees, from foremen up, to a meeting to hear his version of what was going on.
It was a moment of high drama—"melodrama," said Jim Nichols, who as Carroll's public relations advisor was keeping a studious eye on developments. The setting was the cafeteria, a spacious apartment containing a fountain holding the statue of an angel wearing a demure expression. Willard had the petitions in his hand as he began talking. He assured his listeners that no one was trying to get rid of him. Indeed, the very contrary was the case. He himself had offered to step down, but Carroll and the other members of the "new management" had prevailed upon him to stay for the good of the company. How were he and their young president getting along? "We all have different ways of doing things," said Willard, "but CLW defers to me because I'm older.... if there are problems about what's the right thing to do, he asks me what I think." As for the petitions that Willard was holding in his hands, they were "entirely incorrect—not true at all. They are not representative of what's been attempted." And in confirmation of this pronouncement, the old man whipped out a match and set the offending documents afire.21

He thus proclaimed a truce, only to break it a short time later when at the opening of the 7 March meeting of the Board he served notice that he intended to make some remarks about the president of the company. Before letting him do so, the directors voted to shift the proceedings to neutral ground, a local hotel. When they reassembled, Jerome Ottmar was on hand. Willard had invited the disgruntled president of M & C Nuclear "to testify against" CLW. The directors refused to listen to him and Willard told Ottmar to wait in the hall. It was a long wait. For two hours, the chairman directed a string of criticisms at Carroll. Then, in an about-face that
astounded everyone present, including probably Willard himself, the old man moved that the by-laws be amended so as to make clear that Wilson was the "Chief Executive Officer" of the corporation—a proposition that was immediately voted in the form of a resolution, calling for the submission of the proposed changes to the company stockholders in the near future.22

This way, that way, like a cat's tail, went the dispute from this point on. On 17 March, Willard took off for Europe. On the twenty-first, the stockholders, in a special session, approved the changes in the by-laws, simultaneously advising Carroll to refrain from taking command until after their upcoming annual meeting. On the twenty-fourth, the directors formally amended the by-laws with Willard, cabling from Europe, agreeing to their action.

When, during their annual meeting in April, the stockholders re-elected Carroll to the presidency and discharged Jerome Ottmar, a member of the old guard called Willard in Europe—and the chairman, conquering a long-held aversion to travel by airplane, flew back to the United States.23 Eleven days later, he informed CLW that he regarded the changes in the by-laws as "invalid" and that he had no intention of surrendering his position as top boss. By this time Carroll should have been inured to the old man's changes of mind—but apparently he wasn't. Shocked at these remarks, he insisted that Willard repeat them slowly enough for CLW to write them down.24

Twice, during the ensuing month of August, Willard phoned Lewis Strauss in Washington, having learned that the AEC Chairman was unfriendly to Carroll and "didn't think too highly of him." Willard began his first call by identifying himself and his company. He then
asked if Strauss were aware that "about 2 years ago we took on Mr. Carroll Wilson and made him President" of Metals and Controls. Strauss said he'd "heard of this," whereupon Willard informed him that under CLW the situation at M & C had become "more and more confused."

Indeed, he now regretted taking Wilson "on against the advice of some important people--Mr. Lilienthal for one." Strauss expressed surprise at this statement, pointing out that "it was Lilienthal who originally brought (Wilson)... into the AEC." Willard stuck to his story. "I don't think Mr. Lilienthal favored him for the position we had here," he said. Then, revealing that Carroll had won the allegiance of a large M & C stockholder, he expressed the hope that Strauss "would be willing to talk" to the stockholder "or perhaps someone else I might send to see you. I am 76," Willard added, "or I should not hesitate to go to Washington for that privilege."

Strauss' response to this request was to say that "a few years ago when I was back in private life, I would have gladly broken a lance in this thing." Now, as AEC Chairman, he regarded himself as a representative of the President of the United States and could not intervene in an intra-company quarrel lest he embarrass the man in the White House.

When nine days later Willard called again, Strauss told him that he was leaving shortly for Geneva, but that on his return he would convey to Willard a possible "solution" to the troubles at M & C. Meanwhile, "Good luck and bless you," he said. "I feel that what has happened to you in this situation is just a sort of black mark on morals. I think this man (CLW) has behaved very badly and I am confident you will succeed in one way or another." To which Willard replied, "I wish I could reach through the telephone and shake hands with you."
Apparently Strauss' "solution" was never conveyed, for by the
time of these phone talks the members of the "new management" at M & C
had initiated the action that would bring the long quarrel to an end.
Acting on a suggestion from Harry B. Freeman, President of the Rhode
Island Hospital Trust Company, the M & C Board employed a management
consulting firm in Chicago to appraise the situation. Reporting at
the end of July 1958, the Chicago consultants described the split in
authority at M & C as too deep to be healed under present
circumstances, and recommended that Metals and Controls seek a new
owner. On 6 March 1959, a notice went to the shareholders, calling
them together to consider an offer from Texas Instruments, Inc. of
Dallas to take over the firm. On 9 April, the merger was consummated
under an arrangement providing for an exchange of stock
certificates—and CLW, having resigned on the first of the month, was
free to do other things.26
Chapter 7

THE "PARTING OF THE CURTAINS"

AND THE FELLOWS IN AFRICA AND COLUMBIA

But what other things? At 49, his age when he left Metals and Controls, Carroll Wilson was aware that he had reached a turning point in his career. For this we have the word of two of his associates at MIT: Howard W. Johnson, a former president of the Institute, and Elting E. Morison, for several years a professor of humanities there, editor of the Theodore Roosevelt Papers, biographer of Henry L. Stimson, and author of other historical works. Johnson pictures CLW in the summer and fall of 1959 as a man "parting the curtains on a whole new life for himself." Morison describes him as pulling "back from current operations to consider what he had, in the course of his varied experiences, found out about the world around him and about himself." As for the world around him, Morison writes, Carroll concluded that "it was in great part shaped by the workings of the technological process. Sensibly managed, that process could do much to remove traditional burdens and improve conditions. Because that process was constantly changing its...management was more likely to require ad hoc structures and new agencies than the received institutional forms whether in universities, industry or government. And since the process now permeated the whole fabric of society, its sensible management required not only the energizing motive of private profit but a concern for...the public interest."
Such was the line of Carroll's thought in that, for him, watershed summer and fall. For a time he toyed with the notion of organizing a group to develop "a new universal language" to assist foreign service officers in different lands to communicate with one another. For a time, too, he considered a college presidency, and his determination to eschew that direction may have been influenced by his wife.

To Mary Wilson, the social routines inseparable from the life of a college president's wife were unentrancing. Daughter Rosemary cannot imagine her mother coordinating a formal dinner party. So long as there are gardens to be cultivated and horses to be cared for, Mary Wilson is unlikely to waste time on elaborate meals and table-settings. It is a gauge of her disinterest in such things that when in the early 1970s she and Carroll decided to build a house to their own specifications, they instructed the architect to give them a large eat-in kitchen, an atrium-like living room so fenestrated as to provide a panoramic view of the landscape and sky on both sides—and no dining room.

"Your future job and our future lives present a considerable problem," Mary was writing Carroll in the summer of 1959. "Of course we cannot lightly turn down everything because there are things about it that are not ideal. However as you say both of us would have to make considerable changes to become a typical college president and his wife. It might be possible though to run a non-typical college and maybe the job of college president should be changed. It would seem to me a waste to use presidential talent in raising money and entertaining. I am interested in your thought
about a school of college administration. Maybe hospital administration and even prison administration might have some similarities which could be studied."

Carroll was not idle during this period of brooding, this weighing of possibilities. Since 1951 he had been a member of the Council on Foreign Relations, had worked on three of the Council's larger studies and, in the years to come, would serve on its board of directors. In the spring of 1959, thanks to a grant from the Carnegie Corporation, the Council was arranging to send "a dozen or fifteen of its members" to the swiftly changing continent of Africa where, at the turn of the decade, some thirty states had or were about to attain independence from their European rulers after a century or more of colonialism. Carroll was one of the Council members invited to make this trip, and he was packing his bags and ordering his thoughts for it when a phone call came from Howard Johnson at MIT.

After three years as associate dean of "Sloan," as MIT's School of Management is known today, Johnson had only recently taken over as dean. Casting about for ways of enriching his curriculum, he found himself looking for an addition to the faculty who knew about business at first hand, "someone who not only had been there and had made the decisions," but who also had the capacity for putting his experience into an "intellectual framework" suitable for the classroom. At the time Johnson was pondering this problem, it so happened that he and Elting Morison were occupying adjoining offices at Sloan; and when Johnson described the sort of person he was seeking, Morison said, "I know just the man for you," and mentioned Carroll Wilson.
"I'd heard of him," Johnson recalls today. "I'd met him somewhere, but I didn't know him well. Elting's acquaintanceship went back to Carroll's days in Washington. Well, Elting's a historian and if there's a subject of history he's interested in, it's how innovation develops; and he was much interested in what Carroll did back in the days when he was helping Vannevar Bush. We'd started a war and Bush had found ways to put American science at the service of the country. I don't think Elting knew Carroll well then, but he had watched his career and had a high regard for him. He told me that Carroll not only had the expertise I was seeking, but that the timing was right as Carroll had just completed the sale of his company Metals and Controls to Texas Instruments."

Hence Johnson's call to CLW in early June. "Mr. Wilson," said Johnson, "would you be interested in coming to MIT for a year as a visiting lecturer--to teach what you think is important about management in business?" Carroll's reply was, "Well, that's something I hadn't really thought about." Then he explained that he'd "just agreed to go to Africa for a look-see trip" for the Council on Foreign Relations. He was committed to that enterprise, but while he was traveling he'd consider what Johnson had proposed and let him know on his return.

On 10 June, he left New York for the "look-see" at some of Africa's emerging nations that would plant the seeds of two of CLW's most significant projects--the MIT Fellows in Africa and the MIT Fellows in Columbia programs. In Europe he made two stops, one in London, the other in Brussels. In the British capital he talked with the managing directors of the United Africa Company, garnering
tips on what countries to explore and what to look for in each of them. In Brussels, he conferred with friends at the Union Minière du Haut Katanga, the company in charge of Belgium’s uranium mines in the Congo, seeking the names of people he should see when his wanderings brought him to that section of Africa.5

By the fourteenth, he was in the palm-rimmed Atlantic port city of Accra and beginning, in letters home, to record his impressions of newly independent Ghana and of the unsettling ways of its political strong man, Kwame Nkrumah. "The people are pleasant," he informed Mary, "...they have a natural dignity which I do not associate with the American Negro." He trudged up a "commanding...hill" to examine the University: "a series of colleges a la Oxford," on which Ghana, he was told, had "splurged...12 million." He arrived at a session of the national parliament only to be sent back to his hotel for a tie and jacket before being admitted to the visitors’ gallery. He spent hours on the waterfront, watching with admiration "the lightering of cargo ashore" by dugout canoes and manpower from ships standing "a half mile offshore." He lunched with the Sir Robert Jacksons at their home in Accra. Sir Robert was a well-known British diplomat, then in Ghana as one of Nkrumah’s "closest advisors." His wife was the even more widely known journalist and political commentator Barbara Ward, later Baroness Jackson of Lodsworth and a Dame of the British Empire. Sir Robert assured the visitor that Nkrumah was "one of the great leaders of our time." Carroll would seem to have withheld comment, though his letters show that on this matter his fingers were crossed. Barbara Ward reminded him that they had met in
Washington during her days there as a foreign correspondent for the *Economist* of London, and Carroll, a practiced hand at the soothing deceptions of social intercourse, contrived to hide the fact that he had forgotten the occasion. Miss Ward was voluble on the subject of a rising political star in the United States, a young senator from Massachusetts named John F. Kennedy. In their discussion of the Senator's run for the White House, convent-bred Ward asserted that "it would be a terribly dangerous thing for the U.S. to have a Catholic President--for the reason that it could well become a deeply divisive force in US society and generate another wave of 'know-nothingness' such as we went through with McCarthy." She was not saying that John Kennedy was a Joe McCarthy, but that he was not well enough established nor strong enough to counter these latent forces. 6

Carroll's stay in the capital of Ghana stirred a variety of thoughts. Some had to do with the economy of the city and of Ghana as a whole. "Outwardly," he wrote Mary,

> Accra is as presentable as many American cities of 250,000.... But the modernization is not very deep and very uneven. The physical attributes are here--cars..., fine buildings, good stores.... But the whole economy hangs on cocoa, and the whole population (of Ghana) is only 5 million. There is a need to diversify...but how? Organization and specialization of skills (the essential basis for manufacturing) are...unknown to these people. Also, by and large, they lack business morality...the confidence factor in people behaving honestly which is the foundation for an industrial structure.... Education -- education -- this is the most necessary ingredient needed on every hand. But who can teach business morality?
Some of his thoughts reflected what he saw as a decay of spiritual values as a result of the coming of independence. "Previous religions," he noted, were Pagan (basically ancestor worship), Muslim, and Christian (a few)... (But) to establish national support, the (new) government had to break the power of the chiefs--and with it--respect for the elders and... the Witch Doctors. Many of the govt.'s programs run counter to Moslem ideas--education for girls, abolition of purdah, etc.... The only visible faith is in a materialist sort of idea plus Pan Americanism. These are far closer to Communist dogma than to Western ideas.7

From Ghana, Carroll moved on to other parts of Africa--to Nigeria, Congo (now Zaire), Angola, Rhodesia (now Zimbabwe), Kenya, Uganda, and Sudan. Eight countries "in seven weeks," he wrote Sir Edgar Sengier, Director of the Union Miniere in Brussels, "meant short visits and busy schedules in each" nation where the auspices under which he was traveling, the Council on Foreign Relations, enabled him to "talk unofficially" with leaders in government, business and education. "My main interest," he explained to Sengier, "was in the transformation of former colonies and territories into self-governing entities."8

What kinds of assistance did those new entities need as they struggled to form their governments and direct their economies? On his return home, Carroll jotted down ten ways of helping the emerging nations that he thought American foundations might wish to support. As he himself later observed, none of the ideas on his
list called for "the particular program which emerged at MIT."

That program—the Fellows in Africa—evolved in the fall and winter of 1959-60. It was an outgrowth of the exchange of ideas between CLW and his students, for well before his return from Africa, he had accepted Howard Johnson's invitation to spend a year at MIT as a visiting lecturer.

A plaintive note steals into Howard Johnson's voice as he talks of this development. The understanding when CLW began his work at Sloan was that his lectures would deal with the everyday problems of managing a business. In fact, however, his first course—a seminar called "Government Policy and Business Decisions"—dealt for the most part with the management of countries and especially of newly independent ones. "I didn't know Carroll was going to do that when he came," says Johnson. "He didn't either. He had about fifteen students, and they got excited, enmeshed, embroiled in the problem. How do you create order out of chaos? How do you set goals and then achieve them? Carroll was a great success at teaching those things, but he never really taught what we brought him here to teach."

Again and again, in his seminar, Carroll cited the travails of Africa's new governments to illustrate his points. Badly needed by the emerging nations and by those nations' businesses were persons trained in a variety of fields, such as investment, industrial management, and development. In Africa, for long years past, those skills had been supplied by Europeans. Now the experts from England, Belgium and elsewhere were returning to their homelands, and it would be some years before the new African nations could train enough natives to take their places. Meanwhile there was a
new talent gap to be filled. Presently Carroll was asking his students point blank: if he could find them jobs in Africa—posts, for example, in a ministry of commerce or in an industrial development corporation—would they be willing to cross the ocean and take them on? Thus, little by little, the idea that was to be the FIA, the Fellows in Africa, took shape.

From the beginning, Carroll reasoned that by helping Africa, the young men he was teaching could also help themselves. By joining the higher echelons of an African ministry or corporation, they could begin their careers at a more advanced point than would be the case if they followed the usual procedure of going from graduate school into some low-level position in an American industry or government agency and then working their way up. Very likely that was the aspect of the African project, as it crystallized in his mind, that most appealed to Wilson. "Carroll," Howard Johnson says, "always believed that if a young man were bright enough and energetic enough and properly trained, you could parachute him into a situation and he would make things work. Carroll was a believer in the ability of an individual to deal with almost any situation if he were well prepared."

Carroll's enthusiasm for FIA quickly communicated itself to members of his first seminar and to the members of a similar seminar during the semester that followed. "It got to me fast," says John S. Glass, Director of Investment Relations at Millipore Corporation in Bedford, Massachusetts. Glass was doing graduate work at MIT when he joined the initial seminar. "The thing I remember about Carroll in connection with FIA," he says, "was his conviction about
the worthiness of the enterprise. At that time I was considering some conventional-type job opportunities, and many of my contemporaries were saying it would be foolhardy to go off to Africa at a time when good jobs in the USA were not all that easy to come by. But in the end Carroll's quietly-painted picture of the excitement of it all carried the day."

Carroll's tour of Africa in the summer of 1959 was the start of what he himself called a "parade" of American look-see-ers across the dark continent. Most of them came back better informed as to the emerging nations, but as Zelia Ruebhausen has observed, "Carroll was the one who came back with an idea"--an idea that was to become a fascinating experiment in international assistance; and this at a time when the Peace Corps was not yet a gleam in the eyes of President Kennedy and his brother-in-law, Sargent Shriver. "That was Carroll," Howard Johnson has remarked. "He knew how to establish an intellectual beachhead--and how to expand it."

Expand it, he did, and rapidly. January 1960 found him preparing for a trip to New York to seek funds for the African project from the Ford Foundation. He made his preparations with customary thoroughness. Under his direction, members of his first-semester class drafted a tentative prospectus and Carroll discussed its provisions with the members of his second-semester group. He discussed them, also, with a variety of African, British and American political leaders and officials. He gave much thought to how best to present his concept to the Foundation officials. His decision was to stress the benefits of the project to the emerging nations with only a passing reference to what it might contribute to
the careers of the graduate students who had signified an interest in taking whatever jobs he could find for them in Africa. The nineteenth of February found him in New York, proposal in hand and arguments marshalled.

Many times in the years ahead, Carroll would make this trip from Boston to New York for similar purposes; and one detects behind his fund-raising techniques some well considered precepts. When one is begging money from those who have it, one should do so in a manner that is at once grand and leisurely. As David Dodson Gray has remarked, "Carroll was always easy on Carroll." It was not his practice to take the shuttle to New York on the day of an appointment and then race to where he had to go. He flew down the night before, put up at the Ruebhausens' or at a first-class hotel, near enough to where he was headed to walk there comfortably after a good breakfast on the following morning. That way he arrived at the appointment, rested and with his wits about him.

At the Ford Foundation he talked with President Henry T. Heald and other officials. He requested at least enough money to place eight men in jobs overseas for a period of two years—with a prospect of further grants covering a larger number of men if things worked out for the first eight. "I (have)...some damn good candidates," he later quoted himself as telling the Ford officials, adding that he also had a deadline to meet—15 April. That was the date on which his candidates must act on whatever other job offers came their way during the academic year. "Therefore," Carroll explained to the Ford people, "if the program (is)...to get going, I (have)...to (a) get money to visit Africa to find the jobs...and (b) come back and match the candidates to the jobs so that everyone (has)...a clear job offer (from Africa) by the 15th of April."
Those statements were "honest," Carroll said of them in after years—and "useful." Within "a week and a half," the Foundation had agreed to underwrite his job-hunting trip and to finance two-year tours for the first eight fellows if CLW could locate proper positions for them in Africa. Because of the speed with which the $225,000 proposal was processed, the funding of FIA would come to be known at the Ford Foundation as a "classic" grant.

Early March 1960 found CLW stopping briefly in London, en route to Africa. In the British capital he conferred with several persons, including Sir Ernest Vasey, economic advisor to Julius Nyerere, scheduled to take over a few months hence as the first president of newly independent Tanganyika (now Tanzania). Both Vasey, who was to become Nyerere's Minister of Finance, and Nyerere himself had heard of Carroll's project. Both approved of it, encouraging Wilson to believe that once on African soil he would have no difficulty in lining up jobs for his eight candidates—or, as he himself characterized these efforts in his reports to Johnson at MIT, in "making sales." But in Nairobi, Kenya, his first stop in Africa, he found the going rough. The word from government and business leaders was that "they had plenty of people to do what needed to be done." A talk by phone with James Simpson in Kampala, Uganda, general manager of that country's development corporation, was only slightly more encouraging, although for the time being Simpson had no positions to offer. When on 22 March Carroll headed for the capital of Tanganyika, Dar es Salaam, he was counting heavily on breaking the ice by making some "sales" in that area.
Among the first persons he talked with in Dar were a couple of ministers from Tanganyika's pre-independence days; and from one of them, George Kahama, he learned that Shakespeare wasn't just striking off another nicely-metered line when he inquired, "What's in a name?" At this time Carroll was referring to his student job-seekers as potential "interns." That word put Kahama's head to shaking. "We don't have time to train interns here," he said; "we have too much to do. So this is not for us!" At that moment, as Carroll wrote in one of his reports to Johnson, his project assumed the name by which we know it today: The MIT Fellows in Africa.

But finding a name for his candidates was one thing, finding positions for them was another; and not until the end of his stay in Dar es Salaam—literally within the last thirty minutes of it—was CLW to make his first sales.

On his final day in the Tanganyikan capital, with his plane scheduled to depart at 1:15 p.m., he learned that Sir Edgar Vasey had shown up in Dar for a meeting of the Council of Ministers-to-be, and promptly got in touch with him. Their plan was to get together at Wilson's hotel when the Council adjourned, but with the hours sliding by, Carroll grew impatient. Finally, having gotten a message regarding his whereabouts to Sir Edgar, he transferred himself and his bags to Sir Edgar's house. He was chatting with Lady Vasey when her husband appeared at fifteen minutes to one. As Carroll had to leave for the airport at one, he had to negotiate fast. What he hoped was that Sir Edgar could see his way to using some of the fellows in his or in some other branch of the government. As Carroll summarized the conversation later, "I put it up to him and he said, 'yes, I'll take two.'"
From this point on, Wilson's career as a peripatetic employment agency was uphill. That evening, back in Nairobi, he received a phone call from James Simpson of the Uganda Development Agency. The board of that organization had endorsed the FIA—an action portending additional job offers in the near future. Still more positions materialized, most of them in Nigeria and Congo, as Carroll continued his travels.

