

# REFLECTIONS BY COLLEAGUES AND FRIENDS

## **Vivian L. Seymour**

*Friend and Secretary to Dr. Gibson, 1943-1983*

I was often asked, "What is it like to work for Dr. Gibson?" First, it is necessary to change the "for" to "with" – it was a partnership, albeit an unequal partnership; the relationship had that quality. Having disposed of the preposition problem, now to respond to the question. Not so easy! How can I encapsulate into a sentence or two the diversified, ever-changing activities of more than 36 years – from the early days when the urgency of the wartime effort was still felt: the long hours, lots of carbon copies, frustrations, followed by moments of high adventure when things really worked and there was an air of elation – nothing was ever static – on through the successive years of more and more breakthroughs, the recognition of the Laboratory as a national asset, the pride in knowing that I was a part of it, ever so small, but also necessary; and through it all, the loyalty and respect that Dr. Gibson inspired in all who had the good fortune to come under his spell. Impossible to put a value on praise from him, which mainly came in the form of his full confidence. Does that answer the question? The rest of the answer: it helped to be able to roll with the punches and to have a responsive sense of humor.

It has been said of Thomas Jefferson that he was "easy of acquaintance but difficult to know." It seemed to fit Dr. Gibson. In spite of his gracious manner, charm if you will, that put people at ease, there was something that said, "Keep your distance." Perhaps it was a shyness – in present-day parlance, he was a very private man. Also, one always knew he was the boss.

In moments of relaxation, his favorite topics of conversation were his family and his garden – accomplishments in which he took great pride. Inordinate pride, I sometimes thought, when incidents were told in excess of twice a week.

Much has been said of Dr. Gibson's wit and sense of humor. He loved a well-turned phrase that reached a height (or depth) in the oft-maligned pun. When bested in a contest of wits, a low groan would indicate his appreciation. But beware of carrying the fun too far. One needed a ball-bearing-quick change of tempo, because when the frivolity was over, you'd best be deadly serious.

He wrote beautifully and, fortunately for all of us, prolifically as well. Indeed, he was a learned person – in the true sense, a scholar. He read widely, absorbed fully, and had that enviable talent of instant recall. He had a way with words. To illustrate, I quote from John Milton's *Apology for Smetymnuus* a compliment he would have liked: "His words, like so many nimble and airy servitors trip about him at

command." Always he found just the right quotation to illuminate his own writings; it was a kind of vanity, the hallmark of his erudition.

The Gibson charm was legend. He was a gracious host in his home, in his office, in any gathering. In formal attire, with a martini in one hand and a cigarette in the other, he was urbane and devastating, *and knew it!*

But there was another side of this man – serious and ever-mindful of all those who had given him assistance and encouragement along the way. On the occasion of the APL 40th Anniversary Dinner, he addressed in particular those who received their 40-year awards; but also, for those who were part of the early years who had not made it to the 40th year, he quoted, perhaps prophetically, from *Omar Khayyam*. It seems appropriate to repeat that quotation:

Lo! Some we loved, the loveliest and the best,  
That Time and Fate of all their vintage prest,  
Have drunk their Cup a round or two before,  
And one by one crept silently to rest.

I salute the memory of a truly great and very dear man, who was my boss and my friend.

## **William H. Avery**

*Director of Ocean Energy Programs, APL*

Dr. Gibson will be remembered for the lasting monument he created in the Applied Physics Laboratory and for the profound influence he exerted on the lives and motivations of the several thousand scientists and engineers whose careers he touched or molded.

It is good to recall the talents that enabled him to excel as a research director; they were many-faceted and often reflected brilliance from sources that were pretty dull in ordinary light.

These qualities of Dr. Gibson seem most important to me:

*Intelligence enhanced by humor.* This characteristic gave him the ability to comprehend in depth the range of technical disciplines essential to APL programs without becoming overimpressed either by his own understanding or that of the practitioners.

*Intense curiosity with razor-edged discrimination.* This quality kept him constantly exploring the laboratories and offices at APL to see and hear what new ideas were emerging, and enabled him to pare away the superfluous material.



*Warmth and openness.* These qualities ensured that anyone who entered his office with an idea or a problem would be welcomed, with the result that he was always aware of the state of the Laboratory and was regarded as a partner in every new project.

*Intolerance of sham and dishonesty.* His integrity was a shining model for all, and his anger at dissemblers was Olympian.

*Breadth and depth of vision.* His interests encompassed science and technology and included music and history. His fine memory, and his interest in creative people as well as in the subjects of their investigations, made him a fascinating conversationalist who could and did illuminate with insight almost any topic that arose. His judgments were profound about what should be emphasized and maintained, in order that APL could contribute its best to the solution of national problems. These capabilities combined to establish his success in placing APL, its projects, and its people in an enduring national setting.

*He was wise and good.* He had the gift of friendship. Through his talents he was able to bring to fruition projects that will stand as landmarks in history.

It is an honor to have known him and to have been his friend.

### Richard J. Johns

*Professor and Director, Biochemical Engineering,  
The Johns Hopkins Medical Institutions*

I welcome the opportunity to tell of the career of R. E. Gibson, M.D. It is a remarkable career, and it gives revealing insights into the character of a remarkable man.

Dr. Gibson was late in starting his medical career. He did not enter the Medical School until 1969, at the age of 68. Nevertheless, he received his M.D. degree three years later, one year short of the conventional four. In part this can be attributed to the fact that he entered the Medical School at the top of the academic ladder – as a full professor. This fact alone is remarkable. Anyone familiar with our Professorial Promotions Committee will attest to this. Professorial appointment is recommended solely on the basis of scholarly achievement, and the credentials of persons who have held high administrative office are scrutinized with particular care. There are no honorific or *pro forma* appointments to the senior faculty; all are based on merit.

Dr. Gibson's M.D. degree was an honorary degree, but in the real sense it was an earned degree. One message that I wish to communicate is how Ned earned his honorary degree. The other message is on a more personal note.

I had the pleasure of presenting Dr. Gibson to President Muller for his honorary degree. I presented him as a man who had had two distinguished careers at this University.

His citation recounted his contributions to APL. It went on to say:



Dr. Gibson receiving an Honorary Degree of Doctor of Medicine from The Johns Hopkins University (1972). Dr. Steven Muller, President of the University (left); Dr. Gibson (center); and Dr. Johns (right).

Upon achieving the status of Director Emeritus in 1969 he began his second University career, this time as Professor of Biomedical Engineering in the School of Medicine. Here, in addition to his departmental activities, he brought his orderly and analytic talents to bear on a wide variety of