In Lagos, the Nigerian capital, he encountered what he subsequently described as "a stroke of luck." This development began with a phone call from a young American named J. Daniel Nyhart. A recent graduate of Harvard Law School, Nyhart was exploring the status of entrepreneurship in the emerging nations under a Hattie M. Strong grant from the Institute of International Education, and a friend at the United States Consulate in Lagos had told him what Carroll was doing. Carroll invited him "for tea" at his hotel—a get-together that stretched into drinks and dinner and a long evening of discussion. Nyhart had made a study of the Uganda Development Corporation. He suggested that the fellow selected to work in that organization spend a few days with him in Nigeria before going on to his post in Uganda. Carroll thought well of this offer, and when he and Nyhart parted, it was with the understanding that Nyhart, on his return to the States, would call on Wilson and Johnson at MIT.¹³

By 12 April, when Carroll returned to the United States, he had made more than enough sales, and by mid-May the first eight fellows—destined in the annals of MIT to be fondly remembered as the "original eight"—had been assigned to the positions they would occupy abroad.
One of the first members of Carroll's seminar to sign on was John Glass. As Glass remembers the moment, the class had been talking about the view that an official of another government might take of an American investor. It wasn't especially Africa that we were talking about, but... he (CLW) began giving us case examples of... how (African governments) were organized, and how they might view us as potential investors... (Suddenly) Carroll was saying, "How would you like to see this from the inside out? How would you like to be in a government seeing an American or British businessman coming to invest in that country!"... he repeated the question... then... looked around the room. I didn't really, at that point, know what the hell he had in mind. A few hands shot up, and I sort of looked around and shot up my hand.¹³

Charles Olmstead, the last to join the original eight, was planning to take a job with a small electronics firm when in the early spring he learned that it had been bought by a larger company. That "closed off the opportunity" for Olmstead, "appalled" at the prospect of starting his career in American industry at a "very low level." At that time, one of the original eight had withdrawn, and one day John Glass said to Olmstead, "Why don't you come to Africa with us?" Olmstead replied, "What the hell would I do in Africa?" and Glass replied, "Well, if nothing else, you can talk about it when you get back."¹⁴

By the early fall, FIA had established almost all of the procedures that the program would follow until its termination in 1967. During the intervening period, fifty-one fellows worked in ten of the new nations of Africa and on the island of Mauritius in
the Indian Ocean eastward of Madagascar. The original eight began leaving the United States in August 1960, and during the next six years, every summer saw a new batch of fellows on its way. Two years was the standard tour of duty, but one fellow lingered on the dark continent for three years and eight served for only a year or less. Seventy-nine percent functioned in government ministries, six percent in regional government units, and twelve percent in state- or privately-owned development corporations. All of the original eight were MIT graduates, but in late 1960 the program was opened to other institutions—notably to Harvard Business School and to the law schools at Harvard and Yale—and subsequent migrations included a number of men from these and other universities. All of the fellows received a salary from their African employers, supplemented from Ford Foundation funds so as to render annual incomes equal to those of master's degree graduates from the universities involved. Ford funds also underwrote travel and shipping costs, and at most posts the employing organization provided the fellows with subsidized housing. Sixty percent of the men were married when they went overseas, and a few got married while on the job. Some of the wives obtained teaching posts or other full-time jobs for themselves. One, a virologist, established a tissue-culture division in a pathology laboratory in Tanganyika, inaugurating a diagnostic procedure never used in that country before. Many of the wives contributed in substantial ways to their husbands' labors.

For a year or two much of the day-by-day administration of the program at MIT was handled by Dan Nyhart, who, on his return from Africa in the fall of 1960, joined the staff at Sloan to begin a
ramified career of teaching and research there, first as an assistant to the dean, then as dean for student affairs, and currently as professor of management and ocean engineering. As the other facets of Nyhart's labors became increasingly demanding, much of the administration of FIA shifted to Constantine B. Simonides, then a recent graduate of Harvard Business School, now vice president of MIT.

As for what the fellows did, figures gathered after the completion of the program show that three-fourths of them dealt with some form of economic development and the rest with a multiformity of chores, ranging from the maintenance and improvement of legal systems to the collection and disbursement of government revenues. A glance at a few of the activities of several of the fellows demonstrates the degree to which their duties varied from post to post.

As project development officer in the Ministry of Commerce and Industry in Dar es Salaam, James A. F. Stoner (Antioch College '59, MIT '67) constructed the final negotiations with an Italian oil combine for the construction of a refinery in Tanganyika.

When Carroll F. Brewster, a graduate of Phillips Exeter Academy and Yale Law School, joined the office of the Chief Justice of Sudan in 1962, there were almost no published precedents for Sudanese judges to follow. When Brewster returned home in 1964, he had completed, or was soon to complete, five volumes—1500 pages—covering every important judicial opinion handed down in any Sudanese court during the years 1961 through 1965.
When, upon his arrival in Mogodiscio, Somalia, in 1963, Tom J. Farer (Princeton '67, Harvard Law School '61) discovered that the position CLW had procured for him was lost in the underbrush of the local bureaucracy, he promptly set about inventing jobs for himself. Making the acquaintance of the commandant of the Somali police, he taught criminal procedure and evidence to a class of junior officers, helped re-write the criminal code of the country, and trained a cadre of riot police in self-defense, namely Bando, the Burmese form of karate.

While his Swedish-born wife instructed the women of Mauritius in birth control (and herself gave birth), Robert Norris, a graduate of Grinnell College, University of Stockholm and MIT, worked as one of two investment officers in the government-controlled Development Bank and effected establishment of a vegetable oil mill in an effort to diversify an economy unhealthily dependent on the growing of sugar.

Joining the Bureau de Development Economique of Togo in 1961, Michael Payson, an MIT graduate student, wrote speeches and articles for the president, prepared the documents that put Togo into the World Bank and the International Monetary Fund, and almost single-handedly created a new airline for that small West African nation.

Douglas A. Scott (Princeton '56, Harvard Business School '61) devised the framework of a national livestock industry for Uganda and brought to that country a nutritionist to work with Ugandan children, of whom seventy-five percent suffered from worms, stomach parasites, or malaria.
While the fellows labored as civil servants, investment bankers, judicial historians, law enforcement professors, ghost writers, public health supervisors and agriculturalists, Carroll traveled. Every winter throughout the life of the program, he spent a month on the dark continent, arranging jobs for future fellows and visiting those currently on duty.

Graphic are John Glass' recollections of a couple of Carroll's stops at Kaduna in northern Nigeria, where Glass worked in the Ministry of Economic Planning and "freely enjoyed the social graces of the local people" by way of enhancing his "knowledge of indigenous customs and language."

One of the things "Carroll did as my American boss," Glass recalls, "was to give me a performance review." All of the British, African and American officials to whom Wilson talked gave Glass good marks--with one exception. The American Consul described Glass, a bachelor, as given to "late night sorties" and as perhaps overly attentive to certain segments of the Kadunan populace.

Carroll, says Glass, "let me know that there was at least one person in town who didn't think everything I did was up to standard. What impressed me about this report was the way he conducted it. He was smiling as he spoke, and perfectly nonjudgmental, and I sensed that inwardly he was saying, 'I can see you're having some fun here.' It would be presumptuous in the extreme for me to suggest that Carroll was living vicariously through me. Still, I'm sure he realized that I was a little less inhibited than himself, and I got the feeling that secretly he was rather enjoying my--well, my antics."
Carroll had expressed an interest in seeing some of the native life beyond the borders of "metropolitan Kaduna" (population 10,000), and on his next visit Glass took him out to Riggafriken, having made the necessary arrangements with the Chief of that village. Carroll carried his camera along. "You know, of course," says Glass, "that he rarely left home without it. He took pictures of the Chief and the festivities. These were held on the public square with three chairs set up at one end for the Chief and us. One of the numbers can best be described as a bump-and-grind, done to the beating of drums by a bevy of nubile fillies from the House of the tribe. As the dance progressed, the girls undulated closer and closer to us, eventually becoming literally face to face, or more accurately, belly to face, and I could see that Carroll was getting uneasy. Sure enough, shortly he was out of his chair and taking his pictures from a properly Victorian distance."

The Kaduna of those days had a teachers college, a technical institute, a general hospital, an airfield, a small colony of expatriates, and a limited contingent of unattached ladies. When Glass complained of "a lack of female companionship," his American boss arranged a vacation for him in a part of Europe where, as Carroll put it, the young man could enjoy "a little skiing and other assets."

Every summer for the duration of the program, CLW assembled his men, along with their wives and children, for a two-week conference somewhere in Africa or Europe or Asia. As a rule, Simonides selected the sites for these pow wows, and John McPhee, in his engaging account of the FIA in the 5 March 1966 *New Yorker*, asserted
that if the program itself could be called a "creative use of foundation money," then Simonides' deployment of funds to provide splendid settings for the conferences could be described as "in its way, just as creative." Simonides, McPhee noted, had a fondness for "lofty Xanadus clinging to precipices." For the third gathering in the summer of 1963, he chose a hotel in Athens, "on a cliff edge...four thousand feet above the Attic plain."

Ironically, Greece-born Simonides never got to that conference. He and his wife Betty set out for it, only to learn en route that once Simonides set foot on Greek soil, he would be snatched up by the military, his long-held American citizenship notwithstanding. Constantine sat out the third conference in Brindisi, Italy, while his Massachusetts-born wife went on to Athens.

It was a practice at each of these gatherings for the fellows, their families, and their guests to take a "break" at the midway point for purposes of rest and recreation. At Entebbe in August 1961, the break consisted of a three-day safari to the Princess Elizabeth Game Park in western Uganda. At Athens, it was Betty Simonides, surrogating for her persona non grata husband, who made the arrangements and procured the yacht that carried the sixty members of the conference on a tour of the Greek islands. "For a non-Greek-speaking Yankee," Constantine will tell you, "Betty did a damn good job."

"The language at the conferences," John McPhee recorded, tended "to get heavy enough to walk on." The management types, generally dominant because they were in the majority, offered their thoughts, no matter how ephemeral, "in terms of infra-structures, parameters,
input, feedback, capital output rates, social overhead capital, and macro-economic approaches," while the lawyers, certain that their "armored rhetoric" was as "inspired as Shelley's," curled their lips.²³

All conferences hewed to a format originated at the first one in Entebbe. The fellows and their wives listened to speeches by invited individuals knowledgeable in the ways of Africa or in the relations of that continent with the rest of the world. There were a number of formally scheduled work sessions, at which the conferees discussed problems of mutual interest. At every gathering, the major feature was an exchange of experiences. One by one, the oldtimers, those fellows who had been on the job for a year or more, got up to review their personal backgrounds and describe what they were doing at their posts. Newcomers, men currently on their way to assigned positions, outlined their backgrounds and discussed what they hoped to do when they got to Africa. After the fellows had had their turns, the wives described their roles in the undertaking.

Some provocative comments on the summer conferences can be read in a written survey, completed in 1969 and dealing with both FIA and its counterpart. Entitled "The Structure and Process of Technical Assistance: A Study of Two MIT Programs in Africa and Latin America," this document is the work of a group of MIT-connected researchers headed by Jim Stoner, a former fellow, and reflects a mass of data acquired through interviews with approximately 230 persons connected with one or both programs.

One of the disclosures of the Stoner report is that the prevailing atmosphere at the summer conferences was upbeat to the
point of euphoria. Not every fellow in Africa accomplished great things, and nobody familiar with the recent history of the region could be so reckless as to claim that the presence of fifty-one willing and able young Americans for a short time in the 1960s had any lasting impact, for better or for worse, on that profoundly troubled continent. Tom Farer was not the only man to reach his post and discover that conditions were not what he had been led to expect. More than one fellow found himself working with officials who had no intention of taking any sass from a young hotshot from rich and powerful America. More than one found himself in a situation where, no matter how hard he tried, there was really nothing of consequence for him to do. At least one man had to be removed from his job because his psychological makeup was no proof against a world different from any he had known.24 Discouragement, frustration, even defeat—these were as much a part of the picture as the successes, big and small, that got into the spoken and the written record.

Had they so chosen, some of the attendants at the conferences could have told sad tales—but they did not choose to do so. One of them has said that many fellows were embarrassed when guest speakers hailed them as instruments of change "and stuff like that." This commentator detected what he took to be "a conspiracy to close your eyes to the facts of what the guys were really doing; to make them superhuman. It was carried on in all the publicity, in the New Yorker article (McPhee's), everywhere, and everyone fell for it."25

Another has said of the conferences:
Those were the days of the tall tales.... There was only one story told of the Fellows in Africa Program--great deeds, fabulous responsibilities. It was a real filtered feedback system; one of the best I've seen. Carroll was sitting on top and he received only one perception of a...complicated program. The system was such that people with positive experiences were telling about them and people (with negative ones) weren't telling about them. I believe the experiences were more mixed and that some trivial administrative roles were blown up into great policy roles. There were lots of reasons for this: social (pressures), expectations..., (competitiveness among the fellows)...don't forget the people in the program came from a competitive environment. And Carroll was the principal factor; it was important to him that these people have successful experiences, he really cared. And that's the way it should be; as the leader he could not be a doubter.26

Temperamentally, he could not have been one in any event. Carroll Wilson, Zelia Ruebhausen believes, "was the greatest salesman that ever lived." No matter how any of his projects were faring, it was his wont, in the words of Jim Stoner, "to go about declaring victories all over the place." Carroll was an incorrigible optimist; his tolerance for bad news was low, a quirk of his nature that most of the fellows recognized and that they strove to appease in return for his respect and esteem.

In 1965, the program acquired its South American dimension with the decision to send fellows to Colombia. During the two years of
the experiment in that country, nine men took positions there in a
variety of quasi-governmental and private organizations. Most found
their situation congenial, some even opted to settle permanently
where they were, but the Colombia project failed to elicit anything
like its African predecessor had enjoyed. Indeed, by the early
months of 1965, interest on the part of graduates at MIT and
elsewhere in becoming fellows was noticeably waning, and when
Carroll left for his winter tour, the question uppermost in his mind
was "how much longer should this program be continued?" That
question had arisen at several summer conferences, and on each
occasion the fellows had persuaded CLW to go back to the Ford
Foundation for another year of funding. Now, confronted by evidence
that in most of the emerging nations trained natives were ready to
take over the chores his fellows had been performing, Carroll
returned from his 1965 traverse of Africa convinced that the hour
had struck. After all, he mused later:

there is a time for everything...a time to begin and a time to
stop. Once I had made it, I didn't lose any sleep over the
decision to stop. It didn't cause any anguish, some regret,
yes. I was rather glad, and increasingly so with time, that we
hadn't undertaken an institutional commitment to carry any
country...in Africa over the hump. I had a feeling, which has
become more articulate since then, that the African states were
in for a difficult period in the next 10 to 20 years."

Carroll's ruminations on the future of the dark continent,
voiced in 1969, are interesting in the light of a revelation
provided by his physicist friend Hillard Roderick. It is plain from
Roderick's recollections that Carroll never made clear to the fellows what may have been the major reason for terminating FIA when he did.

For thirteen years, beginning in 1965, Roderick worked in Paris--first as the head of scientific cooperation and later as Director of Environmental Affairs--for OECD (the Organization for Economic Cooperation and Development) maintained in the French capital by the United States and twenty-three other governments to coordinate the economic policies of the capitalist world. As America's delegate and chairman of OECD's Committee for Research Development from 1961 to 1970, Carroll spent some three weeks in Paris every year. He and Roderick saw much of each other; they worked together on a number of international environmental projects, and Roderick remembers one of the things Carroll said to him about his decision to close the books on FIA.

It appeared to CLW at the time of that action that a period of great turmoil lay in the offing for Africa's new nations as political factions in each of them struggled to determine who was to run the show. There were going to be coups and guerilla warfare and shooting—and "I figured," said Carroll, "that the time had arrived for us (FIA) to get out. I didn't relish the idea of seeing some of my fellows getting killed." To be sure, Carroll's statement to Roderick could have been a reconstruction of his thoughts in the light of his subsequent awareness of the political and economic turbulence in many African countries. Still, it rings true; and if it were not his real reason for ending the project, it was certainly a good one. It would be difficult to say to what extent the
The discontinuance of FIA expressed Carroll's perception of African realities and to what extent it reflected his own personal inclinations—his penchant for what John McPhee described as a "restless career." Carroll tended at a certain point to tire of each of his projects—to reason that once it seemed to have done what it was meant to do, the time had arrived to put it behind him and turn his mind to other possibilities. Elting Morison remembers Wilson's quoting with seeming approval the conviction of an uncle that about every five years a man should change his career.26

In July 1965, the FIA people convened for their fifth conference at a luxurious Xanadu overhanging the Bay of Naples in Sorrento, Italy. That was "the best of conferences," Carroll has avowed, "a wonderful group of African guests, a great location, a wonderful time."29 But Simonides remembers the Sorrento gathering as sheathed in gloom by Carroll's announcement of his intention to end the program in 1967. Expressions of dismay arose, even of hostility aimed at Wilson. He and Mary were on record as regarding the fellows as their "extended family,"30 and now in the minds of many of them their family had walked out on them.

Today, it would appear that most former fellows agree with the conclusion of the authors of the Stoner report that Carroll did the right thing at the right time. If his perception of the trends in Africa in 1967 were accurate, the report argues, "continuation would (have)...run the risk of tarnishing the program's image by having men work in less exciting jobs and perhaps acquiring a higher 'casualty rate.' To some extent, the program was ended because there was no place to go but 'down.'"31 Yet for most of the
fellows at the time, the decision to stop ushered in what Jim Stoner
has called a "time of grieving." Something precious had gone out of
their lives, something that henceforth would lie athwart their
remembered backgrounds like a band of light.

These days most of them have nothing to complain of as far as
their subsequent progress is concerned. In the beginning, to be
sure, some fellows found the return to the United States--the
"re-entry," as the management types insist on calling it--somewhat
rocky. "It was terrible coming back," one of them has said.

The country was rude, uncivil, uninterested in people.
Everyone was interested in making money, they were not
interested in giving European and African type service for your
money.... The first two weeks were dismal. I was ready to go
back to Africa. I went from being a big fish in a little pond
to a little fish in a big pond.

Nor were many of the potential employers in this country
impressed by the experience the men of FIA had acquired overseas.
"The general reaction of industry," one fellow noted, "was:
'Well...you've been to Africa, so what?...had a nice trip?...come
join our training program.'"32

But time heals, and the great majority of the onetime fellows
have adapted and thrived. Many now work in large financial and
development institutions, such as the International Monetary Fund
and the World Bank. Many hold responsible positions in industries
and academia. One, Christopher J. Armstrong, sits as an associate
justice on the Appeals Court of the State of Massachusetts.

Even before Armstrong left the United States to serve in the
Office of the Director of Public Prosecutions in Enugu, Nigeria, he had discovered that a tour of duty in Africa might not be an open door to big jobs in his native land. Having applied for a position with an old-line Boston law firm shortly after his graduation from Yale in 1961, Armstrong was delighted when two partners of the firm asked him to lunch with them at a local hotel. He had already gotten in touch with the administrators of the FIA and was considering that possibility as well.

"Tell me, gentlemen," he said to his luncheon companions, "would you consider a year of legal work in one of the new African governments proper preparation for coming into your firm?" The way Armstrong recalls the incident, his elderly hosts first glanced at one another and then concentrated on him. "Frankly," said one of them, "I would be inclined to view an applicant's interest in that sort of adventure as indicating a streak of frivolity in his nature." To which the other partner added, "even perhaps a streak of instability!"

Over the years the former fellows have kept in touch, frequently gathering for reunions, where over drinks and food they catch up on each other's doings and swap stories from the good old--FIA--days. At the last of these confabs to be held before Carroll's death, one of the men rose to address the chair. "Carroll," he said, "now that we've shown that we can make it on our own, for God's sake bring us together again as a family, and take care of us."

Of this plea, John Glass has remarked, "My sentiments exactly." Glass recalls a visit one summer day to CLW's farm in
Seekonk. One of Carroll's first actions was to show off his current automotive pride and joy, a vintage Mercedes. "I'd driven to Seekonk in a new Chevrolet," Glass recalls. "It was a two-toned job, and I thought it was pretty snazzy. But Carroll looked at it and shook his head. "A fellow like you," he said, "ought to have something more dashing."

Glass couldn't ignore those words, coming as they did from the man he regarded as "the source of all light and truth". A few days later, he disposed of the two-toned Chevrolet and bought himself a Porsche.
Chapter 8
TEACHING, SETTLING AN OLD SCORE, 
STALKING IDEAS, AND CLEANING UP THE WORLD

Some years before the African and Colombian programs ended, Carroll had established at MIT the base from which he would operate for the rest of his life.

Coming to the Institute as a "visiting lecturer" for one year, he stayed on as a "visiting professor" for a second year--at the end of which Howard Johnson said to him, "You just can't go on visiting us forever," and on 31 May 1961, an announcement to the faculty noted the appointment of CLW to a professorship in the School of Industrial Management. It was the beginning of an academic career that would peak in 1974 when Wilson became the first holder of the Mitsui Professorship in Problems of Contemporary Technology, a chair made possible by a million-dollar gift from the thirty companies comprising the Mitsui Group of Japan, one of the world's largest industrial complexes.

Scratch an MIT professor and chances are you'll find an entrepreneur. "The typical professor here," says Robert P. Greene of the MIT administrative staff, devotes perhaps a third of his energy to teaching, another third to consulting work with some business or government agency, and another to bringing research contracts to the Institute."

In the performance of these functions, Wilson was the quintessential MIT professor, but the manner in which he conducted himself on all three levels was totally un-professorial. He hated
red tape and the slow grinding of the wheels of institutionalism, and he has been described as "adept at making end-runs around the bureaucracy at MIT."^2

Thanks to his daily contact with both American and European industrial leaders during the AEC years, to say nothing of his membership in the Council on Foreign Relations and other opinion-making bodies, he knew exactly where to turn when he wanted money for his projects. Paul Wilson has remarked on the accuracy of a magazine article that referred to his father as "a walking card index."^3

Wilson's fund-raising procedures were *sui generis*. When in the early 1970s, with the Arab oil embargo taking effect, Carroll began sifting the considerations that eventuated in his Workshop on Alternative Energy Strategies, one of his first steps was to call on the directors of General Motors.

That action, says Hilliard Roderick, was in line with Carroll's "go straight-to-the-top procedure, and he was practically the first scientist (almost certainly the first academic) to walk into the meeting of the board of directors of a large company."

He told them that the stuff that ran the cars they made was not necessarily "there forever," and that the time had come for them to start thinking about what to do when it ran out—meaning also, that the time had come for them to dig into their pockets and help CLW assemble a group of experts capable of framing suggestions as to what they should do.

"After Carroll talked to that board," Roderick recalls, "he told me that in all the years of all those board meetings, the
General Motors folks had never considered where the gasoline and the oil were coming from. They built cars; they assumed there would always be a supply of fuel from the Rockefellers or whoever it was owned the oil companies. But it wasn't their business. Their business was making cars, and they had given no thought to the contingencies that could arise in the oil-and-gasoline business. Carroll cited his talk with the General Motors Board as an example of how even the largest and the most experienced groups of people don't sit down to consider the future."

As for CLW's behavior in the classroom: "I don't teach people," he said once. "I meet with people who want to learn."

Those words encompass his style—not only with students in the classroom but with students and colleagues outside it. John Glass' impression during his graduate days at MIT was that the average professor, having elucidated the problem of a course, would then proceed to present the "right" answer and to steer his students away from the "wrong" ones. "Wilson didn't go that route," says Glass. "He had the most engaging way of making us dig into a subject for ourselves and of making us think about it out loud, with the result that sooner or later it dawned on us that nine times out of ten even the most widely accepted solutions to a problem must be taken with a grain of salt."

Once, during the seminar that gave birth to FIA, Wilson asked each member to prepare a paper on an issue for which there was patently no single answer. For his topic, Glass selected the question, "Who owns the rights to the Moon?" Carroll, he says, "always kept the decision within the bounds of practicality, but
inside those limits he encouraged us to think in unconventional ways." To the best of Glass' memory, Carroll never told a student that his ideas were stupid or his data incorrect. When someone advanced information that was obviously cockeyed, CLW would "tip back in his chair, his chin would come out, the five fingers of one hand would be brought into touch with the five fingers of the other hand, and he'd say, "Well, perhaps you'd also like to consider the following facts,' or words to that effect."

Glass was struck by the ease with which Carroll drew the students close to him. "He didn't go about it in the usual ways," says Glass. "Carroll was no toucher. I never saw him put his arm around another person. He was never one of the boys: no telling of stories, dirty or otherwise—I couldn't imagine Carroll telling a dirty story; no profanity; no taking you aside to whisper nasty little secrets about the other faculty members; no running down of anyone, not even of public figures. But somehow he drew you in, and the next thing you knew you were calling him 'Carroll' without even realizing that only yesterday he was still 'Professor.'"

Bill Matthews believes that one of Carroll's strengths as a teacher was that he was first of all a learner. "Carroll was never afraid to expose his ignorance," says Matthews. "If you brought up something unknown to him, he'd seize the first opportunity to ask you what it meant, what it was all about. One time he and I went down to Washington to talk with some scientists from NASA. We met at the Cosmos Club, and the conversation went too fast for Carroll to interrupt, but I sensed that some of the terminology was baffling him. Sure enough, the two of us were no sooner out of the building
and into the car when Carroll was saying, 'Look here, Bill, those fellows used some pretty fancy expressions. What in the world is a simulation model?'"

Matthew rejected the suggestion that Carroll was "aloof" in his relationships with other people. "The word 'aloof' implies aboveness," he says, "and that wasn't Carroll's manner at all--an emotional distancing, yes, but I always saw that as more horizontal than vertical. Granted, Carroll could be abrupt. If he discovered that you didn't have much on the ball, he left you alone; but if he thought you had, he treated you as an equal."

Women working with Carroll appreciated this quality in him. In the early 1970s, Donella H. Meadows, now on the faculty of Dartmouth College in New Hampshire, found herself in frequent contact with Wilson and the other members of the executive committee of an international societal problem-identifying organization known as The Club of Rome. "It was an all-male committee," Professor Meadows recalls, "and to most of the members I was something less than a whole person. Nor was I to be taken seriously as an intellectual. With Carroll it was quite different. When we talked, it was not man to woman; it was one professional to another. I was more grateful to him for that than I can say. Susan Leland, CLW's administrative secretary for many years, remembers the comparable reactions of a woman in Italy--"an enormously capable person named Adriana Cavagna," who for a time did some clerical work on one of Wilson's projects. "For the life of me," says Susan, "I couldn't describe to you Mrs. Cavagna's pleasure--and shock--when the final report appeared, to find herself in print, listed among those who had contributed to the success of the undertaking."
In the classroom CLW was a study in perpetual motion. When he himself was talking, he'd play with his glasses, taking them off and putting them on again. When a member of the class was speaking, he'd fidget endlessly. He'd straighten his papers. He'd line up his pencils. He'd thrust a finger under his collar or tuck in his shirt. David and Elizabeth Dodson Gray finally decided that these were Carroll's ways of occupying himself while trying not to interrupt a talking student. "When a student would ask him, "What do you think about such and such," he'd say, "Oh, I know of no final answer to that. What are your thoughts on it?"

The same year--1967--that saw the conclusion of the MIT Fellows program also saw a recrudescence of CLW's hassle with Lewis Strauss.

When on 27 June 1953 Strauss became the third chairman of the Atomic Energy Commission, it was common knowledge in scientific and governmental circles that the former investment banker, in the words of Jim Nichols, "was out to get two people: Robert Oppenheimer and Carroll Wilson." When Strauss left the AEC five years later, Oppenheimer had been stripped of his security clearance on the recommendation of a board of inquiry, using secret data on Oppenheimer's association with known communists that Strauss himself had asked the Federal Bureau of Investigation to collect. As for CLW, Strauss' efforts to have him fired from Metals and Controls had miscarried, but the older man's desire to "get" him had not abated.

Evidence of this showed up in 1962 with the publication of *Man and Decisions*, Strauss' account of his multiple careers as aide to Herbert Hoover, admiral in the naval reserve, and public servant.
Nowhere in these memoirs did the name Carroll Wilson appear; but readers familiar with the activities of the AEC during the years that Strauss was one of the original Commissioners and Wilson General Manager could not miss Strauss' reference to Carroll in a chapter of his book dealing with security problems at the AEC. "The Commission," Strauss wrote on page 256,

adopted many of the (security) procedures of the Army's Manhattan District, among which was the wearing of identification badges in restricted areas... A visitor to the headquarters building, for instance, was required to be announced by telephone from the entrance and to be escorted to and from the office with which he had dealings.

In 1948, I learned that an alien was the holder of a permanent pass to the Commission's headquarters, a pass, moreover, which was of a character that did not require him to be accompanied while in the building. It developed from the record maintained by the guards...that this particular alien was a frequent visitor in the evening after the usual work hours. Being concerned, I took the matter up with my colleagues and found that none of them had been aware of the situation. The pass was withdrawn at once. The name of the alien was Donald MacLean [sic], an attache of the British Embassy. His name made headlines when he disappeared and later turned up in Moscow with Guy Burgess in 1951.

As it was Carroll who issued the pass to MacLean, Strauss' recital of the incident could be interpreted as a criticism of CLW's
handling of security matters. Strauss' version of the incident, moreover, would appear to have been an attempt to give the impression that in 1948 he was in possession of information about Maclean that did not come to light until 1951. Whether Carroll noticed this discrepancy in Strauss' book is unclear, for some years after Men and Decisions was published he told Joe Volpe that he had never read it. At a still later date, however, he told Bill Matthews that he had taken no action on the remarks in Strauss' memoirs because he knew of "no forum where one could answer a book." Meanwhile, the appearance in a Providence newspaper of an article on the MacLean case had provided him with a forum in which he could reply to Strauss.

Strauss' part in the publication of the article in the Providence newspaper is recorded in his account of a phone call, "apparently from New York," on 9 August 1967. It was the practice of the former AEC chairman, when evening came, to dictate what he called "Memos for the File" to his personal secretary. This one quoted his caller, identified as a "Mr. Knightley," as saying that "he had written his story for the London Sunday Times--a story dealing with MacLean's relations with the AEC--, and wanted to know whether to send it" to Strauss' house in Virginia or to his office in Washington. The reporter, according to the memo, had called on Carroll at MIT. Carroll had answered his questions, but had characterized the information requested as "now history and no longer of interest to anyone but an historian." Knightley informed Strauss that "he had learned (but not from Wilson) that Mr. Wilson's wife had been a British subject and there was some familial
relationship (of what nature he did not know) between Mrs. Wilson
and MacLean [sic]."*

It would appear that subsequent to his talk with Strauss,
Knightley decided to leave London-born Mary Wilson out of his
story. There was no reference to her on the printed page when on
the following 16 October the Journal Bulletin, the afternoon edition
of the Providence Journal, carried a reprint of the piece Knightley
had written for the London newspaper. The article noted that for a
time beginning in 1948 MacLean served as Britain's secretary to the
Combined Policy Committee, a body formed during World War II and
later lodged in the AEC, to facilitate the exchange of atomic
information among the United States, Great Britain and Canada.
Knightley quoted Strauss' description in Men and Decisions of
MacLean's nocturnal visits to the AEC building and asserted that the
once and future spy for the Soviet Union "was able to get his pass
because the AEC [meaning the five Commissioners] was split over the
exchange of atomic information into pro- and anti-British groups."
According to the London Sunday Times correspondent, the "general
manager...at the time, Prof. Carroll L. Wilson" supported the
pro-British group whereas Commissioner Strauss was "in the other
group." Carroll was quoted as saying he ordered a "non-escort pass
to be issued" because he "thought MacLean to be safe." Knightley
described the pass as "a badge to be picked up at the desk in the
AEC lobby," and added that "when security access to a building is
tightly controlled, security inside tends to be limited." It
followed, in the opinion of the writer, that "MacLean could have had
access to virtually any rooms and files," and that the regularity of his late-night visits showed that "his intentions were fully satisfied."

To Carroll, this tale of "the amazing non-escort pass." as Knightley dubbed it, was exasperating, if only because its major provenance in the United States was Providence, Rhode Island--and Seekonk, where the Wilsons lived, is a suburb of that city. As Carroll later explained to Howard Johnson, he could not leave unanswered an attack on himself, published in "the city where I am a director of the leading bank and an honorary trustee of the Rhode Island Hospital."

Still Carroll hesitated at first. Should he challenge or ignore the article? He talked with Jim Nichols, his public relations man. How much attention do readers pay to such attacks? Not much, said Nichols, venturing to guess that the average person forgets what he reads in a newspaper within twenty-four hours. He talked to his son; and Paul Wilson, in whose eyes Lewis Strauss was a perennial candidate for the son-of-a-bitch-of-the-year award, encouraged him to go ahead. Indeed, it was Paul, working from his father's handwritten notes, who framed the letter to the editor that appeared over Carroll's signature in the morning edition of the Providence Journal on 30 October.

"Your October 16th issue," the letter began, "carried a story from the London Sunday Times headed 'Soviet Spy MacLean Had Access to all U.S. Atomic Data.' It explicitly calls into question the effectiveness of the security system in the Atomic Energy Commission and by implication my...integrity and judgment while...General
Manager of the AEC. Since the reporter displays near-total ignorance of the actual circumstances at the time, his charges are not difficult to refute. Nevertheless, this article is an example of 'a little knowledge being a dangerous thing,' and its release by the London Sunday Times shows an irresponsibility not generally to be expected from such a source."

Having dismissed as misleading Knightley's description of AEC's secrets-guarding methods, Carroll endeavored to set the record straight. "The...security system inside the Atomic Energy Commission building," he wrote,

was extremely complex and thorough. It was fully enforced 24 hours a day, so attempts made by MacLean to get at secrets "in the evenings and after work hours" would meet exactly the same resistance as by day. In fact, it would have been more difficult at night...to escape the scrutiny of the extensive guard force patrolling every room in the building.

Every secret document was kept in a 3-way combination safe except when actually in use by an authorized person. These safes were always locked whenever the room was left unoccupied by persons who regularly worked there. Every safe, when open, had a large red sign "OPEN" placed on the handle of the top drawer. Anyone found by the numerous guards to have left a safe open even when stepping for a moment outside the room, was severely reprimanded for a security violation.

In empty rooms guards were instructed to open and inspect desk drawers and ordinary wastebaskets, and to seize and report the discovery of any secret document which might carelessly
have been left outside a safe. Specially marked wastebaskets were used for secret documents which were to be destroyed. At the end of each day such wastebaskets were collected by the guard force and the contents were burned under their supervision.

The basic principle of our security system was that secret information was only available to those who had a need to know it in order to perform their duties. Secret information was divided into many tight and isolated compartments so that only the Commissioners, the General Manager, and a few other high officials had access to all of it. Other people were only allowed access to relatively small portions of the classified material. The rigorous enforcement of security within the building made it virtually impossible for anyone to see anything he was not authorized to see.

Carroll summarized his defense of the AEC security system by pointing out that the statement in Knightley's article that MacLean's non-escort pass permitted him to get into "any room and files he chose" was "ridiculous" in that it made "the theft of atomic secrets sound like a suburban burglary." Carroll turned next to the status and activities of MacLean himself. "As U.K. Joint Secretary of the Combined Policy Committee," he wrote,

MacLean was authorized to have access to information that the U.S., U.K. and Canada shared together from wartime days. Included were data on certain patents, declassification matters, research and development relating to the procurement of uranium from foreign sources, and estimates of supplies and
requirements. During the war, while the atomic programs of the
three countries were merged, a joint uranium procurement
program was established, and this was one of the few activities
in the atomic field which the three countries continued to
share after the war. Such activities were supervised by an
organization called the Combined Development Agency (CDA) which
had two joint secretaries—one British and one American.
During the War these joint secretaries and their secret files
were located in the headquarters of the Manhattan District.
The files and joint secretaries moved to the AEC building when
the AEC took over U.S. atomic activities in January 1947.

Some time after MacLean was named by the British as a joint
Secretary of the Combined Policy Committee (CPC), Sir Gordon
Munro, British Minister and U.K. Member of the CPC reported to
me that MacLean was the principal courier of secret cables and
other documents between the British Embassy and the CDA
office. Sir Gordon stated that it would be a great convenience
and reduce delays in visiting the CDA office if MacLean were
issued a non-escort pass of the type which had been issued to
the British CDA joint secretary. He formally requested such a
pass for MacLean and gave me his assurance of MacLean's
reliability which I am sure he considered unquestionable.
Being fully authorized as General Manager to issue such a pass
I did so.

No special dispensations were made to MacLean which were not
justified by his position. The security system within the AEC
was complex and painstaking in proportion to the importance of
the secrets which were the most closely guarded in history. MacLean's character and background had been examined by the British security department, and he had been certified by the British Embassy to be reliable, even on the high level he was working. It was customary for the U.S. to accept such assurances of reliability from the British Government rather than attempt independent F.B.I. investigations of such British Government officials.

I had only a slight acquaintance with MacLean, partly through official contacts, and partly through meeting him at a few official social functions. The acquaintance was too distant for me to have formed any personal judgment of him. Obviously, if I had the slightest suspicion of MacLean's despicable character I would not merely have withheld a building pass, but would have reported any suspicions to the appropriate U.S. authorities and would have requested the British to name someone else as CPC joint secretary.

I learned that MacLean was a spy when he defected in 1951. The F.B.I. came to interview me about MacLean's CPC/CDA connection and I explained to them and later to AEC security officials exactly what I have stated in this letter. I was shocked to learn of MacLean's duplicity and deeply distressed at the harm he had done to the United States. MacLean's villainy compounded that of Klaus Fuchs, the British physicist who worked on the first atomic bomb at Los Alamos during the war. Having become an expert on atomic weapons, he was recommended by his wartime colleagues to take part in the first post-war Declassification Conference. In early 1950 Fuchs was discovered to be a Soviet spy.
Finally, Carroll took up the assertion in the 16 October article that, in his day, the AEC "was split over the exchange of atomic information into pro- and anti-British groups" and that he adhered to the "pro" group and Strauss to "the other group." In fact, wrote Carroll, Strauss "was the 'other group,' everyone else on the Commission having voted in favor of the exchange. "Strauss," Carroll concluded, "was never able to accept the...decision of the other four members of the Commission and tried to persuade me and my staff to thwart such decisions. Because his proposals were not according to accepted procedures, we consistently refused them, and his resulting frustrations engendered bitter animosity towards myself and some of my AEC colleagues....His disregard for accepted procedures was the principal reason for the almost unprecedented action by the U.S. Senate in 1959 in refusing to confirm his appointment to a Cabinet post."

When Carroll's letter-to-the-editor appeared, he sent copies of it far and wide, to friends in the United States and Europe. He told Howard Johnson that he hoped he had written the last chapter in an old and tiresome fuss." Possibly he had. Publicly, Lewis Strauss made no comment on the letter. Privately, according to his son Lewis H. Strauss, he never abandoned his conviction that Carroll Wilson was either an agent of the Soviet Union or a sympathizer. "He wasn't sure about the agent part," the younger Strauss says, "but he was positive about the sympathizer part."

Even before the African and Colombian programs faded away, Carroll was casting about for new problems to tackle—preferably
problems planetary in size and likely to be of concern to
generations yet unborn. Bill Matthews describes him as endlessly
grappling with possible ideas of this sort. "Many of them came to
naught," he says, adding that he doesn't regard that fact as
uncomplimentary to Carroll. "After all," he reasons, "if a man has,
say, twenty ideas a year and only sixteen or seventeen of them
fizzle and the remainder prove viable--well, that's a record anyone
could be proud of."

David Dodson Gray was privy to one of Carroll's stillborn
ideas. "It was soon after the completion of WOCDL--the World Coal
Study--", he recalls, "and Carroll was wondering what to do next,
and he took to thinking about the possibilities of solar energy. If
that force could be put to use on a large scale, could we perhaps
reduce the consumption of oil in the country by a million barrels a
day? Carroll thought there might be something in the notion, and he
asked me to go down to New York with him to talk it over with people
at the Rockefeller Brothers Foundation.

"Down we went and it was quite a bull session. Present were
several members of the foundation staff in New York, plus some
others who'd been flown in from around the country. We talked for
hours. First, we explored what a massive utilization of solar
energy might accomplish, and then we went into the problems that its
development might entail--such things as housing restrictions and
credit subsidies. Would solar equipment be added to the homeowner's
tax base? To his mortgage? How could we bring the banking industry
and the state legislatures into the act? Which committee of
Congress would be involved?"
Toward the end of the day someone did some scribbling on the back of an envelope. He told us that his calculations showed that if the bulk of the eight-miles-per-gallon gas-guzzlers in the country—chiefly those bought second-hand by poor people—were removed from the road and replaced free of charge by forty-miles-per-gallon diesel-using Rabbits, you'd have a saving equal to, if not greater than, the million-barrels-per-day drop in oil consumption we were talking about. In other words, the solution to our problem was all there, on a little piece of paper, and I remember Carroll or someone saying that obviously there was no need for staging a big study to reach an answer we already had."

But if some of the seeds CLW planted yielded no flowers, there were others that bloomed under his nurture. So Nevin Scrimshaw, Director for many years of MIT's Department of Nutrition and Food Science, can verify.

During Wilson's travels in Africa, his attention was called to the singular lack of protein in the diet of innumerable natives, and one day in 1964 he dropped into Scrimshaw's office at the Institute to discuss the situation. Scrimshaw cites developments flowing from this conversation as a revealing example of how CLW went about translating an idea into action. At that time, Scrimshaw has written, Carroll "in a manner that I was to learn was...characteristic, was trying to identify a major global problem of the future that could be averted by the...application of science and technology. We agreed that [what] with population pressures, increased demand from rising affluence, [and] stress on arable land and aquatic resources, [the] protein supplies of the world, already
marginal, would become critical long before the end of the century and that the time to act was now."

Act they did. Scrimshaw prepared a report, subsequently published under the title "International Action to Avert the Impending Protein Crisis." Carroll "shepherded" this study through the higher echelons of the United Nations, and the United Nations convened a panel of experts, who endorsed its findings and proposals.

"But calling attention to a problem and coming up with a list of recommendations," Scrimshaw writes, "was not enough for Carroll." Presently he was back in Scrimshaw's office with a question. "What single technological initiative," he asked, "could...make a quantum difference in global protein availability?"

That, as Agatha Christie's Hercule Poirot would say, put the two men's "little gray cells" to working. Protein comes from a variety of what Scrimshaw in his report to the UN speaks of as "conventional" sources, notably fish and animals. But fish can thrive only in certain waters and livestock only as a result of intensive care of certain lands. Obviously what was needed were sources from which protein could be derived in the absence of ideal marine and agricultural conditions. Were such sources available? They were, indeed, said Scrimshaw, but the Japanese had decided to speak of the substance derived from them as "petroprotein," and that term had generated "a wholly unjustified fear" of the presence in the product of cancer-inducing elements. It followed, Scrimshaw and Carroll concluded, that the two of them must find another name, whereupon they took to the blackboard. A dozen or so possibilities had appeared there when suddenly Carroll pointed to one of them--"Single Cell Protein"--and said, "That's it!"
For a few minutes the scientist in Scrimshaw hesitated. He pointed out that "in a sense all protein comes from single cells." Never mind, was Carroll's response to this objection, the term will "acquire its own meaning."

It did. It has. Today the term is so well known and so widely accepted that authorities on nutrition regularly refer to it by its acronym, SCP. In 1967 MIT was host to a conference of experts, summoned to develop ways and means for the production and use of SCP. This meeting, Scrimshaw writes, stimulated the establishment of "an SCP working group, whose first meeting was held in the Soviet Union," and now "the necessary technology" is in place, providing assurance of an "almost unlimited supply of protein" for both humans and animals "with no dependence on agricultural land." To which statements, Scrimshaw adds that "as SCP comes into its own toward the end of the century, Carroll Wilson will be perceived as the visionary who stimulated its development in anticipation of future global needs."

When, shortly after the conclusion of the fellows program, Carroll began looking into the idea that was to become the first of his big projects--the Study of Critical Environmental Problems, or SCEP--the word "environment" was not yet the newspaper-headline maker it has since become. SCEP's origins trace back to Carroll's activities as a member, beginning in 1964, of ACAST, the United Nations Committee for the Application of Science and Technology to Development. Attending ACAST meetings in New York, he noticed the frequency of inquiries to the committee from organizations and individuals concerned with what they described as the rapid
deterioration of the air and waters of planet Earth. How serious was this situation? Carroll wondered. What was being done about it?

Moving about at MIT, he put his queries to scientists and engineers whom he thought might have answers. But the only answer of consequence was the suggestion that he get in touch with a graduate student in political science named Bill Matthews, who was known to be doing research on environmental matters. Bill remembers getting a phone call, asking him to come around to Carroll's office.

This was in January 1969. It was their first meeting, but by no means the last. CLW had picked up a little getting-started money, about a thousand dollars. Having satisfied himself that nobody at MIT was doing anything for the world’s ailing air and water, he was wondering if anybody in the federal government was. Would Bill please take himself to Washington and "poke around a bit?"

Bill reached Washington in June. At Carroll's suggestion, he talked first with David Z. Beckler, the executive officer of the President's Science Advisory Committee at the White House. Beckler knew of "nothing in the works," and Bill moved on--to the Pentagon, to NASA, to the National Science Foundation. Everywhere the word was the same: nobody was doing anything, and Bill was changing his question from "What's being done?" to "What can MIT do with your cooperation?" When toward the end of his stay, Carroll showed up in the national capital, Bill suggested that the Institute assemble a bunch of specialists at a summer session, and ask them to explore the matter. "Good idea," said Carroll, and by early fall a steering committee had been set up and plans for SCEP were well advanced.

Winter brought a hitch in the preparations, but by no means a
crippling one. Carroll, in Paris for consultations with the Organization for Economic Cooperation and Development, fell ill. Pneumonia, said the doctors, and on his return home the Wilsons' family physician confined him to his house in Seekonk for three months, leaving young Matthews to select the experts for the forthcoming study session and to obtain from eleven federal agencies and five foundations the $250,000 required to fund it for four weeks and three days.

The place chosen for the summer session was Williams College in Williamstown, Massachusetts, an elm-shaded cultural enclave in the foothills of the Berkshires. The study opened on 1 July 1970 and closed on the last day of the month. Its seventy-five participants came from universities, corporations, laboratories, and federal agencies. They embraced a panoply of disciplines: meteorology, atmospheric chemistry, oceanography, biology, ecology, physics, engineering, economics, the social sciences, and the law. Forty-five of the investigators were on hand for all or most of the conferences, thirty for lesser intervals.13

During the first two days of the conference, specialists from many fields outlined the main inquiries to be pursued in the weeks ahead, and by Friday five work groups had been formed. For a week, beginning on 7 July, two of these examined whatever knowledge was available concerning pollutants believed to be harmful to air and water throughout the world. Simultaneously the other groups endeavored to determine the source and behavior of toxic wastes generated by the multiple activities of mankind, thus providing a database for use by the investigators. On 13 July the participants
split up again--this time into four groups--to deal with climatic
effects, ecological effects (on oceanic and terrestrial ecosystems),
ways of monitoring the environment, and the implications associated
with possible changes in it. With these efforts behind them, the
conferees, coming together in the Williams College auditorium,
reviewed their accumulated findings, formulated a series of
proposals for future research and action, and on the last two days,
conducted a briefing for the news media and other interested groups
and individuals.¹⁴

Assisting the participants was a small research staff. Its
members, most of them law or graduate students from three
universities, enjoyed few idle moments--for the stress of the
conference was on facts. CLW was a great believer in statistics.
Bill Matthews stepped into an MIT office one day to find Carroll
completing a hefty report from the National Academy of Sciences.
"My God!" he exclaimed, slapping the book on the desk. "Not a
figure in it!"

At Williamstown, he told the conferees that he had not brought
them together to exchange theories. Ask not what do we believe
about these environmental matters, he said in effect; ask rather
what do we know--and we can go on from there. Every meeting of
every work group was a pursuit of figures--and that's where the
student researchers took over, for often the figures needed were the
sort that not even a seasoned professional could carry in his head.

The members of one group, for example, might find themselves
struggling with a parcel of related riddles. Does the ratio of
scattering to absorption really depend on the form of the molecules
in the air? What about impurities? What kind of impurities should we consider? What are the historical trends? What's the effect of volcanoes? How do they change the trends? At which point, one of the experts can be described as clapping a hand to his forehead. "Gee," he says, "I haven't calculated that sort of thing since I was in graduate school." Whereupon a student researcher is dispatched to the library to labor into the night preparing the computation desired."

"That scientific conference," says Hilliard Roderick, "was different from any I'd ever attended." Strictly speaking, it was not a conference in the ordinary sense of that word. It was a workshop and work was done. No papers were read. The experts sat on the lawn in their various groups. They talked to each other. They asked each other questions. Every one of them brought to Williamstown in his head knowledge of certain pieces of the environmental puzzle. What they found when they got there was a setup that permitted them to pool their information. That in turn enabled them to agree on a series of recommendations for action—proposals that were given to the press on the closing days of the study and then presented in a report, published on 15 October and entitled Man's Impact on the Global Environment. SCEP's recommendations called for a diversity of undertakings, including the establishment of facilities for determining facts about pollution and the routes that pollutants travel; the creation of global computer models, incorporating atmospheric motion and ocean-air interaction; the installation of a public information center on environmental matters; and a drastic reduction in the
employment of DDT, along with the suggestion that subsidies be given countries unable to afford expensive nonpersistent insecticides.\textsuperscript{16}

The proposals of greatest interest to the public of 1970 were those dealing with the then current debate over whether the United States should deploy a fleet of 18,000-miles-per-hour aircraft known as supersonic transports. The magazine \textit{Science} credited the SCEP investigators with raising "a possibility apparently never considered heretofore." This was the likelihood that such a fleet would heat up the atmosphere of the earth to a dangerous degree, a finding that played a part in the subsequent decision by Congress to keep the SST out of the skies above the continental United States.\textsuperscript{17}

SCEP was not Carroll's last examination of the environment. The summer of 1971 found him conducting another such probe--this time in Sweden at the little college town of Wijk, a short bus-ride from Stockholm. Financed for the most part by the National Science Foundation and hosted by the Swedish Royal Academy of Sciences and the Swedish Royal Academy of Engineering Sciences, it opened on 28 June and closed on 16 July.

Whereas the workshop at Williamstown embraced the whole range of ecological concerns, the one at Wijk concentrated on the relationship of human activity to weather and was known as the Study of Man's Impact on Climate or SMIC. Whereas almost all of SCEP's participants were Americans, SMIC's thirty participants came from fourteen countries--from Israel, Japan, the Soviet Union, the United States and Western Europe.
At the opening session in the dining room of the Wijk Center, charcoal suits and regimental stripe ties predominated. But when Carroll strode to the podium to start the proceedings, he was wearing a turtle neck sweater. It was his way of dramatizing a point. Much work was to be packed into the next three weeks, and the sooner the geographically scattered members of the study got acquainted with one another, the better. It was his hope, therefore, that they would submit to the "indelicate American habit" of addressing one another by first names or nicknames, sans titles.

William S. Kellogg, now senior scientist at the National Center for Atmospheric Research in Colorado, remembers catching a murmur of shock among the attendants, but within a few hours most of them had complied with their Director's wish. A document in CLW's papers headed "Salutations on SMIC List" shows Christian Junge of the Max Planck Institute for Chemis in West Germany answering to "Chris," R.E. Munn of the Canadian Department of Environment to "Ed" and Syukaro Manage of the Geophysical Fluid Dynamics Laboratory in New Jersey to "Syuki." Only four participants stood on their dignity—a Russian and two Germans—and "we had to be careful," writes Kellogg, to address each of them as "Professor" So-and-So.

Urging the use of first names was not the only ploy essayed by Carroll to encourage the members of the project to work together. Shortly after SMIC began, he arranged for a coastal vessel to take the participants on a recreational journey to one of the many islands in the waters off Stockholm. The ship he engaged for this purpose was large enough to carry the passengers comfortably but too small to permit them to get away from one another; and their
destination turned out to be nothing more than a rock in the sea. By the time the touring environmentalists returned to Stockholm, the barriers dividing them had been appreciably lowered.

SMIC's major finding, incorporated in a report published in 1971 and entitled *Inadvertent Climate Modification*, was that the industrial countries' release into the atmosphere of quantities of heat, gases and solid particles was having a noticeable effect on the ice surrounding the Polar Ice Cap in the Arctic. The SMIC experts predicted no disastrous rising of the oceans as a result of this process. They warned, however, that in time the melting of the thinner polar ice might permit the Gulf Stream to continue northward instead of being deflected eastward, as it now is, to warm the coasts of Europe."

One of Carroll's purposes in organizing first SCEP and then SMIC was to supply the United Nations with data for use at a global gathering to be held at Stockholm in 1972 and to be known as the UN Conference on Human Environment. To prepare and direct this effort, UN Secretary General U Thant had obtained the services of a self-made Canadian millionaire named Maurice F. Strong.

Compelled by financial stringency to terminate his formal education with a high school diploma, Strong had gone on to a career in finance and natural resource development that by 1964 had brought him to the presidency of the Power Corporation of Canada. Along the way, he educated himself in economics and other topics; mastered a number of languages, including Eskimo and Swahili; traveled widely, "goaded," he explained, "not by wanderlust but by a desire to find meaning and purpose in life;" and found time to serve the YMCA as a
fund-raiser and as the president of its Canadian branch. When in October 1966 he left private industry, it was to take a reduction in income of $163,000 to become Director General of the Canadian government's External Aid Program—a position congenial to a man well aware, as he once remarked, of "the destructiveness of poverty" and eager to help the "two thirds of the population of the earth" afflicted by it.20

As of January 1971, when Strong joined the United Nations as Undersecretary General in charge of Environmental Affairs, he had heard of Wilson's work in the field. Even as he was thinking of getting in touch with Carroll, Carroll got in touch with him.

"He dropped into my office one day," Strong says, "to ask if he could be of help, and for the next year or so he served as my senior advisor, my eminence grise." To help Strong, Carroll assembled at MIT a group of individuals versed in environmental lore. One of them was Dennis L. Meadows, soon to become well known as co-author with his wife and others of the controversial book The Limits to Growth. Another was MIT faculty member Jay W. Forrester, developer of the computerized global model on which The Limits to Growth rested. Strong flew to Cambridge to meet with the group and remembers putting a question to its members. When the scheduled UN Conference on the Human Environment ends, he pointed out, "I'll have the ear of the world for maybe two minutes." What should he say to the world at that time? What could he say that would alert people to the dangers of pollution and encourage them to do something about it? "I got good answers," says Strong—answers that came in handy when on 16 June 1972 the big meeting in Stockholm concluded and its 1,200 delegates from a hundred countries went home.
In the years ahead, environmental issues continued to interest CLW, but in the aftermath of the UN Conference on the Human Environment his mind was already turning to another problem. The early 1970s witnessed the emergence of what came to be known as the "national energy crisis"—a development brought to a head in October 1973 with the embargo on oil by OPEC, the Organization of Petroleum Exporting Countries. Soon lines of cars waiting at gas stations had become a commonplace of the American landscape and the President was asking people to lower their thermostats and curtail their driving.

Months before the embargo, Carroll was considering a program that he later described in the magazine *Foreign Affairs* under a headline reading "A Plan for Energy Independence." When in the spring of 1973 he was invited by the Council on Foreign Relations to give that year's Elihu Root lectures, he touched on the energy issue in all three talks—and in the final one he outlined what he termed the new "mode" or "model" for dealing with that and other problems. Under the traditional mode, a group of experts met for a few days or a few weeks, analyzed the difficulty at hand, and issued a report. Under the mode proposed by Carroll, the work would extend over a period of years and involve the cooperation of top policy makers in the field.

Among Carroll's listeners in the meeting room of the Council's townhouse headquarters in New York was the Wall Street investment banker William T. Golden. A frequent advisor to the federal government on scientific affairs, Golden had known Carroll since the latter's AEC days, had watched his subsequent career with interest and approval. At a dinner after the lecture, Golden suggested to
Carroll that he use the new procedures he'd described to examine the energy situation. Were Wilson inclined to do that, Golden stood ready to "grubstake" him—to provide him with enough "seed money" to get started.

At that moment, as Carroll related later, his next project, the Workshop on Alternative Energy Strategies--WAES--was born.\(^2\)\(^3\)
Chapter 9
IN AND OUT OF THE CLUB OF ROME
AND THE ENERGY WORKSHOPS

Carroll Wilson’s decision to assess the energy options open to the oil-consuming nations ended a search on his part for a subject suitable for investigation on a large scale. Our knowledge of this effort comes from William F. Martin, a graduate student at MIT when in 1974 he joined the small staff—consisting of himself, Paul Basile, another graduate student, and Robert P. Greene—that Carroll had selected to administer WAES. Martin, a one-time special assistant to the President for national security affairs and now Deputy Secretary of Energy, has described Carroll, in the months following the conclusion of SMIC, as scrutinizing a long list of ideas for possible projects.

One of them dealt with the world’s food problems, and mention has been made of the part played by CLW in the development of a technology for the production from oils of single-cell protein. Another idea on Carroll’s list led to his installation at MIT of a course dealing with ways of structuring a society in which future generations (one’s grandchildren—for example) could find fulfillment. Known as the Seminar on Strategies for Sustainable Growth, it was conducted by CLW himself in 1972 and 1973 and for two years thereafter by David and Elizabeth Dodson Gray. The seminar was an offshoot of CLW’s experiences as a member of the Executive Committee of the Club of Rome—experiences worthy of attention because of the keys they provide to the thinking behind some of the
methods Carroll formulated to carry his energy projects, WAES and the World Coal Study (WOCOL), to successful conclusion.

These days the Club of Rome attracts little notice, but there was a time, during the early 1970s, when its activities excited considerable comment. Admirers saw the organization as a loose-knit coterie of well-intentioned men bent on putting to rights a world whose problems had become too severe and intertwined for traditional institutions to handle. Critics, noting the wealth and power of the Club's members, tended to put it in the same category as David Rockefeller's Trilateral Commission (to which CLW also belonged), arguing that like the Commission it constituted a plot to put control of the world in the hands of multinational corporations."

That Carroll was not untroubled by these criticisms is clear from his correspondence with the principal founder of the Club, the Italian industrialist, Aurelio Peccei, and with Peccei's collaborator, Alexander King, scientific director of the Organization for Economic Cooperation and Development (OECD). Indeed, some of CLW's letters indicate that long before he resigned from the Club of Rome at mid-decade he had come to regard the directions it was taking and many of its procedures as incorrect."

On one point both detractors and well-wishers could agree. The Club of Rome was the brainchild of Aurelio Peccei. The handsome industrialist-economist was 59 when in 1968 he brought the group into being, and, until his death sixteen years later, it was so conspicuously an extension of his flamboyant personality that Jay Forrester, recalling his own work in the organization, speaks of it as "Aurelio Peccei's correspondence list."
By the time Carroll became a member of the Executive Committee, the founding fathers of the Club were embarking on a two-phase consideration of what they referred to interchangeably as the "World Problematique" or the "Predicament of Mankind." Phase One was to be an endeavor to identify the crucial questions confronting twentieth-century civilization; phase two an attempt to supply the answers. Here was an enterprise into which a man of Carroll Wilson's preoccupation could throw himself, and for a time he was tireless in his efforts to help Aurelio Peccei attain his objectives.

In the summer of 1970 the founding fathers arranged for the club members--approximately seventy-five scientists, educators, sociologists, and business executives from some twenty-five countries--to convene in Bern, Switzerland, to discuss sixty-six global problems. Carroll, studying the proposed agenda, was so impressed by the degree to which the sixty-six problems impacted on one another that he invited Jay Forrester to attend the meeting. Inventor of Whirlwind, one of the precursors of today's high speed commercial computers, Forrester for many years had been conducting at MIT a research program known as System Dynamics. If anyone could demonstrate how the difficulties of planet Earth link together, Carroll reasoned, Forrester could, and in Switzerland the MIT systems analyst proposed the construction of a computerized global model that would show in mathematical terms the relationships among the major components of the World Problematique--population, agricultural production, industrial output, natural resources, and pollution--and how the interplay among these elements affects the world's ecological networks. Flying home from Bern on a sweltering
July day, Forrester sketched on the back of an envelope a rough version of what was to become World3, the first of the many and variously programmed global models now being used by national governments and international entities, including the World Bank and the United Nations. Less than two years after Forrester's visit to Bern, this computerized picture of how the world operates and where it seems to be going had become the basis of the most headline-making venture ever undertaken by the Club of Rome—the publication on 2 March 1972 of the book *The Limits to Growth*.

Although *The Limits to Growth*, a 197-page paperback selling for about $2.50, was the product of an eighteen-month study by a team of systems analysts at MIT, it was written in a popular manner and from the standpoint of the publisher was a runaway success. Within months of its appearance, it had gone through eighteen editions and had been translated into twenty-three languages. The eagerness with which readers carried it out of the bookstores—those in Holland alone purchasing 200,000 copies—seems to have been in direct proportion to the bad news that oozed from its pages. For *The Limits to Growth* trumpeted these messages: that if population, pollution, agricultural production, and industrial production continued to rise at present or higher rates, human society would collapse within a hundred years or less; and that this speedily-approaching catastrophe could be averted only if mankind foreswore its devotion to the principle of growth and shifted instead to a "steady-state" society, to a society "in equilibrium."

According to the four authors of *The Limits to Growth*—Donnella Meadows, Dennis Meadows, Jorgen Randers and William W. Behrens
III—, population-increase must be slowed, gross national product slashed, and environmental hazards everywhere removed. In short, mankind must put on the brakes—or crash.

If The Limits to Growth's reception by the public can be called gratifying to the Club of Rome people, the same cannot be said of its reception by commentators in many newspapers and periodicals. Science Digest quoted a British economist as calling the book "a brazen piece of impudence." The New York Times quoted one American economist as dismissing it as "utter nonsense," another as arguing that the no-growth policy recommended by its authors was not only "hard to imagine" but also could have the effect of locking the poorer cultures, such as the developing nations of Africa, "into their poverty;" and Russell Baker, in one of his Sunday Times columns, noted that "the fool as survivor is one of literature's most familiar figures" and predicted that most of us would go right on foolishly opening "the seed catalogue with the feeling that everything is going to come out all right in the end," the Cassandra-like warnings of The Limits to Growth notwithstanding.

Allen Kneese and Ronald Ridker, reviewing the book in the Washington Post, rejected practically all its conclusions, and Science magazine described the sponsor of the work, the Club of Rome, as bearing "an uncanny resemblance to Jules Verne's fictional Gun Club of Baltimore."  

Professor Forrester, harking back today to this hue and cry, takes the position that with the issuance of The Limits to Growth the Club of Rome reached the pinnacle of its influence—and then almost at once began to slide downhill like some of the squibbles on
the professor's mathematical representation of the intertwining stresses of the modern world. Forrester attributes the club's glide into near-invisibility to its failure, when The Limits of Growth came under fire, to come vigorously to its defense.

"Peccei and company," says Forrester, "set out to change the course of the world. Now you can't do that sort of thing without controversy--and when the inevitable fuss arose, what happened? Well, in my opinion, this is what happened: finding themselves in the middle of a debate bigger than they were ready for, Peccei and his gang simply drifted away from it. Indeed, they came very close to disowning The Limits to Growth altogether, always referring to it thereafter as a 'report to the Club of Rome,' never as a 'report of the Club of Rome."

It is intriguing in the light of Forrester's stricures to find Carroll Wilson urging Aurelio Peccei to handle the attacks on The Limits to Growth in "a laconic and low-key fashion". Four weeks prior to the publication of the book, Wilson, having anticipated the criticisms it was certain to precipitate, was writing Peccei that without in any sense disassociating ourselves from the Meadows report [The Limits to Growth] nonetheless I think we need to stand sufficiently aside so that we have maneuvering room to move on to other things...I believe that we have if not lighted, at least blown hard on a brush fire that will sweep the world and that there isn't the faintest prospect that we can "ride this tempest" ourselves or direct and steer it. Any suspicion that we intended to would reinforce the growing and rather wide-spread suspicion that the "Club of Rome" is a
world-wide conspiracy of an elite group working in the shadowy background to change the world in ways which will have the most profoundly disadvantageous consequences for half or two-thirds of the world's people.

Elaborating on this point, Carroll stated his belief "that the implications of The Limits to Growth for the less developed countries are very disturbing and (will) generate great hostility. Those who are perceptive can see through the arithmetic and understand just what... (the no-growth policy recommended by the book) means in terms of their aspirations for material standards of living comparable with those of the highly developed countries. Nothing we can say in our rhetoric is going to make any impact on these people."

We have no ways of knowing whether Aurelio Peccei's timorous handling of the uproar provoked by The Limits to Growth was Carroll's doing or merely a reflection, as Jay Forrester contends, of Peccei's inability to appreciate the role played by systems dynamics in setting forth a view of the World Problematique "with which the public and the press could connect." What we do know is that the Club of Rome ducked its big fight and that in the intervening years it has become, in Forrester's words, "a forum for essay-writing whose annual meeting is reported on page eighteen of the New York Times."

We also know that Carroll was not pleased to see the club decline. In the 1970s he could no more stomach failure than in the 1960s he could abide negative reports from his Fellows in Africa. William Matthews has said that if Carroll found himself in a car
that was creaking and groaning and threatening to quit, he wouldn't bother to fix it, he'd get out and find himself another car—and in 1975, aware that the Club of Rome was creaking and groaning, Carroll got out.

July of that year found him in Guanajuata, Mexico, for the annual meeting of the club, a session that on his return home he described to Mary as "an expensive junket." According to Alexander King, president of the Club of Rome since Peccei's death in 1984, it pleased his predecessor to conduct the group's yearly gatherings "like a seven-ring circus." Forrester's recollection is that Peccei arranged these assemblages with "some sponsoring body, usually a country," and that the sponsor undertook all expenses, "including the travel to and from the meeting of those of us who were members. Once there, we listened to the program Peccei put on, and about the only thing that distinguished us from the other spectators present was that we sat in a reserved area of the auditorium." Months earlier Carroll had offered to resign from the Executive Committee, complaining that the club had become a one-man operation and that there was nothing for the members of the "Ex Com" to do. On that occasion, Peccei persuaded him to remain, but in the wake of the extravaganza in Guanajuata, CLW decided that he had had enough. En route home, he drafted a confidential letter for Peccei, detailing his reasons for quitting not only the "Ex Com" but also the club itself.

The resignation letter makes interesting reading, illuminating as it does the philosophical concepts that directed Carroll's selection, from among the world's many difficulties, of those that
he believed could be tackled effectively. Alexander King recalls hearing it said in Club of Rome circles that Wilson tended to be "perhaps too much of an establishment man,"--a judgment, one suspects, that Carroll himself would have cheerfully endorsed.

Carroll, says Bill Martin, was "Eastern Establishment to the core," numbering among his close associates and correspondents well-known exemplars of it, such as Nelson Rockefeller, McGeorge Bundy, and Clare Booth Luce. Another of CLW's co-workers in the energy workshop days, Steven Carhart, goes further. Speaking in the light of perceptions acquired as an activist in the anti-establishment student movements of the 1960s, Carhart characterizes Carroll's major activities as those of a "global gamesman," laboring in the service of the well-fed and the well-heeled.

Influenced no doubt by the social justice teachings of the Catholic Church, Aurelio Peccei favored direct assistance to the under-developed nations--programs aimed at a redistribution of material goods and at the creation of international bodies capable of effecting such changes. Carroll regarded programs of this sort as exercises in futility. He had no patience with what he considered impossible causes; never did he undertake a project until he felt reasonably certain that it rested on an idea whose time had come and that he could pull it off. Several of the factors in his decision to leave the Club of Rome, he wrote Peccei, (arise) because my own interests and priorities are becoming widely divergent from yours. After devoting much time in the 1960s to the problems and possibilities of the Third World my own interests now center on the advanced industrialized
countries. These countries face major problems. Their potential capabilities to solve these problems are very substantial and on a wholly different level from the capabilities of the Third World... Much needs to be done to identify and assess such problems and to develop a basis for action by individual nations--actions taken with an awareness and understanding of major features of the global scene and the impacts of their actions on others and vice versa. This is what the Workshop on Alternative Energy Strategies is all about and why the Participants are drawn principally from the highly industrialized nations which use 80% of the energy consumed in the Free World... I believe that the manner and speed with which the industrialized countries solve their problems will profoundly affect the whole world and will have a major impact on the limited choices available to the Third World.

Another area in which our views diverge... concerns the nation state. I believe it is the most durable and viable feature of the global scene. It is the only decision-making unit which combines the political capacity for action and enforcement or implementation of decisions taken. The absence of any significant national boundary change since the partition of India in 1947 is evidence of the durability of national territories. The emergence of 60-70 new sovereign nations from the territories of former colonial empires is further evidence that however arbitrary the action was which defined these boundaries... They define the new sovereign states which have joined the United Nations--a club of equals regardless of size...
or power—Chad and China, Jamaica and Japan, Mexico and the Maldive Islands. Never has there been a system which provided such protection for the small and weak—a place where any member attacked by another can appeal to the whole world for help. It is also a matchless means for the education of people from all these countries through participation in as many U.N. activities as a state can afford.

The system also serves as a powerful deterrent to mergers of states—however rational such mergers might be on economic grounds. Who is going to give up the perquisites and recognition of a seat in the U.N., the right to any office and service on the many committees and organs of the U.N.? And in exchange for what—a new colonial status with subjection by neighbors who might very well be much worse than the ex-colonial masters? I wouldn't choose such a path and evidently my views are shared by the leaders of about 140 states.

Another era of divergence in our views concerns supra-national institutions. If they had real power I see no reason to expect that they would offer any protection against despotism and tyranny. I simply cannot visualize the fading away of national states and the emergence of wise, benign and unselfish global political entities.

Both WAES and WOCOL can be cited as examples of the importance that Carroll attached to the factor of timing. In 1973 when he decided to undertake the Workshop Alternative Energy Strategies its subject was very much the "in" thing. To quote his friend Sir
William Hawthorne, Master of Churchill College at the University of Cambridge, "energy was the bandwagon in those days and everyone who knew anything at all about it was getting on."

That the field was crowded was of no moment to CLW. As Bill Martin has observed, one of "the qualities Carroll brought to his projects was a simply incredible confidence." Martin recalls Carroll's amused reaction when in the early 1980's some of his associates questioned his qualifications for conducting the last of his projects, the European Security Study. What in the world, they wondered, did a lifelong civilian know about military affairs? "Plenty." said Carroll, pointing out that as Vannevar Bush's alter ego in the Office of Scientific Research and Development he had helped run one of the greatest weapons-development programs in history and that his labors as General Manager of the Atomic Energy Commission were not unconnected with such matters. Neither were they unconnected with energy, and in the spring of 1973 Wilson was pushing his plans for WAES in the unruffled manner, as Mark Twain might have put it, of a Christian at the poker table with four aces up his sleeve.

WAES was the most ambitious of his projects to date. Ascertaining the sources of energy available to the inhabitants of what the final report called WOCA (the World Outside Communist Areas) and projecting the balance between supply and demand likely to obtain during the remaining years of the twentieth century—these were goals that could not be achieved, like those of SCEP and SMIC, in a few weeks. WAES would take months (two and a half years, as it turned out), and this factor, the time
requirement, constituted only one of the problems CLW was called on to resolve as little by little, he constructed for his first energy workshop a *modus operandi* that he believed would work.

As he made clear in a letter to a friend in New York, it was his intention to see to it that all of the persons selected as "Participants" in the undertaking came from the upper echelons of their professions. "Each of them," he wrote, "must have two qualifications: he must be an expert on some aspect of the [energy] problem, and he must be active in some strategy-making industry or government agency in his own country--so that once the participants as a whole have agreed upon a solution, each of them, because of the influence he exerts on his home grounds, can help put the solution in action there." Individuals working on the high levels Carroll had in mind would not have time to collect and interpret the mass of statistics that an investigation of the global energy situation demanded. How then was this aspect of the enterprise to be handled?

By the time of his Elihu Root lectures in spring 1973 Carroll had found an answer to that question. Each Participant would be asked to provide, at his expense, one or several working assistants. In his talk before the Council on Foreign Relations, CLW referred to these members of the project as "Aides," but soon thereafter he adopted another designation. He had not forgotten how, in the early days of the African program, some governments had refused to hire persons called "Interns," only to change their minds when the same persons became "Fellows." By mid-summer "Aides" had become "Associates," and Carroll had perfected for the project a two-tiered structure, a unique mechanism that he would use for both
WAES and WOCOL. During the course of each project, the Associates would assemble at frequent intervals, meanwhile working more or less continuously to accumulate the necessary data. The Participants, meeting less frequently, would review the work done by the Associates, deriving from it the assumptions and proposals to be printed in the final report.

For WAES, as for all his projects, one of Carroll's first tasks was to raise funds, and late summer found him reporting to the president of MIT, Jerome B. Wiesner, that this effort was going well. For Wiesner's information he listed the foundation people with whom he had talked or corresponded. "I don't know," he wrote, "whether the correct procedure is for a note to go from you to each of these people saying the [project]...will receive your support." Wiesner's reply to this request suggests that he would have liked Carroll's plan more had Carroll's fund raising tactics been less aggressive. "I would be pleased to send notes where appropriate," he informed Wilson, adding, however, that "in one or two cases there may be a problem. At Sloan Foundation, for example, there are already so many M.I.T. requests that [an official there]....has asked me to set priorities for M.I.T. and I have done that.... There may also be a conflict at General Motors where the [M.I.T.] Energy Laboratory has a large and vital proposal before Mr. [Richard C.] Gerstenberg [a GM director]."

In addition, the Institute president expressed the hope that Wilson would limit himself as much as possible to "officer grants," those
small enough for a foundation official to make without getting the approval of his board. In fact, Carroll was partial to such transactions, reasoning that the way to insure his independence was to obtain small sums from several foundations instead of a large amount from one.

[ UNDER REVIEW ], Carroll pushed on. Mid-October found him travelling around the world, looking for "leading personalities" to act as Participants in WAES—a search that during the ensuing months took him on further international rambles. Determined to bring as many viewpoints as possible to the deliberations, he included three of the OPEC nations in his travels, hoping to procure at least one Participant from each of them. In two of these countries, Saudi Arabia and Indonesia, his efforts were unavailing, but during a stop in Teheran he persuaded Khodadad Farmanfarmaian, chairman of the central bank of that OPEC nation, to join the project—and by the fall of 1973 the "WAES team," to use Carroll's term, was complete.

On it were thirty-four Participants and forty Associates from fifteen countries. Among the American Participants were Gerstenberg of General Motors; Thornton F. Bradshaw, president of Atlantic Richfield Corporation; and John T. Connor, chairman of the board of Allied Chemical Corporation. Among the English Participants were Robert Belgrave, policy adviser to the board of British Petroleum Company, Ltd., and Sir William Hawthorne of Cambridge University. Japan's delegation included Saburo Okita, president of his country's Overseas Economic Corporation Fund; that of Canada, Maurice Strong, then chairman of Petro-Canada; with Farmanfarmaian speaking, as it
were, for the thirteen OPEC nations. The administrative apparatus consisted of the three-man program staff headed by Bob Greene, two research assistants, a secretarial group working out of offices at MIT, and another such group in Europe. On an ad hoc basis, a number of individuals, Senator Henry M. Jackson of Washington state and public relations man Jim Nichols among them, functioned as consultants.

The Workshop on Alternative Energy Strategies was almost over when Benjamin H. Read of the German Marshall Fund of the United States wrote to convey "his admiration for your [Carroll's] successful management" of an audacious undertaking. "I do not know of anyone else," wrote Read, "who could have done it. I am most hopeful that you will write something on the process itself, which needs replication in many other fields."14

Although Carroll never drafted a formal exposition of his project-making procedures, the manner in which he originated and directed WAES gives us an idea of what they were.

He began as a rule by considering a handful of likely subjects, gradually eliminating those that struck him as untimely in that there was no widespread public interest in them, or impossible in that the "arithmetic" of the intricacies involved indicated that nothing useful could be done about them. Having chosen a subject, he asked himself three questions: what do we know about this problem? what don't we know? and what steps must we take to uncover all we can know? Carroll's objective at this stage of the process was to crystalize in his own mind the propositions that the forthcoming workshop would produce. "Never," says Bill Martin, "did
Carroll begin a project until he knew what its conclusions were going to be." He operated on the premise that only when a person knows his destination can he map out a route that will take him there. Virtually all the assumptions and recommendations advanced in the final report of WAES can be read in the article "A Plan for Energy Independence" that CLW published in Foreign Affairs fifteen months before the Workshop on Alternative Energy Strategies began.

Even as Carroll dug into the subject—and it was a maxim with him never to move on any matter until he had mastered it—he was evolving in his head the organizational mechanism to be used; in the case of WAES and WOCOL the Participants/Associates combination and in the case of ESECS, a steering committee to sort out the topics to be covered and a body of Participants to cover them.

Subject and mechanics in place, Carroll moved on to what he called the "marketing phase"—an often protracted period, marked by intensive travel and letter-writing, in an effort to sell the idea to those whose expertise and influence he must have if the embryo he had fathered were to be carried to term. Bill Martin attributes the success which attended Carroll Wilson-qua-travelling salesman to his devotion to what he called "networking." This was a subject on which CWL often waxed eloquent. "I remember his talking about it once at length, says Martin. 'That's fine, Bill,' he told me, 'but if you go along with me your life will never be the same again. For one thing, you'll have no neighbors. You won't need them, you won't want them. What you'll have is a network of notable people doing things all over the world—people you can drop in on for breakfast or cocktails as casually and frequently as another man might drop in.
on the folks next door. That network will protect you; it will open up opportunities for you. So be good to it, Bill. Cultivate it.

Carroll cultivated his assiduously. His unending traverses of Europe and his not infrequent descents on Japan and other Asiatic premises were broken by innumerable calls on innumerable notables. In England there were many people to break bread with, among them Sir William Hawthorne, Sir Alan Cottrell, Lord Rothschild, and Baroness Jackson of Lodsworth (Barbara Ward). On the continent there were many others: in Paris, Alexander King and Hilliard Roderick; in Oslo, Richard Major, director of the Norwegian National Research Council; in Milan, Professor Sergio Vassca of the Universita L. Bocconi; and in Moscow, Professor Jerman M. Givishiani, high-ranking scientist and son-in-law of Alexis N. Kosygin, the Soviet Premier. Moving eastward, there were still others: Minister of State Hisan M. Nazer of Saudi Arabia, Farmanfarmain of Iran, and Okita of Japan among them.

It was a rare day when Carroll failed to write half a dozen letters to the members of his far-flung network. His practice was to dictate these into a tape recorder, and judging from the handwritten notes he sometimes utilized to marshall his thoughts, the originals of them were a rabbit-warren of non-stop sentences and free-wheeling intercalations. "Poor Roberta!" says Bill Martin of Mrs. Roberta Ferland of Seekonk, Carroll's personal secretary, whose task it was to bring order out of this linguistic chaos.

When in person or by mail or both, Carroll set out to snag the top names in the energy field for WAES, he refused to take no for an answer. If one visit or one letter didn't work, he made more visits.
and dictated more letters. "In short," says Martin "he made a pest of himself," with the result that he got the people he wanted.

Once WAES was started, Carroll's job was that of the coordinator of all activities. (Joe Perkowski is given to speaking of him as the "Master Coordinator.") He developed agendas for the meetings, saw to it that the paperwork was done well in advance, and arranged for its swift distribution when the Participants or the Associates or the two groups together--assembled. An eighty-seven page sheaf of notes, inscribed to himself in his unruly scrawl and labeled "WAES beginnings," bespeaks a phenomenal attention to detail on his part. He made certain that cars were waiting at airports to bear the members of the project to the meeting places, that their accommodations were first class, that the meals were diversified and interesting, and that all necessary equipment--projectors, screens, loudspeakers, and the like--was on hand. He worked the young men and women on his staff hard. Too hard, think Elizabeth and David Dodson Gray. They also think that had CLW's aides told him that his demands were often inhuman, he'd have done something about them. "After all," says Liz, "Carroll was a reasonable man, but none of those youngsters ever dreamed of talking back to him about anything. In their eyes he was the great man, the law-giver, the guru. When he said go, they went; and when he said stop, they stopped. What Carroll wanted, Carroll got."

With the publication on 16 May 1977 of the final WAES report--Energy: Global Prospects, 1985-2000 CLW initiated a whirlwind effort, guided by Jim Nichols as the project's public relations consultant and known as "the follow-up."
To watch CLW during this final phase of the proceedings is to see him here today and there tomorrow. In late May we catch him in London, being interviewed on the British Broadcast Company's worldwide "Newsday" program and delivering a lecture on the WAES findings under the joint auspices of the Fellowship of Engineering and the Royal Society. On 1 June we discover him in Washington, talking about the results of the workshop at a hearing of the Ways and Means Committee of the United States House of Representatives. Later that month we see him first in Tokyo and then in Osaka, discussing the energy situation with "leading....business leaders" and the Prime Minister of Japan. On 19 July we find him back in London, escorting Mary to a Royal Garden Party at Buckingham and presenting a copy of the WAES report to HRH Prince Philip--"a specially bound copy" that, according to Mary, her husband carried to the festivities in the "crummiest looking canvas bag you ever beheld." And on 27 June we find him at MIT conducting a seminar on WAES attended by 140 representatives of the companies belonging to the Institute's Industrial Liaison Program.'

Expeditiously as WAES was handled, there were hitches. Most of them were financial. Although services provided by the Associates were paid for by their respective Participants, Carroll and his staff had to raise approximately a million and a quarter dollars to keep the workshop going. Frequently expenditures outran funds on hand, forcing Carroll and Bob Greene to hustle around New York in search of money. Numerous begging letters went into CLW's tape recorder. In one of these, we find him offering to take care of any "remaining uncovered balance" out of his own pocket.'
another, he notes that at a recent meeting of the project "we talked about the 'oil gap.' You might also recall that...at the Meeting several months ago (we talked) about...the 'WAES Financial Gap." On 6 October 1974 the "Financial Gap" stood at $500,000. On 10 November 1977 it was down to $114,288." And on 3 March 1978, Carroll was able at last to report that the gap was "closed."

Consistent with the global nature of WAES, Carroll arranged for its fourteen meetings to be held in various parts of the world. His "WAES beginnings" notes show that for a time he considered siting the opening session in Japan, only to conclude that a program bearing the imprimatur of MIT should begin in the vicinity of the Institute. "1st meeting most important," he was scribbling to himself in March 1974. "Boston/Easy All people have reasons to come to US- MIT atmosphere--if held elsewhere would raise questions." He was in London when these thoughts were jotted down. A few days later, having gone on to Brussels, "cable from Greene," he was writing, 'ok New Seabury - Oct."

His reference was to the Inn and Country Club of New Seabury, a pleasantly relaxed condominium resort on Cape Cod, Massachusetts, where for ten days beginning 2 October 1974, the Participants and Associates of WAES gathered for their conference.

Bill Martin describes himself as "unlikely to forget that meeting as long as I live." New Seabury itself, according to Martin, has "an out of the world quality about it," and the same air of strangeness prevailed in the big room in the inn as the members of the project filed in to hear CLW's introductory remarks. This
conference was a get-acquainted affair for men who'd come together from all points of the compass, and many of them had no clear idea of why they were there. All they knew was that on two or three occasions Carroll Wilson had visited them. He'd said something about needing their assistance to do something about energy. Then he'd invited them to this wild-looking place, and because Carroll was a good fellow and because he was known for doing good things they'd come, assuming that once there they'd find out what he was up to.

"They found out fast." says Martin. "Well before that meeting ended, they not only knew what WAES was all about, they also knew that it was deserving of their time and attention. Carroll saw to that."

Another comment on Carroll's qualities as a leader is provided by Paul Basile, Martin's side kick on the workshop program staff. In Basile's opinion, what made WAES go was that nearly everyone connected with it "pitched in." This was even true of the Participants, heavy as their other responsibilities were. Most of them were not content simply to attend meetings. In between meetings, in their offices on the executive floor or in their book-lined studies, they did work for the project. "That was the magic of WAES," says Basile, "and Carroll was the source of it."

The first meeting of WAES ended on 12 October 1974 and for the next twenty-two months the "magic" endured. Then, in April 1976, as the members arrived in Cocuyoc, Mexico, for the ninth get together, WAES encountered a snag. On the agenda for the Cocuyoc session was an issue fraught with uncertainty, one that raised questions
more difficult to handle than any the Participants had tackled to
date. During the remaining years of the twentieth century, what
contribution could nuclear power be expected to make to the supply
of energy needed by the non-communist world? What was the future
for industrial plants set up to generate electricity from nuclear
fuel in view of the dangerous radioactive waste such installations
produced?

Liz and David Dodson Gray recall talking to Carroll about this
matter. Neither remembers when, only that it was soon after the two
of them first met CLW in the early 1970's. They reminded him that
during his days with the Atomic Energy Commission, that organization
made no effort to handle the problem of nuclear waste.

"How come?" Liz wanted to know. "There you were, working in
that kitchen all those years, and all the time the dishes were
piling up in the sink. How come?"

Carroll answered. "I don't know why. I guess it was because
we were doing other things that were more exciting. After all,
nobody ever got the Nobel Prize for doing the dishes."

When in 1973 he sat down to write the article "A Plan for
Energy Independence" for Foreign Affairs, those dirty dishes were
obviously on his mind. He did not rule out the nuclear option, but
he devoted considerable wordage to the difficulties it entailed. He
saw no substantial future for it unless all nuclear plants were put
underground, and in the near future, the failure of most nations to
take that step would move him to conclude that the production of
energy by nuclear means called for the payment of a price higher
than mankind could afford."
As the members of WAES assembled at Cocuyoc, Mexico, in the spring of 1976 it was clear that they must deal with an issue on which they were deeply split. At one end of the gamut of opinion were several nuclear enthusiasts, such as Walter C. Cisler, retired chairman of the board of Detroit Edison Company; at the other end stood an anti-nuclear contingent consisting for the most part of environmentalists like Maurice Strong.

The Participants agreed to a statement that can be described as an elegant exercise in yes-and-then-again-no. Yes, it said, if the problems involved can be worked out, nuclear power can contribute greatly to the production of energy; no, those problems have not yet been fully conquered and must be attended to.
In the final WAES report this compromise stood out in stark contrast to the other conclusions advanced in its pages. All of these were couched in positive terms. What they said in essence was that the supply of oil available to the free world would "fail to meet increasing demand before the year 2000, most probably between 1985 and 1995;" and that the "change from a world economy dominated by oil" should be underway immediately as it would take from "5 to 15 years" to develop the various alternatives to oil described in the report.

Such were the major predictions of the WAES report. No reader of the daily press needs to be told that as of this moment (1986) they do not appear to be working out. It is too soon, however, to dismiss them as invalid. "I believe," says Bill Martin, "that time will prove the WAES report to have been a creditable one."

To Carroll the most challenging of the conclusions propounded in the report was the assertion the "Coal has the potential to contribute substantially to future energy supplies." February 1977 witnessed the fourteenth and last meeting of the Workshop on Alternative Energy Strategies, and by February 1978 Carroll was making preparations for the World Coal Study, destined to be known as WOCOL at the time of its conclusion two years later. In the eyes of its creator, WOCOL was more than a project. It was a crusade—an effort by a man, disenchanted with the possibilities of nuclear power, to demonstrate that coal could provide much of the world's "additional energy needs" during the remaining years of the twentieth century.\textsuperscript{22}
For WOCOL Carroll lined up thirty-eight Participants and forty-one Associates from sixteen countries, and in October 1978 both groups gathered at Aspen, Colorado, for the first of what were to be five week-long working sessions in scattered sections of the world. By this time the two young men who had served WAES as its technical directors were no longer available. Bill Martin had taken a position with the International Energy Agency in Paris. Paul Basile had joined the International Institute for Applied Systems Analysis in Luxenburg, Austria, and Carroll was looking for someone to take their place on the staff of WOCOL.

It so happened that during the WAES years J. Michael Gallagher, a young engineer with the Bechtel Corporation in San Francisco, had sent CLW a couple of studies of the international coal situation. Carroll, impressed by both documents, was delighted when in the spring of 1978 Gallagher called on him at MIT, thus permitting the two men to get acquainted. He was equally pleased when Mike showed up among the Associates at the first WOCOL session in Colorado. Two weeks thereafter Carroll was submitting a proposal to Bechtel Corporation.

"It was a very bold proposal," Mike has remarked. Carroll not only asked Bechtel to lend Gallagher to WOCOL for the duration of the project, but also suggested that the corporation shoulder all the expenses involved. When Bechtel balked at these terms, Carroll submitted a revised proposition, stating that if the corporation would underwrite Gallagher's re-location costs, MIT would take care of his Bechtel salary.

For the next three weeks, while the Bechtel officials weighed
Carroll's new terms, Mike was on tenderhooks. "My heart was set on having that job," he says; and fortunately for him, Carroll was determined to see that he got it. Every day found CLW on the phone, chatting with his friend W. Kenneth Davis, a Bechtel vice president and one of the WOCOL Participants. Carroll, as Mike put it, "knew all the tricks." During one of these phone conversations, for example, he brought up the name of Robert Seamans. Then dean of engineering at MIT, Seamans had recently returned to the Institute after a tour of duty in Washington as head of the Energy Research and Development Administration, a precursor of what is now the Department of Energy. "By the way," said Carroll to Davis during this talk, "Bob Seamans stands ready in the next hour to call Steve Bechtel, Jr., about this matter, if you think his doing so would be helpful." Perhaps that statement resonated in San Francisco. At any rate, on 2 February 1979 Bechtel agreed to send Gallagher to MIT to provide for WOCOL the technical supervision that Martin and Basile had provided for WAES.

Today it pleases Mike Gallagher to talk about his WOCOL experiences. "Those were the most exciting years of my life," he says; and his account of his last chore for the World Coal Study—a trip to Washington with Carroll one morning in the late spring of 1980—offers an instructive sidelight on CLW qua-public-relations man.

The purpose of their journey was to brief Edward R. Fried of the National Security Council on the findings of the World Coal Study—a series of conclusions soon to be published in a book entitled Coal—Bridge to the Future.23 On the plane carrying
them to the national capital, the conversation revolved around the 1980 economic summit, to be attended by President Jimmy Carter and the leaders of other major industrial nations and scheduled to convene in Venice at mid-summer.

"The thing about the upcoming economic summit," Mike remembers Carroll saying, "is that Carter's going to have to discuss energy. That tells us what we've got to do this morning. We've got to persuade Ed Fried to advise Carter, when he gets to Venice, to stress coal as a solution to the energy dilemma. Now, my guess is that Ed Fried's a busy man. He won't want an harangue from us on all the data that's gone into the WOCOL findings. What he'll want is a nifty slogan that he can pass on to the President: something that encapsulates the energy situation in a few words, something pizzazzy."

Mike found some old envelopes in a coat pocket and spent the remainder of the flight scribbling on the backs of them, "trying to be Pizzazzy." But it was only after they reached Washington and were breakfasting together at the Cosmos Club that a light flashed in the younger man's head. By this time he'd run out of space on his envelopes. Grabbing a napkin he indited the idea there and shoved it across the table. Carroll read it, smiled, and jumped to his feet. "Perfect," he proclaimed, and off the two of them went to the west wing of the White House.

There they got a surprise. Ed Fried is a scholar. Before they could present Mike's perfect idea, Fried insisted on hearing a chapter-and-verse recital of the scientific underpinnings of the WOCOL findings. Only when these data had been conveyed, did Carroll
get a chance to tell Fried about Mike's "Pizzazzy" slogan. What Mike had suggested was that Fried persuade the president, when he sat down with his peers in Venice, to ask them to call for a "tripling" of coal production in their countries by 1990.

Fried was not unimpressed. "The only thing that bothers me," he said "is that word 'tripling.' That's too much to ask."

"Doubling then!" cried Carroll, and Fried nodded.

A few weeks later, on 12 May, Carroll was at the White House again, this time in the Oval Office presenting a copy of Coal--Bridge to the Future to Jimmy Carter. Another few weeks later, on 22 and 23 June, the President and six other heads of state gathered in Venice for the annual economic summit. And on 24 June the New York Times covered the event under a top-of-the-front-page headline reading "U.S. and Allies Vow to Cut Oil imports and Use More Coal."

WOCOL had become front-page news around the world, and in seven countries governments were looking for ways of increasing the production of coal.
By 1954 when Carroll and Mary Wilson left the Washington area for the last time and moved to the first of their two homes on Jacobs Hill in Seekonk, Massachusetts, all their children were on hand, First-born Diana was 15 that year, Rosemary 12, Paul Carroll 10, and Barbara Colby 7.

Today, the younger Wilsons, all married, live hither and yon across the continent.

To Diana and her husband, Paul (Skip) Hoven, and to their teen-age daughters, Colby and Dana, home is an island called Vashon in Washington state's Puget Sound, a short ferry ride from Seattle and Takoma. Their house, bought in the late 1970's with an assist from Carroll, provides a view of Mount Rainier and the tops of the Cascade Mountains in the distance. It overhangs a cliff and both mother Wilson and brother Paul expect it to drop into the Sound momentarily, a prospect to which Diana and Skip would seem to be cheerfully indifferent. Theirs has the earmarks of a happy union. "And a happy-go-luck one too," grumbles Paul, shaking his head as he recounts an attempt by the Hovens in years past to run a bar and nightclub on their own—a venture that collapsed, according to Paul, because the young entrepreneurs failed to realize that if it costs fifteen cents to shove a glass of beer across a counter you can't make a profit if you sell it for ten.

[ UNDER REVIEW ]
[ UNDER REVIEW ] Skip earns a good salary as a supervisor of production for K-2 Corporation, a ski-making outfit, and Diana supplements the family income by part-time teaching and tutoring and by driving a school bus.

Married in 1975, Rosemary and Italian-born Franco Taminini occupy a sixteen-room house on an expensive-looking side street of Watertown, Massachusetts. Rosemary is a practicing attorney, Franco a combustion engineer with Factory Research Mutual. There is much about Rosemary that puts one in mind of her mother: the regal bearing, the habit of stressing a point by a sharp elevation of her head. There is much that speaks of her father too: a confident and business-like demeanor, the air of a woman in command of her life, as witness an arrangement negotiated with her Boston law firm that allows her to spend the weekday hours after 2 p.m. at home, looking after Jeremy and Vanessa, the Tamininis' small children.

Diana, in a reminiscent mood, credits Rosemary with being the one of the children most likely to be helpful around the house. "I wasn't," she confesses. "I know that I wasn't what Daddy wished me to be in many ways. I didn't take the leadership-management-caretaking responsibilities of the eldest child. I pushed them off on Rosemary." Small wonder that when persons in a position to say are asked which of the Wilson progeny seems to be most like Carroll, the answer is always Rosemary.

Paul met Bonny Bouck of Albany, New York, for the first time in Boston in 1969. Paul was coaching the rowing team at MIT and Bonny was in a managerial training program at Filene's, the big department store. One of Bonny's roommates was dating Paul's roommate, and this young lady had invited her boyfriend to dinner and had suggested that
he bring Paul. But at the last minute, everything unravelled. Bonny's roommate was called away and her date couldn't make it with the result that Paul was the only guest and Bonny his inadvertent hostess. "He liked my cooking," says Bonny, and on 22 May 1971 they were married.

Today they reside on a twenty-two acre farm near Fairfield, Virginia. Bonny, after several years as the director of finance for a county school system, is currently working on a master's degree in education at the University of Virginia. Paul teaches at Southern Seminary Junior College, a private school for girls at nearby Buena Vista. His subject, computer science, marks an interesting departure for a man who has two published books behind him—*Chrome Dreams: Automobile Styling since 1893*, issued in 1976, and *Modern Rowing*, in 1969—and whose academic background is in literature: a BA from Harvard, a year of study in English and the fine arts at Cambridge (where he pulled an oar on the university's best rowing crew), and a Ph.D. from the University of Virginia. How did he effect the transition? Easily, says Bonny. Provided with a computer and word processor by the National Endowment for the Humanities, as part of a grant covering the writing of a book on "the creative process as exemplified in the invention...of the sewing machine," Paul, good at mathematics like his father before him, quickly mastered the underlying technicalities.

At the Fairfield farm one hears the patter of little feet only when baby-toting relatives arrive. "From the start," says Paul, "Bonny and I decided not to devote our time to raising kids"—a statement, one suspects, not unconnected with his memories of a
childhood under the conscientious but sometimes chilling tutelage of Carroll and Mary Wilson.

Barbara has had two husbands. Number one, encountered during her student days in Europe, was a young Spaniard named Luis Ramon Valls Verdejo. Migrating to the United States with his bride-to-be on what is called a "fiancée visa," Luis realized soon after the wedding that the American way was not for him. Home to Spain he sped; a divorce followed, and in 1979 Barbara became the wife of Michael F. Luck, one-time president of the Rutgers University Foundation and for five years a senior vice president for development and public affairs at Wayne State University. These days the Lucks and Jonathan, their four-year-old son, live on an eleven and a half-acre farm near Allentown, Pennsylvania, where Michael works as vice president in charge of fund raising for HealthEast, a recently established medical research and services organization. In addition to caring for her own boy, Barbara has helped rear two older youngsters, Sean and Holly, her husband's children by a previous marriage.

Bill Martin recalls meeting Barbara once. "She was so bouncy!" he exclaims, finding it hard even in retrospect to reconcile her easy-going manner with her father's rarely relaxed rigidity. Paul regards her as the "rebel" of the family. "At any rate, she's the one who works at it," he says. No argument comes from Barbara, who admits relishing the shock expressed by her parents when in the 1960's they discovered that she was living with a man in Boston. For Mary, the product of an upper-class English upbringing, it was a disconcerting revelation. Nor was it easy on Carroll, man of the world though he so literally was. He called Barbara's behavior "abnormal" and insisted
that she see a psychiatrist. She agreed to do so for six months, at
which time she pronounced the therapist "unsympathetic,
uncommunicative, and unhelpful," and resumed living her life without
benefit of Freud.

All of which leaves only one other person to be considered:
Olivia Barstow, now Mrs. Christopher Stewart-Smith of Buckinghamshire
in England, who lived for a year with the Wilsons in Seekonk and whom
Carroll thereafter referred to as "my borrowed daughter." Olivia's
mother and Mary had been classmates at an English girls' school and
when the Wilsons invited 15-year-old Olivia to America, she was
delighted. "I don't know why they extended this wonderful
invitation...," she writes, "perhaps they thought I might partially
fill the painful gap left by the departure of their favorite daughter
Rosemary to boarding school... for the first time." To which Olivia
adds, in brackets, that "Naturally" the Wilsons were "much too
civilized to have favorites among their daughters but Rosemary
(was)... always... much valued even as a young girl." Paul Wilson
remembers Olivia as one of the few persons with whom CLW "let down his
hair," and Barbara contends that the "borrowed daughter" enjoyed more
attention from her father than "any of us."

Olivia sums up her year with the Wilsons as "Lord what fun it
was!" and her written impressions of Carroll based in part on their
meetings in later years are a chrestomathy of praise. She calls him
one of the "least self-important men I have ever known," pointing out
that "in spite of arranging to be extremely busy with truly important
schemes..., "he had a really nice way of maximising one's
accomplishments so as to encourage... self confidence;" and that it was
"typical of him to spend an evening concentrating on how to galvanise me into effective action rather than regaling me with the really interesting things he (was) engaged on."³

The younger Wilsons' recollection of CLW as a companion and a parent are not so exuberant. They range from bittersweet to critical.

"Daddy travelled and travelled," says Rosemary. And Diana was given to understand "from an early age we had to share him with the world because he was special." That dawning realization, she says, left her "with a conflict inside. I was extremely proud of him but I longed for him to belong to us a little more.... I knew he loved me because so many things he did reflected it but he wasn't good at expressing the emotions I wanted to hear so he and I were often separated...."⁴

Barbara, looking back on her early years, describes her father's special-ness as extending to the whole family and "setting us apart in a way that was uncomfortable when we were kids." The burden of her plaint is that the Wilsons' neighbors were of the community in that they went to church and belonged to clubs "whereas we didn't and that made us different."

If there were times when the childrens' parents ignored the neighbors, there were other times when they worked with them. Keith F. Johnson, a reporter for the Providence Journal in the late 1960's, became aware of Carroll and Mary for the first time at a gathering of citizens in Seekonk, called to debate a proposal to widen the main thoroughfare of the town. The discussion grew heated, and Johnson recalls Carroll getting to his feet to state "a moderate position which brought sense to the issue." Johnson's "initial impressions of
Mr. Wilson were that he was stuffy and arrogant." But "I was wrong," he admits now. "I found that he was aloof but exceedingly friendly when one got to know him."5

It is interesting to learn from Johnson that on one occasion Carroll even invaded the Seekonk political arena. In the late 1960's the town was overwhelmingly Republican and the local Democrats were desperately seeking a candidate for a seat on the school council (Massachusetts calls its school boards councils). CLW thought of himself as a Democrat, although Keith Johnson's term for him--"a humanistic technocrat"--would seem closer to the mark. Busy though CLW was at the time--teaching at MIT and serving on committees of the UN in New York and the OECD in Paris--, he answered the call. Privately he confessed that he wouldn't have done so had there been "any chance" of his carrying the election. Publicly he ran a lively campaign repeatedly (and incorrectly) assuring the voters that "We are going to win."6

One of the younger Wilsons' happier memories is of father reading to them. He read well, they say, and enjoyed the stories as much as they did, if not more. One of his favorites was Gerald Durrell's antic My family and Other Animals. "He read that to us often," says Diana. "Even so, there were times when he had to put the book down because he was laughing too hard to go on." Both Carroll and Mary were partial to A.A. Milne's Winnie the Pooh, so much so that in their correspondence with one another she signed herself "Pooh" and he signed himself "T.O.L." (for Tons of Love), Rabbit," a reference to another of Milne's engaging critters. Mary appears to have selected the name, Pooh for herself "because Pooh was such a dumb old bear," Rabbit for her husband "because he had such a lot of relatives."
From Rosemary comes the story of the "talk-times." These exercises in father-child communication—for such CLW intended them to be—go back to when all the offspring were small and the Wilsons were living at "Westwind," the second of their homes in Wilton. Carroll was working in the New York offices of Climax Molybdenum and commuting by train. By the time he arrived home in the evening, usually about 7 o'clock, the children were in bed and his first action was to exchange a few words with each of them, going from room to room to do so. "He never asked the usual things," says Rosemary, "such as what games we'd been playing or with whom. He wanted no chatter from us. Instead we were to demonstrate that we'd learned something during the day, something useful." Rosemary can't remember how the other children handled these ordeals. She put a map of the world on her wall and when Daddy stepped in, she rattled off the names of whatever states or countries she'd added to her list since they last talked. And if she hadn't learned any that day? "Well," says Barbara, "I can remember Rosemary being absolutely petrified when her talk-time came around."

When Paul was 16 and Rosemary 18, the latter recalls, "our parents took the two of us with them to Europe, and when we reached Paris Daddy allowed Paul and me to rent a car and tour Yugoslavia and other places on our own. I think he thought of himself as saying, 'Look now, you're grown-up, you're free.' But we didn't feel that way because somehow he'd let us know how proud he was of the way we were going to handle this responsibility, and that awareness shadowed the whole trip." Talking of these matters now, Rosemary voices the conviction that her father never thought of himself as fastening mental and emotional clamps on his children or even realized that he was doing so.
Diana became aware of the clamps at an early age. It was a rule of the household, enforced by both parents, that the youngsters were not to express any thoughts of a negative or unpleasant nature. "We weren't even allowed to fuss with one another, Diana recalls. "Control yourself! Control yourself!" That, she says was the parental injunction, frequently sounded. Fortunately for Diana, most of the Wilson homes were in the countryside with the nearby woods providing a "refuge" where a restless child could pass the time "building tree houses and watching the birds."

"Believe me," Rosemary has remarked, "having Carroll Wilson for a father was a big order to fill." None of the children was more aware of this than Paul. For him, as the only son, it loomed the biggest; and on him, the mental and emotional clamps appear to have borne the hardest.

"As anyone who knew him can tell you," Paul says, "my father lived by one hard-and-fast principle, namely that no matter how things go, you must be upbeat about them. Pessimism can be self-fulfilling, he reasoned, so one should always opt for optimism." That, Paul adds, "is the rule we kids grew up under. No fears were permitted, no uncertainties; and pretty soon, if such things so much as crossed your mind, you felt as if you were committing a deadly sin. So you put them down. You hid them away somewhere, and you hoped they'd stay hidden."

In Paul's case they didn't. In his early twenties he confronted an emotional crisis. After four years of study at Harvard and one at Cambridge, he still had no idea of what he wished to do with his life. "I must buckle down now," he kept telling himself. "I must
buckle down to something." He'd taken a number of tests designed to identify his preferences. All they'd taught him was that he "preferred" just about everything which was to say, nothing. For a time he considered enrolling in the Harvard School of Business, but his parents discouraged that. They sensed that their son was not meant for the business world, and subsequently he came to the same conclusion. But what was he meant for?

"Those were rough days," Paul says. "Several matters troubled me. I was coaching the MIT rowing crew at the time and I realized that I'd become obsessive about the job. I was concentrating on it to the exclusion of everything else. Another thing was women. I was strongly attracted to them, but if a girl so much as gave me the eye, I walked the other way."

Finally he decided to confide in his parents. He described his behavior as that of a "neurotic" and expressed a desire to consult "a shrink." Their reaction to these statements? "About what you'd expect from any parents under the same circumstances," says Paul. "My mother had done her best to make stable and independent people of us, and here I was saying, 'Look, Ma, I'm a mess,' and I suppose she was wondering "How did I contribute to this?" But I'll say this for my parents. Once over their initial uneasiness, they swung in behind me in every way."

Psychoanalysis costs money and Carroll agreed to pay half. He suggested that Paul get his half from what is known in the family as the "Auntie Con Trust," a sum amounting to about $30,000, long since sequestered for the four Wilson children by one of Mary's English relatives. Carroll obtained the names of reputable therapists from
the family doctor and sent Paul to Wilton to spend time with Jim Nichols. Jim and his wife had had some experience with psychoanalysis and Paul remembers their suggestions as "terrific, to say nothing of their thoughtful support for what I had in mind." Along the line Paul made a discovery. His father approved of what he was doing. He told his son as much. "It'll round out your education," he said to Paul. "You'll learn things. Perhaps I shall too. I've never been good at getting in touch with my feelings—but there, I expect you've noticed that." Paul had indeed noticed it; what he hadn't noticed before was that his father was aware of his deficiencies in this regard. "It was good to know that he knew," says Paul.

Paul ended up under the care of a Dr. Lydia Dawes whom he describes as "A wonderful old woman and a student of Anna Freud." Two and a half years of analysis followed and Jim Nichols will tell you that they worked miracles. "You'd have to have known Paul before and after to appreciate the improvement," Nichols says. "Before the analysis, he was tense and unfocused; afterwards, relaxed and in control."

Following the receipt of his doctorate, Paul taught English for five years at Virginia Military Institute, leaving there when his application for tenure was denied and assuming his present teaching post in the fall of 1983. He and Bonny live quietly on their Virginia acres. No television disturbs the household calm and the nearest radio is in the barn. Nor does a newspaper plop on the front steps—a circumstance which informs us that a passion for unusual automobiles is not Paul Wilson's only legacy from his father.
Carroll seldom poked his head into the folds of a daily newspaper. Many of the legends about him still circulating along the Carroll Wilson network deal with his refusal to load his mind with information unconnected with his current efforts. There is the story of the time he arrived for a party at a friend's apartment in New York to find the assembled guests clustered around a television and filling the air with bleats of pleasure and pain. What were they looking at, he wondered; and on being told that they were watching the Redskins, "And who the hell are the Redskins?" he inquired. Barbara tells another. In the early 1970's newspapers were carrying long articles on Angela Davis, an avowed Communist recently dismissed from her professorship at a California University and under indictment in connection with the murder of a judge and two other men in a California courthouse. Carroll had just returned from a stay in the Soviet Union and Barbara remembers his telling her that the people in Russia were talking about "some American named Angela Davis" and did Barbara have any idea who this "Davis" might be.

Carroll kept himself as abreast of the news as he wished to be by reading the week-in-review sections of the *New York Sunday Times*. Watching him "process" those columns, a friend has written, was a sight to be remembered." Paul accomplishes the same end by perusing one of the weekly news magazines.

In his spare time, Paul writes. His current project is a novel. "It's not going too well," he confessed, "because fiction's new to me and I've a lot to learn about it." Occasionally he busies himself with what he and the family speak of as "Honest Paul's Used Cars." Visiting abroad, he sometimes picks up an extraordinary automobile and
ships it home where he refurbishes the engine and polishes the exterior to a solar glaze and sells it at a tidy profit. The winter of 1981 found him seeking a purchaser for a Rolls-Royce Corniche Convertible owned by his father's long-time friend, Mrs. Nelson (Happy) Rockefeller.

"As you can see by the rather tedious length of this letter" he was telling Carroll on 3 February, "I am excited about this project. I would appreciate it if you would communicate the main points of my proposal (regarding his fees etc. as an agent) to Mrs. Rockefeller. I must admit I am amazed that anyone should think of you in connection with the selling of anything; I laugh to think that you've been such close friends with the Ruebhausens for thirty or forty years and they still don't know that you can't be counted on to sell a used lawn mower for more than ten cents on the dollar. When you work out all the complex international ramifications of the coal trade (a reference to WOCOL, then in process), all the sensitive political issues and obscure economic side effects, all the issues, in short, that require real insight and intellectual force, and nothing remains but to haggle over some prices--STOP! Give me a call; 'tis not for nothing my mother is a horse-dealer."

By 1981 Paul could write forthrightly of what he had gained from his years with Dr. Dawes. His father had sent him a file of magazine articles dealing with the older man's many accomplishments. "One thing that struck me in reading these," Paul wrote him, ...was how completely different you are from me. It is a wonder that we enjoy each other's company so. As I looked at those pictures of you at the
age I am now I had mixed feelings. At age 37, you had vast responsibilities, and had gained power and public recognition.... At age 37 I am, by the public's standards, a nonentity. Under the circumstances, one might think I would regret not pursuing a course in life similar to yours. But the strongest feeling I have is relief that I did not. I am proud of you for having been the AEC general manager, but thank God I'm not: there is absolutely nothing in such a job that would give me satisfaction, and I was very fortunate to discover this before I'd spent a lot of time and effort trying to follow in your footsteps.  

While of course Dr. Dawes did a lot to make me comfortable with my decision to set out in a different direction, the decision itself really occurred earlier. I remember that, as a senior at Harvard, I still had the notion I might go to the Harvard Business School, then zip through the system the way someone like Mark Hoffman (one of CLW's most successful proteges) has, which would place me in the kind of world you have been in. As you may recall, I actually went for an interview and they were very kind and offered me financial aid and everything. But through an agonizing process, aided by the year in England, I gradually realized that I had no desire whatever to be the
boss of a big enterprise, nor to make a big fortune, nor to have "leverage" in the world of affairs, and I recognized that my goals were ultimately not those that could be reached through other people (as the goals of a manager always are by definition): The discovery that I could not bear the thought of the Harvard Business School and the life it would prepare me for was a very important one indeed.

At this point you might protest that I do have a business sense and enjoy buying and selling, investing and calculating profit and loss. But my way of doing this is worlds apart from the activity of a corporation man, even of the president, who has, perhaps the freest hand. He delegates, and I don't. Nearly all the pleasure of my car operations would be lost if I were directing other people to buy, fix, and sell them. I wouldn't mind farming out some of the grubbier restoration jobs, but basically my satisfaction comes from direct personal involvement. I would make a terrible manager, and I would hate being one....

Since I have no strong desire not to be one, I am likely to remain a nonentity in the public's view, but I don't wish to suggest that the public's view of me is my own. In the Renaissance, people debated the merits of the Life of Action and the
Life of Contemplation, usually ending in a draw. The two patterns resembled our different lives; there is much to be said for each. And each has its own rigorous standards: you have excelled according to the one, and I am doing my best with the other. The thing to remember is that they are different. I have gotten over feeling guilty or ashamed that I did not pursue the Life of Action, although I admire your success in it. I hope you are not disappointed that I went the other way. Carroll wasn’t sorry, or if he was he didn’t say so. "I never had any desire he wrote,

that you follow in my footsteps....

It is a source of great satisfaction to Mummy and me that each of you is very independent and self confident enough to choose your own pursuits. It makes it more fun for us to be with you because it brings on stage many more worlds.

Although our worlds are quite different--except for cars of course--you keep informed about the affairs of the world sufficiently to have an interest in my projects....

If there is sufficient personal pride and satisfaction in what you do public recognition is quite secondary. I have a lot of fun...doing my projects. That they lead to some public recognition of me is really not that important...
It is widespread attention and response to the products of ...SCEP, SMIC, WAES and WOCOL ...that is really important to me. This explains my ... spending the last year peddling coal all over the world....

I am proud of your achievements to date and expect to continue to be. Yours doesn't strike me as a Life of Contemplation which suggests to me a monk in a cell. It's a good life for you...?

People who saw much of Carroll often remark on how little he changed in appearance and manner with the passing years. As he moved through the closing decade of his life, his hair grayed and then silvered; but to the end his towering frame remained unencumbered, his swinging stride as swift and vigorous as ever, and his lineaments those of a fresh-faced young Irish priest.

He was not an extravagant man. The appraisal at the time of his death of the furnishings of his and Mary's home on Jacobs Hill farm in Seekonk came to $1,430! Obviously Carroll watched the pennies, save where a few cherished indulgences were concerned: classic automobiles for one, exquisite meals for another, elegant, though not necessarily costly, hotels for still another. Add to these avocations a short-lived interest in gliding--short-lived because the thought of their leader floating in air alarmed the members of the staff of the Workshop on Alternative Energy Strategies. Convinced that if Carroll fell so would WAES, they consulted with Mary, who quietly persuaded her husband to abandon his glider lessons and take up carriage-driving instead.¹⁰ Add also the country homes where CLW and Mary, who
quietly persuaded her husband to abandon his glider lessons and take up carriage-driving instead.10 Add also the country homes where CLW and Mary entertained the many celebrated people who had entertained them. In 1967 they built a vacation place for themselves amidst the spreading vineyards of the South of France. They called it Lou Callen, filled it with guests for several years, and sold it in 1975.11 Two years later they teamed up with Elting Morison and his wife Elizabeth to rent Michelmersh Court, an eighteenth-century Georgian country home in England, complete with butler and two Cordon Bleu girls in the kitchen. Here for a month beginning 6 July 1977, they entertained a stream of friends, including the Oscar Ruebhausens, the McGeorge Bundys, the James Fiskes, the David Langmuirs, and the Christopher Stewart-Smiths.12

"What Carroll thought worthwhile, he spent money on," says Hilliard Roderick, "but on the whole he was careful about such things." He bought most of his clothes through a mail-order house. Shopping he considered a waste of time, and to avoid it he wore the same outfits year in and year out. In the 1970's his sartorial pattern—blue suit, blue shirt and blue tie with white polka dots—epitomized a style popular with the college professors of an earlier and more conventional era.13 Even in Africa, according to John Glass, his only concession to the noonday swelter was to remove his blue jacket and replace his blue button-down with a sportshirt of the same hue.

His good health suffered few interruptions, none of a serious nature until the terrible illness that killed him. Occasionally his back gave him trouble, and he sought to prevent this by stashing a
small exercising machine in his luggage when he travelled. It
consisted of a wheel with handlebars. Stretched out on the floor,
face down, he would "pump" this contraption energetically.
Occasionally he experienced a bout of insomnia—at home, in hotel
rooms, anywhere, it would seem, except in the Ruebhausens' guest room
in New York. When these spells struck, he sat up in bed, turned on
the light, and devoured page after page of Samuel Chamberlain's travel
books, notably those describing the inns and restaurants of England
and the Continent where the cooking was exceptional. Noise bothered
him and on his unending jaunts he carried a pair of earplugs for use
at night.

He drank great quantities of water, always making sure when he
retired that there was a glass- or pitcher-full on his bedside table.
His consumption of livelier liquids was moderate; at a party anything
would do, whatever was offered, but his preference was Scotch and he
prided himself on his knowledge of the finer points of winemanship. A
smoker? for many years, yes: three packs a day until the Surgeon
General of the United States announced that smoking was a danger to
one's health. At that point, "Well" mused Carroll, "good doctor
should know what he's talking about," and quit.

His temperament was singularly even. Rosemary cannot remember
seeing her father angry. Mike Gallagher can remember seeing him
"grumpy," especially after a sleepless night, brought on when WOCOL,
like WAES before it encountered a "financial gap."

His relationship with his son raises a question in the mind of
Hilliard Roderick. Would Carroll's mentorship of a brood of bright
graduate students have been as ardent as it was if Paul had chosen to
follow in his father's footsteps? Certain it is that CLW's practices
as a guide and counsellor to the young were conspicuously paternal. What could more clearly exemplify this fact than to hear Bill Martin prefacing a description of his early days under CLW with the expression, "Now the way Carroll brought us up was--?" Bill Matthews has spoken not only of how Carroll "brought us up" but also of how, when he thought the time had come, "he'd point each of us in the direction of some demanding job by way of kicking us out of the nest."

For Paul Basile and Bill Martin life in the "Carroll Wilson world" began in the early 1970's when they enrolled in his Seminar on Strategies for Sustainable Growth. Both decided almost at once that here was the man they wanted to study and work under. Both did just that for several years, and after Carroll had pushed them "out of the nest" into responsible positions, he continued to be the person they turned to for advice and assistance whenever the time came to move to other positions.

To Basile, watching Carroll at work during the WAES years was in itself "an education." Carroll, he writes, was "highly creative and...a bit eccentric," but he was well organized and with the organization came a certain amount of routine. For example, throughout the period when I worked with him at MIT, he would catch the morning train (at Attleboro near Seekonk)..., arriving in the office about 9:35 in the morning. He would leave the office at about 4:25...to catch a subway and train back home. Carroll worked on the train (and)...almost every day at about 9:30 the door connecting his office and the office shared by Bill Martin and myself would open and there, filling the doorway, would be Carroll, hiking his pants and inhaling in the deep-chested way he did to say (alternately) Paul or
Bill... After which followed his inspiration resulting from that... day's train ride. This might be a sketch, or a list of points in his big accelerating handwriting, or a suddenly clarifying question about a troublesome and complex series of topics, or something entirely new and apparently unrelated to our previous efforts, requiring a desk-clearing new start. With Carroll one rapidly became an expert on many different subjects because, well, he relied on one."

Basile remembers Carroll beginning each WAES meeting in the same manner: "he would go around the room asking each person to contribute in a fairly directed way....he might ask for a report on progress in forecasting demand (for energy) to the year 2000, or he might ask each person to comment from his national perspective on the economic growth scenario (predictions) being proposed." And sooner or later, according to Basile, everyone did become involved. "A WAES participant," he notes, "didn't agree to the report just because he liked it, or because he paid for it, but because he did the work. It was no mean feat to bring diverse individuals to cooperate on complex projects, and Carroll's...capacity for pulling it off was greatly admired...."

Carroll was an "inveterate name-dropper," says Basile, adding, however, that "he did, in fact, traffic with kings and prime ministers" and that "he was a humble man, fundamentally, as evidenced by his...concern for other people." Indeed, according to Basile, Carroll devoted "much of his life" to helping others, to "having confidence" in them, and to getting the best out of them. Susan Leland, principal secretary for every project from WAES on, has spoken of how CLW went out of his way to see to it that those who worked for
him received recognition for their efforts. Basile also mentions this, pointing out that at the end of each session of WAES Carroll always called the entire staff into the meeting room "for a...sincere thank you."14

Bill Martin says Carroll was "simply the greatest man in the world." Among Martin's warm memories of his mentor, to be sure, is an incident that he admits puzzled him at the time and still does. One day during the WAES years, as the two of them were driving in the south of France, they saw there was an accident ahead and that someone had been hurt. Although some people had gathered and appeared to be caring for the injured person, Martin suggested that he and Carroll stop to see if they could be of help. CLW's reaction was prompt and brusque. He waved the suggestion aside, insisting instead that they turn back and take another route to their destination.

Throughout his adult life Carroll kept an eye open for novel industrial developments—ventures that struck him as "exciting" and as likely to bring something new and useful into existence. Paul remembers his father and some associates teaming up to devise a simpler and cheaper method for supplying bandaids to hospitals—only to discover that under some circumstances the better mousetrap tends to languish in the forest unnoticed. What they neglected to ascertain before they started was that the then prevailing bandaid-supply system, albeit costlier than theirs permitted a greater number of people to make money along the chain."15

Carroll wrote off this experience as a "failure of research" and moved on to other endeavors. One of them, the launching of the Millipore Corporation, (now of Bedford, Massachusetts) in 1954, was to
make him a wealthy man. Another, an eleven-year association with the Hitchiner Manufacturing Company (now of Milford, New Hampshire), gave him the satisfaction of being part of an organization built on technical innovations, including the application of a 5,000-year-old wax process, lost to view for centuries, to the casting of products that require a very close tolerance and that range from golf club heads and beer-barrel valves to automobile- and helicopter-parts. 16

Founded by John H. Bush, one of Vannevar’s sons, Millipore goes back to the development by the Germans during the Second World War of an exceedingly fine plastic-membrane filter for collecting bacteria from samples of water presumably damaged by the conflict. At war’s end the United States Army Corps of Engineers appropriated the process and requested the Lovell Chemical Company in Watertown, Massachusetts, to provide the corps with a specified quantity of the membrane. When Lovell fulfilled this obligation, Jack Bush, the engineer in charge of the project, arranged to buy the rights to the filter with the idea of "carrying it to commercial viability" by creating what is now the Millipore Corporation. CLW helped Bush find investors, put $5,000 of his own money into the firm, sat on the board of directors for ten years, and at the time of his death was the holder of 18,000 shares worth "on the order of $600,000 plus." 17

When in 1949 A. Fred Hitchiner, founder of the firm bearing his name, ran out of money, the family of George A. Morison of Peterborough, New Hampshire—father of CLW’s historian-friend Elting and of John H. Morison—, took it over with John H. as president and later chairman of the board. In the intervening years what began as a small brass foundry with forty people on its payroll had become a
sixty-million-dollar-a-year business with 12,000 employees. Carroll served on the Hitchiner board from 1971 until his death, at which time his fifteen shares in the company were worth $77,000, approximately fifteen times what he had paid for them.18

Carroll, it is plain, kept busy. For varying intervals he acted as a director, a trustee or an executive officer for three industrial firms, two scientific bodies, a small Boston group known as the World Peace Foundation, a bank, a hospital, and an art school. During portions of 1961 he spent three days a week in Washington, at the request of President John F. Kennedy, helping Sargent Shriver organize the Peace Corps, a movement that one of CLW’s friends has called a "poor man's Fellows in Africa." In the early 1970’s he helped to father the International Center of Insect Physiology and Ecology, a still flourishing research and teaching laboratory on the campus of the University of Nairobi in Nairobi, Kenya. In 1973, at the urging of his long-time friend Nelson Rockefeller, he became a member of Rockefeller’s Commission on Critical Choices for America, working on two of its panels: "Energy and Its Relationship to Ecology, Economics and World Stability," and "Food, Health, World Population, and the Quality of Life." When in 1977 President Carter ordered the Council on Environmental Quality to study possible environmental changes during the remainder of the century CLW advised the project on the subjects of quality and energy.19

September 1981 found Carroll pointing out, with perhaps more modesty than accuracy, that the diversity of his activities notwithstanding his was not a household name. "I hit the peak of public recognition 35 years ago (as General Manager of the AEC)," he
wrote Paul, "and have been sliding into obscurity ever since with an occasional blip like the Tyler prize."²⁰

In truth his receipt of the Tyler prize for 1981 was only the last and most noteworthy of the blips of recognition to come his way. Two honorary doctorates were bestowed on him, one by Williams College in 1947, the other by Worcester Polytechnic Institute in 1976. In 1948 His Britannic Majesty named him an Honorary Officer of the Civil Division of the Order of the British Empire for his "valuable services to the Allied Cause" in World War II, and during the same year President Truman conferred on him the Medal of Merit for his work with the Office of Scientific Research and Development.²¹

The John and Alice Tyler Ecology Prize, a $100,000 award established in 1973, is often referred to as the Nobel Prize of environmentalism. Its recipients include Maurice Strong (1973) and Rene Dubos (1975), whose pioneering research in the 1930's led to the development of antibiotics. Carroll's receipt of the prize was a recognition of his "unique process for involving leaders in industry and government...in global assessment." His acceptance speech during the awards banquet in the Grand Ballroom of the Intercontinental Hotel in Nairobi on the evening of 14 April 1982 was vintage Carroll Wilson. He discussed one of his favorite topics: the likelihood that in the years ahead the world will warm up owing to the "build-up" in the atmosphere of carbon dioxide from the "combustion of fossil fuels." How should the growers of cereal crops prepare for that possibility? By beginning at once, said CLW, to develop the kinds of seeds that can be cultivated and brought to fruition in climates different from those currently in effect.²²
Before Carroll relieved himself of these remarks, he gave birth to another of those legends that CLW admirers love to repeat. He was aware that an environmental buff named James Stewart had been chosen to make the presentation that evening—but selective-reader of the press that he was, that was the limit of his knowledge. When the movie star and his wife were brought across the ballroom for introductions, "Jimmy Stewart" said Carroll, taking the other man's hands. "There's something familiar about that name, but I hope you won't mind my asking, what do you do?" On being told that Stewart "made movies," Carroll allowed as how he didn't know much about "that business" and expressed the hope that Mr. Stewart would enlighten him. It's anybody's guess how much he learned about movie-making that evening, but it's clear from a letter written a few weeks later that by the end of it, CLW had co-opted the famous actor for the Carroll Wilson network. "En route back from Nairobi," he was writing to "Dear Jimmy on 26 June.

I stopped in Paris to explore the possible participation of the French in the European Security Study....I finished my work by lunch time and at two o'clock was entering the small movie theater on the rue de Ecoles...and with French subtitles here was that wonderful "Philadelphia Story," with you and Cary Grant and Katherine Hepburn....

Jerry Walker (Jerome B. Walker, Assistant Vice President for Academic Affairs, University of Southern California) has sent me...a list of your
75 or more films, which is a most impressive contribution to our period of history...

We had the first meeting of the Steering Group of the European Security Study last week and got off to an excellent start....A series of intensive workshops lie ahead over the next nine months....

Mary and I greatly enjoyed becoming acquainted with you and Gloria [Mrs. Stewart] and Kelly [Mrs. Alexander Harcourt, their daughter] and having that delightful day at Lake Naivasha.\textsuperscript{23}

The European Security Study--ESECS--was to be the last of Carroll Wilson's projects.
CHAPTER 11
THE LAST PROJECT

Members of the WOCOL staff remember their boss vowing on more than one occasion that "after this job's done, I'll never assume control responsibility for another like it." Nobody believed him. They knew Carroll Wilson too well. He thought in terms of projects. Let an international problem cross his mind, and the first question he asked himself was what kind of workshop could be organized to tackle it.

Years before the European Security Study (ESECS) materialized, many of the ideas with which it dealt were coursing through his correspondence with Clare Booth Luce. CLW and the brilliant author-politician encountered one another for the first time during a party at Nelson Rockefeller's New York townhouse in 1975. It was the beginning of an epistolary tete-a-tete replete with what Carroll called "dissertations" on the issues that excited them both.

"When we met at luncheon at the Cosmos Club," he was reminding "Dear Clare" in the summer of 1976, "I mentioned my interest in exploring some of the aspects of nuclear terrorism." There it was again, his conviction that mankind must not put itself in the position of relying for its survival on nuclear power in any shape. As the first General Manager of the Atomic Energy Commission, was he prodded to this stance by a sense of guilt? David and Elizabeth Dodson Gray think not. "Carroll wasn't into guilt," says David. "He wasn't wired that way. What moved him was a sense of responsibility, a feeling that he should do anything he could to
find non-nuclear solutions for the world's dilemmas." It was
Carroll's impression, he told Mrs. Luce, that students of the
nuclear scene were refusing to admit that a "post-proliferation
world" was in the making—a case of seeing the future the way they
wished it to be instead of the way it was going to be. At present,
he noted, "there are six or seven...nations that have some nuclear
weapons and maybe some means of delivery [but] there may be fourteen
in ten years and who knows how many in twenty...there is as much
plutonium moving around the world...and so many thousands of nuclear
weapons stashed here and there that the opportunities for diversion
of material or even the purloining of a few weapons will increase
and therefore it is time that we look at what the
[post-proliferation] world might be like."2

A year later, in another letter to Mrs. Luce,3 he was
outlining those aspects of the post-proliferation world at which the
specialists subsequently assembled to conduct ESECS would look. It
was common knowledge that the "conventionally-armed forces" of the
Soviet Union outnumbered those available to the members of NATO, the
North Atlantic Treaty Organization. It was also common knowledge
that recent years had witnessed marked improvement in the ability of
non-nuclear instruments of war to destroy ground forces, tanks,
armored vehicles and aircraft. Plainly the time had come for the
NATO countries to put more emphasis on the buildup and deployment of
conventional arms. Their doing so would reduce the likelihood that
in the event of a conventional attack by the Russians, the NATO
forces might be compelled at an early point in the hostilities to
resort to the use of nuclear weapons. Given the existence on both
sides of powerful "megatonners," the ESECS investigation would say in their final report, "any armed conflict in Europe entails the risk of becoming nuclear. This very risk is itself a deterrent to war.... Nevertheless we insist on the necessity for NATO to seek to reduce its present degree of dependence on a possible early recourse to nuclear weapons to [repel] a Soviet conventional attack."4

Troubles, as someone has written, never go on strike. All of CLW's projects had had their share, but the foulups of the Fellows in Africa and Columbia programs and the financial gaps of WAES and WOCOL were slaps on the wrist compared with those lying in wait as in the early 1980's Carroll perfected the plans and compiled the team—a steering group and a body of workshop participants—for ESECS.

In the beginning, to be sure, things went well. His first task was to surround himself with individuals who knew what they were talking about. He could brag to an adoring protege of his long-ago association with OSRO and AEC but he was the last person in the world to think he could push ESECS to success without the aid of persons more experienced than himself in martial matters—or more exactly, in martial and political matters since the two inerminately overlap. Every ESECS investigator must be a recognized authority on some facet of the field. In addition, he must have no active connection with a government or a military unit or an industry producing military items or an organization with a military or a political-military axe to grind. These requirements narrowed the possibilities, and it is a tribute to the Carroll Wilson network that within a few months CLW had acquired a steering group loaded with the appropriate expertise. Among its twenty-six members were General Franz-Joseph Schulze of
West Germany, formerly commander in chief of the Allied Forces in Central Europe; Air Chief Marshall Sir Alexander Steedman of the United Kingdom, formerly his government's military representative to NATO; and three Americans; Robert R. Bowie, formerly director of the Center for International Affairs at Harvard; General Andrew J. Goodpaster, formerly Supreme Allied Commander Europe in NATO; and William J. Perry, formerly Undersecretary of Defense.

As for the troubles--these began to surface early in the process. Officially in retirement since 1976, Carroll could no longer count on obtaining space for his staff in the Sloan School of Management. During the WOCOL years he circumvented this difficulty by persuading Dean Seamans to let the WOCOL people use a couple of rooms in the MIT School of Engineering. [UNDER REVIEW]
Carroll, desperately in need of a home for ESECS, had put it under the auspices of the American Academy of Arts and Sciences with room for his staff in the Academy's palatial headquarters at 136 Irving street in the Norton's Woods section of Cambridge.
The same conditions that narrowed CLW's choice of experts also
limited the sources to which he would turn for funds. "It was clear
from the beginning," he told Paul, "that we would not be able to use
industrial money. Many of the aerospace people would have been
delighted to supply money but we couldn't accept it nor could we
accept money from governments because we would lose our
independence. That forced us to foundations of which there are not
very many in the scale needed to finance this enterprise."  

His original budget anticipated an expenditure of two and a half
million dollars. When in March 1982 he submitted this figure to the
Ford Foundation with a request for a $250,000 grant, he encountered a
formidable obstacle in the person of Enid C.B. Schoettle, the program
officer in charge. Mrs. Schoettle--Harvard President Derek Bok's
sister, as Carroll was quick to notice--wanted him to cut his budget
by at least a million and a half dollars, proposed ways of running
the project at odds with those he had in mind, and recommended
changes in the makeup of both his steering group and workshops.  

Examining these demands in early July, Carroll attributed them
to the existence of "a small, closely knit coterie of people doing
arms control...and similar policy studies," who for years had been
"sitting at her [Mrs Schoettle's] feet for funding" and carrying out
their tasks "through writing papers for journals and other ways but
in no sense like the workshops" projected for ESECS. Whatever lay
behind Mrs. Schoettle's strictures, they alarmed him. Ford, the
foundation she represented, was not only the largest in the country,
it was also the largest in the international security field. If Ford
turned him down, chances were the other institutions from which he
was seeking aid for ESECS would either do the same or lower the amounts given. The minute his eyes fell on Mrs. Schoettle's five-page bill or complaints he realized, as he wrote Paul, "that if we didn't rebut it promptly and point by point we were dead." Rebut it he did, in a ten-page single-space letter, copies of which he sent to a number of influential people--an action, he told Paul, that annoyed Mrs. Schoettle by removing their quarrel from the status of a "duo-exchange" between herself and him.

Running through Mrs. Schoettle's comments, it seemed to Carroll, was an inclination to regard ESECS as just another gathering of policy analysts for the purpose of reading and listening to papers. Why couldn't the European Security Study be run on the cheap, she wondered, with no support staffs and a minimum of fuss and fume as those kinds of conferences were? It was this attitude, Carroll concluded, that moved the Ford Foundation program officer to dismiss as a waste of money his intention to provide honoraria to the members of both the steering group and the workshops. A certain impatience underlay the stiff prose with which he endeavored to defend his position on this matter. At traditional policy analysis exercises, he noted, those who read papers could look forward to the glory of publication. Those who listened could enjoy the sense of being participants in "large affairs."

That "set of satisfactions," he argued, would be of little interest to the individuals he had enlisted for ESECS. "These are very busy men," he reminded Mrs. Schoettle. Practically all of them had long since made their mark. They needed no further pats on the back. Moreover they would not get any--not at any rate in the report...
to be published by ESECS, wherein all their contributions, whether in the form of papers or otherwise, would be mashed into the consensus of the European Security Study group as a whole. Such people, working under such circumstances, said Carroll, ought to be paid...Incidentally...the elimination of all honoraria will reduce the budget by only 15%.

All of the members of the ESECS steering group, as first constituted, were from three countries—the United States, the United Kingdom and West Germany—and all were men. Mrs. Schoettle wanted the list expanded to include "representatives" of other NATO countries, and in the interests of "affirmative action," she thought there should be at least one woman on the list. Obligingly Carroll added a scholar from Norway and obtained the services of an American woman. Further he refused to go. "I don't know where you got the idea that the Steering Group members 'represent' their governments," he told the Ford program officer. "It is simply not true. They serve in their individual capacities." She had mentioned five individuals who in her opinion should be added to the workshop rosters. Carroll informed her that two of them had been taken on, but that the others were "in active government service and therefore not eligible to take part in ESECS."

Mrs. Schoettle considered it unwise of CLW to insist that his "military and civilian experts" reach a "negotiated consensus" as to what actions NATO should pursue to improve the capabilities of its conventional forces vis a vis those of the Soviet and its Warsaw-Pact Allies. Were ESECS to follow that route, she contended, its report would be a tissue of "useless common denominator findings and
conclusions." Carroll conceded that "such a danger exists if the chairman is not skillful and the members are people who tend to enlarge differences rather than seek solutions which improve on prior positions." He pointed out that SCEP, SMIC, WAES and WOCOL had yielded composite answers to the questions they covered and that with the exception of WOCOL the Ford Foundation had put money in all of them.

Frequently mentioned in Mrs. Schoettle's bill of complaints was her conviction that the work envisioned under Carroll's arrangements was already being done "adequately" by other groups. "ESECS," replied Carroll, "is international and civilian and military in composition, its analysis is framed in hard factual terms and it is oriented toward usefulness to governments. We are unaware of any comparable study." In his concluding paragraphs he informed the Ford official that the members of his steering group had endorsed his plans enthusiastically. Now she was suggesting "something wholly different," and he could only say that "we are not prepared to...restructure the project to conform to your design. We have no interest in such a design and it bears no resemblance to what the Steering Group has agreed to."

Carroll's rebuttal did not end the debate. For several weeks it continued, sometimes by mail, sometimes in person--a period marked on CLW's part by an effort to cope with recurrent financial crises. Two workshops scheduled for the summer months had to be postponed to fall for lack of funds, and on one occasion we find CLW offering to assist his sponsor, the American Academy of Arts and Sciences, with an offer of $35,000 out of his own pocket. His original plans called for a
twenty-six-month program, to be conducted in three phases with several meetings of the steering group and a larger number of workshops during each phase; and his original budget included a $50,000-a-year salary for himself. By summer's end he had settled for a two-phase program, had revamped phase one to consist of only one session of the steering group and three workshops, with the second and third workshops taking place at the same location at the same time, and had removed himself from the payroll.

None of these retrenchments altered the fundamental nature of ESECS. Still, to Carroll, the making of them was a painful experience. He was accustomed to strolling into a foundation, chatting with old friends there, and walking out with a promise of X dollars in his pocket. This scrabbling for every penny drained even his elastic spirit. "Dealing with the future is a risky business," his son pointed out, "and your winning streak has been unnaturally long." That his was petering out disturbed Carroll profoundly. "The troubles besetting ESECS," says David Dodson Gray, "triggered some psychic fault in him. They tore him apart." Rosemary remembers her father at this time as "literally walking the floor at nights," and the Ruebhausens remember a peculiar occurrence connected with his last stay in their New York apartment. "Carroll was such a well organized person," says Zelia, "but that time he left some of his things behind. Nothing like that had ever happened before."

Although it is plain from Enid Schoettle's side of the correspondence with CLW that her reservations about his project remained intact, in the end she gave in. On 27 September she asked the officers of the Ford Foundation to honor Carroll's request. This
money plus a few sums from other sources, about $885,000 in all, carried phase one of ESECS to completion and underwrote the publication in May of 1983 of its report, "Strengthening Conventional Deterrence in Europe: Proposals for the 1980's." Carroll would not live to see the report. Today the physicians who attended him during his last illness refuse to speculate on the degree to which the strains of ESECS contributed to it; but in the summer and fall of 1982 his actions were those of a man aware that all was not well. He startled the Ruebhausens, during his last visit, by insisting on talking about the past—something he had never done before. In a series of conferences with his financial advisor at the Bank of New England in Boston he reviewed his assets, made certain that trusts set up for the benefit of his wife were in order, and arranged for a number of gifts: 230 shares of Millipore stock to MIT, $4,000 to Paul, $5,000 each to his five grandchildren and $1,500 each to his long-time secretaries, Susan Leland and Roberta Ferland.

He was tired, certainly, when in late September the first ESECS workshop ended; still tired when on 22 October the last two workshops, convening simultaneously at Kronberg Schloss on the outskirts of Frankfort, Germany, got underway. Rosemary had so arranged her annual vacation that she and her father could meet in Paris after the Kronberg sessions, and she was at the Charles de Gaulle airport with a rented car when his plane put down on the twenty-eighth. They spent the next three days in Burgundy, returning to Paris on the last day of the month and boarding a plane for Boston on November 3rd. At Logan International Airport, they parted company, Rosemary heading for her home in Watertown, her father taking a bus to Attleboro, where Mary picked him up.
It was a ritual of long standing, whenever Carroll returned from one of his trips, for him and Mary to settle down over drinks while he reported on his adventures. But this time there was no report. This time Carroll muttered something about "a cold" and took to his bed. Next day he phoned Dr. Richard Key Mead, the family physician. "Symptoms, please," said the doctor. "Deep breathing, coughing, and a stressful project," said Carroll. "Come see me," said the doctor.

Next day—Friday, 5 November—Mary drove him to Mead's office. Slightly more than a year before, in August 1987, Mead had examined him thoroughly. At that time there was no sign of illness. "But now," says Dr. Mead, "things were different. Frankly I was scared. I called the Rhode Island Hospital and arranged for him to be admitted at once." Tests were to be made and he was to remain there indefinitely. Two days later the diagnosis was in. Carroll had leukemia and a team of doctors had been put on the case with Richard D'Amico a practicing hematologist-oncologist with offices outside the hospital, in charge. D'Amico and his colleagues were suggesting chemotherapy.

It fell to Dr. Mead to convey these facts to the patient and his wife. "I'd known Carroll closely for many years," the doctor says, "and I figured he'd want me to put things bluntly; so I did. I told him and Mary that with the proposed treatments there was a reasonable chance of improvement. On the other hand there might be serious side effects. It was up to them. My recollection is that neither of them hesitated for so much as a second. 'Do what you think best,' they said. Carroll's word was 'aggressively.' 'Proceed aggressively.' he said."
Carroll stricken was Carroll still. Almost to the end of his sixty-eight days in Rhode Island Hospital he remained convinced that the remission the doctors hoped for in vain would occur. Four weeks after his admission to the hospital he was saying as much in what seems to have been the last letter he ever wrote--a lively communication to one of his car-buff friends, Frank Cooke of North Brookfield, Massachusetts.

An optical engineer, Cooke is the proprietor of an optical instruments-making firm in North Brookfield. On the side--"as an avocation," he explains--he operates The Rolls Royce Garage where from time to time Carroll brought his Bentley for repairs. "He rarely let me do the whole job," says Cooke. "He'd say 'you do the things I can't handle, and then I'll take over and do the others.' He'd do them all right. He was a good mechanic. Good company too. I always enjoyed his visits to what he called 'the Cooke stove.'"

In his letter to Cooke, Carroll attributed his presence in a hospital to "pushing 15 hours a day for 18 months on ESECS," adding, however, that his doctors were saying that "prospects for a long term remission are good if I can survive the warfare of chemicals in my bloodstream. (which I will)." Carroll's reason for writing Cooke was that with recovery only "six weeks" away "I greatly need a project' which can then go on for several years afterward." He and Paul had thought of one. Together they were going to build a 1912 London-Edinburg, one of the more famous of the Rolls Royce classics, "whose features I will design." What Carroll wanted from Cooke were the answers to some questions: "Was the London-Edinburg worthy of real attention? What might be the time and money costs if done over..."
several years?" Any information "you can send me," Carroll wrote, "will be most welcome. When I get out and recover a voice [the chemotherapy was having its side effects] we could discuss these issues on the phone."

Carroll died at 2:38 p.m. Wednesday 12 January 1983 and on the twenty-eighth, family, friends and members of the network from all over the world gathered at the MIT Chapel for a service in his memory. Howard Johnson delivered the eulogy and David Dodson Gray, in a brief meditation, described CLW in the words of the Indian poet Tagore as having spent his life dancing "on the edges of time." The crowd was large and as the octagonal, moat-surrounded chapel seats only two hundred, loud speakers were installed in nearby Kresge Auditorium to take care of the overflow.

Paul Wilson was touched by the presence of Robert Efimba, a Graduate Associate Professor of Civil Engineering at Howard University in Washington, D.C. and a past president of the National Capital Section of the American Society of Civil Engineers. A native of Cameroon, Efimba was completing his high school education in Lagos, Nigeria, when CLW called on him there in 1959. The young man had applied for admission to MIT, had submitted an impressive record in mathematics and the sciences, and had been accepted—only to inform the Institute that he could not attend. "How come?" Carroll asked him. "Money," said Efimba. "Oh, is that all?" said Carroll, and a few months later Efimba was in possession of the scholarship that would help carry him to a doctorate at MIT and to his present position at Howard University.
"What struck me about his appearance at the memorial services," says Paul; "was that he wasn't a part of the Carroll Wilson network." Nobody had sent Efimba a notice or an invitation. He spotted the obituary in the Washington Post, recorded the date of the services and when the day came canceled his classes and other appointments and took the shuttle to Boston. "I had to come," he told Paul. "After all, your father transformed my life."

Others could say the same. "Daddy," Rosemary Wilson has remarked, "was singularly detached from the humanity his projects were designed to help." But where the people who came under his mentorship were concerned, it was another story. For them he could never do enough, and his feelings for them were deep and personal.

By the Fellows in Africa, by the young men and women on the staffs of SCEP, SMIC, WAES, WOCOL, and ESECS—and by the likes of Robert Efimba—Carroll Wilson will be long remembered.
Abbreviations Frequently Used

CLW. Carroll Louis Wilson

CLWP. The Carroll Louis Wilson Papers at the Institute Archives, Massachusetts Institute of Technology. This well-arranged collection was processed by Amy G. Sugerman and an excellent finding list, also by Sugerman, is available at the Archives. References to this source usually include the box and folder numbers as arranged in Note 1, Chapter 1.

Int. Interview, followed by the name of the interviewee. Where it is obvious in the text that information rests on an interview and the interviewee is there identified, no reference to such material appears in the Notes.

MW. Mary Wilson

PW. Paul Wilson


VB. Vannevar Bush.
Chapter 1: BEST Laid Plans

1. William H. Matthews; CLW to PW, no date, CLWP. 2:52


4. Dodson Grays to author, 18 Mar. 1985

5. Int.: Dodson Grays.


7. CLWP, 2:22.

8. Int.: Susan Leland.
Chapter 2: GROWING UP IN ROCHESTER

1. Patty Young, our Lady of Lourdes Church, Rochester, to author [24 Apr. 1985]


4. Same.

5. Ints.: MW and Rosemary Wilson.

6. Dorothy to CLW, 5 Jan. and 29 Mar., 1945, CLWP, 2:40


8. Same.

9. CLW to parents or sister, 16, 17, 18 and 19 Sept., 1924, CLWP, 2:35. Noticing some paper around the material sent to MIT by CLW, Amy Sugarman--true archivist that she is--decided to examine the wrappings before throwing them away. They turned out to be the earliest letters by CLW that we have.

Chapter 3: GETTING STARTED


2. Same.

3. Same.

4. Rhines to author, 5 July.


8. See note 1.

9. Int.: PW.


11. Diary, Jan.-Feb., 1936, CLWP, 2:22; Calendar, same, box 1.

12. Int.: Donald Stucke.


15. See note 13.


20. CLW, Diary, 22 Jan 1936, CLWP, 2:22.

21. Int.: MW.


undated CLWP, 4:106.
Chapter 4: VANNEVAR BUSH'S "ALTER EGO"


12. CLW's "journal" of the 1941 mission to England—a series of letters to his wife—is in CLWP, 3:209. Except as otherwise indicated all descriptions of his activities during this mission rest on this source.

14. Facts on File 1941, p. 212E


Chapter 5: MANAGING THE ATOM

1. Int.: Volpe.


10. Confirmation Hearings, 324-16.

11. Same, 71.

12. Same, 109f.

13. Same, 113f, 214, 217f, 222.


15. 8 Feb. 1947.


17. Waymack to CLW, 12 Aug. 1950, CLWP, 18:808.


19. Lilienthal II, 537.
20. Same, 485.
22. Alfred C. Coxe, Jr. to CLW, CLWP, 16:7575.
23. CLWP, 2:1
27. CLW Raymond L. Thompson, 18 Apr. 1949, Same.
31. Hewlett II, 313; Int.: PW.
33. 29 June 1959.
34. For Strauss' own story of his defeat in the Senate, see his Men and Decisions, 1962, chapter XVIII: "Decision in the Senate"; see also Hearings Before the Committee on Interstate and Foreign Commerce; U.S. Senate, 86th Cong., 1st Session.: The Nomination of Lewis L Strauss to be Secretary of Commerce, 1959.
35. Lilienthal II, #603.
36. Same, 621; see also James Reston's article in the New York Times, 1 Feb. 1950.
37. Hewlett II, 466.
38. Same, 469.
39. CLW, Memo to the Commission, 4 Aug 1950, CLWP, 18:806.


Chapter 6: PRIVATE ORDEAL


6. CLW to VB, 12 Nov. 1952, same, 15:703; Release by Communications Associates in VB Papers.


9. CLW. Notes pm RW (Rathbun Willard) talk in cafeteria, 9 Apr. 1955, same.

10. CLW, Notes Re: Record of Events Surrounding M&C Board Differences, same, cited hereafter as Notes Re.

11. Notes Re.

12. Copy of Itr. in CLWP, 15:711.

13. Notes Re.
14. 20 Feb. 1958, CLWP, 15:711
15. ±5. CLW, Notes Re RW talk in cafeteria, 9 Apr. 1958, same.
17. Notes Re.
18. Same.
19. Same.
23. CLW, rough Draft to stockholders, 9 Mar. 1958, same.
24. CLW, Note, 12:30 p.m. Wed. 16 Apr. 1958, same.
Chapter 7: "THE PARTING OF THE CURTAINS"
AND THE FELLOWS IN AFRICA AND COLUMBIA

3. Int: MW.
4. 9 July 1959, CLWP, 2:38.
5. CLW to Sir Edgar Sengier, 22 Dec. 1959, CLWP, 10:472.
6. CLW to MW, 21 June 1959, same, 2:38.
7. To MW, 18 June 1959, same.
8. See note 5.
10. Same II: 8-10.
11. Same, II: 14, 17.
15. Same, II: 17.
16. Same, Chapter VII; reprint, The M.I.T. Fellows in Africa, an
article by John McPhee, "Fifty-two People on a Continent," in The New
Yorker, 5 Mar. 1966 (cited hereafter as McPhee).
17. McPhee, 7.
18. Same, 2.
20. Same, 7-8.
22. Same, 7.
23. Same, II.


27. Same, II: 70.

28. Same, II: 53.

29. Same, II: 68.

30. Same, II: 70.

31. Same, VIII: 39.

32. Same, II: 51.
Chapter 8: TEACHING, SETTLING AN OLD SCORE, STALKING IDEAS, AND CLEANING UP THE WORLD.

2. Int.: Perkowski.
9. Int.: PW.
10. CLW to Johnson, 6 Nov. 1967, CLWP, 17:789.
14. Same, xiii.
15. Int.: Hilliard Roderick.
17. See note 12.


Chapter 9: IN AND OUT OF THE CLUB OF ROME
AND THE ENERGY WORKSHOPS


6. 2 Feb. 1972, same.

7. 27 July 1974, same.


9. CLW to George S. Franklin, 4 May 1973, CLWP, 42:1742.


14. 1 June 1977, same, 1:2.

15. See note 8.


18. CLW to Bradshaw, 30 June 1976, same.


20. CLW to Pounds, same.


Chapter 10: AT HOME AND ABROAD

3. Same.
10. Int.: Martin.
12. Rental agreement between Commander Rodney Somerset de Chair...and CLW, 1977, CLWP, 3:83.
13. Ints.: PW, Dodson Grays, others.
15. Int.: PW.
56:2134; Nelson Rockefeller to CLW, 21 Dec. 1973, CLWP, 40:1647; 
Introduction to CLWP index, p. 6.


21. Introduction, CLWP Index.


Chapter 11: THE LAST PROJECT

1. 6 June 1976, CLWP, 34:1396.

2. Same.


10. Schoettle to CLW, 27 Sept. 1982; and undated draft, Academy of Arts and Sciences to Ford Foundation, courtesy of Rosemary Wilson.
Solving Tomorrow's Problems with Today's Technology

The cover story in this issue ("Charting the Way the World Works," by Donella Meadows) is the first of several articles commissioned by Technology Review with the help of former students and colleagues to honor the late Carroll L. Wilson, who was Mitsui Professor, Emeritus, in Problems of Contemporary Technology at M.I.T. when he died early in 1983. Wilson took charge of a major interface of technology and policy in 1947, when he became first general manager of the U.S. Atomic Energy Commission. But his best-remembered contributions began 10 years later, when he joined the Sloan School of Management and began a series of projects on major global problems.

Sensing a "leadership vacuum" among the then-new nations of Africa, Wilson conceived of sending teams of recent M.I.T. graduates to help African countries develop management skills and solve pressing problems. Those who participated found the direction of their careers and the nature of their lives forever changed. Then came studies on using single-cell protein to relieve world hunger, mitigating effects on climate, the value of alternative energy sources, using world coal, and finally replacing nuclear arms with conventional ones.

The common denominator in all these activities was Wilson's sense that future problems, however dimly perceived, might be averted by intelligent application of present technology. Perhaps the editors' highest aspiration for this magazine is that its readers might share at least some of that perceptive vision of the potential of today's technology to improve tomorrow's lives.—John Mattill
When the late Carroll Wilson, '32, was 14 years old, his parents sent him to a respected prep school. Finding that the boys were preoccupied with sports and other "rotten" stuff, Wilson sent two or three registered letters per day to his parents threatening to walk home to Rochester, N.Y., if they did not come to retrieve him. They did. And that may have been the last time anyone succeeded in forcing Carroll Wilson to be distracted by things he didn't want to do.

That anecdote will sound perfectly in character to the 40 or more of his former colleagues who will assemble in Cambridge on February 2 to mark the second anniversary of Wilson's death. Although single-mindedness was a quality they admired in Wilson, his spiritual heirs will be gathering primarily to preserve Wilson's legacy of action on a global stage, his concern for the major problems of humanity, and his faith in the leadership ability of the young.

Their annual gatherings are the most visible part of an effort to raise $250,000 to support a permanent series of Carroll Wilson Awards. Constantine Simonides, '57, says the awards are expected to provide $3,000 to $10,000 annually to several individuals who present imaginative plans for international travel, study, and research.

Howard Johnson, a friend as well as colleague of Wilson, would like to see the awards go to young people whose proposals reflect a willingness to launch themselves "from a standing start" into a totally new intellectual frame of reference—a mode of action absolutely typical of Wilson.

Linchpin for The Limits to Growth.

Wilson, whose varied career included being the first general manager of the Atomic Energy Commission (AEC), joined the faculty of the Sloan School in 1959. For more than 20 years he used M.I.T. as a base while demonstrating his skills as an initiator of meetings (both national and international), a link among policy-makers, an assembler of information, and a molder of world opinion on major issues such as energy supply, global climate change, and alternatives to nuclear arms.

Never a traditional classroom teacher, Wilson involved his students and colleagues in his world, and many of them say he permanently changed their lives.

Take, for example, the book The Limits to Growth, published in 1972. It was based on a very early computer simulation of what would happen if world population, food production, industry, resource development, and environmental degradation continue to grow exponentially. The book put forth the then unthinkable idea that growth itself causes problems and that it must be deliberately limited.

The chain of events which led to the book began when Carroll Wilson introduced Jay Forrester, S.M.'45, head of the System Dynamics Group at M.I.T., to the Club of Rome—an independent, international forum for the "great issues." Forrester saw that the problems of growing complexity considered by the Club of Rome lent themselves to computer modeling. He produced two models and one of his collaborators produced a third on which some of Forrester's colleagues based The Limits to Growth.

The book triggered a storm of controversy by challenging the universal assumption that economic growth was the optimum scenario for all countries in all times.

Back at M.I.T., Wilson organized workshops, conferences, and seminars to explore the issues raised in the controversial work. One of the people who was inspired by the book to join Wilson's seminar at Sloan on "Critical Choices for the Future" was David Gray, a minister who had been studying finance at the Harvard Business School. Asked four weeks into the course to write a paper on "How would a sustainable social and economic system work when my grandchild is as old as I am now," Gray, produced a "grandchild paper" on a sustainable financial system 40 years down the road. This was at a time, he says, when "long-range" planning in the financial community meant looking 18 months into the future.

Wilson's lesson was that unless we have some concept of a truly good future, we are at risk of being overwhelmed by what are essentially transition problems. While "a grandchild paper" seemed like an almost bizarre ex-
erise in the very early 1970s, Gray remembers, this is now a recognized technique in policy design, referred to as "normative scenario planning."

As a teacher, Wilson never forgot the audience outside the ivied walls. In 1973, when asked by a Congressional committee to testify on the range of issues raised in The Limits to Growth, Wilson wrote back to say he would be in Europe and unavailable, but help might be forthcoming from his seminar group in Cambridge. After some negotiation, members of the seminar agreed to provide 10 briefing papers for 10 days of testimony. "In 21 days, we wrote a book," Gray recalls.

"Working with Carroll Wilson was a life-shaping experience," Gray says. He and his wife, Elizabeth Dodson Gray, run the Bolten Institute for a Sustainable Future—publishing books, doing environmental projects for government and industry, and fulfilling a public education role. One of Gray's colleagues on the briefings to Congress, William Martin, '74, is now the third-ranking officer of the National Security Council in Washington. Other colleagues include John Strongman, S.M.'77, now with the World Bank, and David Korten, now with the Ford Foundation and the Agency for International Development (AID) in Indonesia.

Working for the Ugandans or the U.S.?

Following his departure from the AEC, Wilson had a continuing leadership role with the Washington-based Council on Foreign Relations, a high-level, private institution which seeks to understand issues and influence policy. Thus he was invited on a tour of the newly-emerging countries of Africa in 1959. The tour coincided with his acceptance of a bid from Mr. Johnson, who was then dean, to join the faculty of the Sloan School and the timing proved to be momentous for many of his students at M.I.T.

Wilson had seen in wartime the remarkable things accomplished by very young people thrust into positions of great responsibility. He saw in Africa a "talent vacuum" developing in the operational, middle management ranks of countries making the transition from colonialism to independence. And then at M.I.T., he was pressed by his students for some means for independent involvement in an international setting. Wilson synthesized all that into the African Fellows Program.

In typical Wilson fashion, he had the idea, located the funding, and the leg work—travelling around Africa lining up jobs for the Fellows. The Fellows were apprenticed to African leaders on the condition that they be given real responsibility. As a result, they drafted law codes, negotiated national agreements with the World Bank, set up national airlines, and generally advised heads of state, often on issues with which they had no previous experience.

Wilson is said to have considered it the highest compliment to the program when the U.S. ambassador to Uganda complained that the African Fellow in Kampala was acting as if he were working for the Ugandans. "He is," Wilson agreed.

Among former African fellows, Richard Pigossi, S.M.'65, is vice-president of the Private Investment Co. for Asia, Jakarta; Michael Roemer, Ph.D.'68, is head of the Harvard Institute for International Development (now on a two-year assignment in Kenya); and Carroll Browster (centerpiece of an eloquently detailed tribute to the program by John McPhee in The New Yorker) is president of Hobart and William Smith College. Constantine Simondes, enlisted by Wilson to help manage the program, is now vice-president of M.I.T.

The fellows program was discontinued in the mid-1960s, when the political climate in Africa became less hospitable to American advisors. But the 80 fellows (and their wives, whose talents also made them invaluable to African countries in need of every kind of skill) were welded by shared experience and elaborately orchestrated annual gatherings with Wilson into an enduring network which is the backbone of the Wilson memorial activities.

Assessments of Global Problems

Wilson then turned to larger issues, pioneering a new format for studying and publicizing major scientific problems in world development. In 1970, for the first study, he assembled a multi-disciplinary group that produced, in one month, Man's Impact on the Global Environment. The study was an important catalyst of debate within the U.S. on the greenhouse effect and other major environmental consequences of technology, including the SST. The following year Wilson brought together 35 atmospheric scientists from 15 countries in Stockholm to produce Inadvertent Climate Modification: Report of the Study of Man's Impact on Climate.

Wilson next conceived of a process for engaging industrial and government leaders (in contrast to scientists) from many countries in making global assessments. He demonstrated the process in action during three years of leading a Workshop on Alternative Energy Strategies (WAES). His format involved entitling the very top people in the countries with the most at stake in energy development (the president of Atlantic Richfield, for example), getting their commitment to meeting seven or eight times over the course of the study, requiring them to take on young "leadership apprentices," and getting the conference report, in book form, into bookstores in 15 countries within three months of the study's end. Issued in 1977, the WAES study outlined strategies to counter what it foresaw as an inevitable oil shortage.

Organization of the World Coal Study began in 1978, and that Wilson-led effort produced a report in 1980 entitled "Coal: Bridge to the Future." The essence of that study's conclusion was that precious oil could be saved by using coal in ways that were environmentally sound.

When Wilson died of leukemia in 1982, he was ostensibly retired, but in fact he was fully engaged in another of his classic studies, this time on conventional weapons as an alternative to the nuclear threat in NATO countries.
Vitalis wins first Wilson Award

The politics of international construction is the focus of the research being conducted by the first recipient of a Carroll L. Wilson Award.

The $5,000 award went to Robert J. Vitalis, a PhD candidate in political science, who is investigating the economic and non-economic problems involved in building the Awan hydroelectric project in Egypt. The award was presented by Professor Howard W. Johnson, honorary chairman of the MIT Corporation and cochairman of the Carroll L. Wilson Awards Committee.

Attending the presentation ceremony with Professor Johnson were MIT Vice President and Secretary Constantine B. Simonides, '57, a member of the prize committee, and Robert P. Greene '55, executive director of the Wilson Award Committee Secretariat. Mr. Greene is assistant director for administration and finance at the MIT Media Laboratory.

A special award of $1,000 was presented to Elizabeth J. Erskine, a senior in economics, who is making a cross-national comparison of lead regulations—primarily in the smelting and refining industries. She will seek to determine how such regulations in some 20 countries are related to a particular country's economic situation and industrial composition.

The awards, established in the memory of the late Professor Carroll L. Wilson, support research and study by MIT students on important societal problems with international dimensions. Professor Wilson, MIT's first Mitsui Professor in Problems of Contemporary Technology, spent much of his career seeking solutions to world-scale problems.

Mr. Vitalis received an AB in political science from the State University of New York at Stony Brook in 1977 and an SM from MIT in 1984. He had a graduate fellowship in 1980-82 at the American University in Cairo, Egypt.

The 1986 Prize Committee selected the recipients from among 18 applicants. Committee members were Sir William R. Hawthorne '39, chairman; John S. Glass '60; Professor Johnson; Professor Samuel J. Keyser, associate provost; Dr. Saburo Okita, chairman of Japan's Institute for Domestic and International Policy Studies, and Mr. Simonides.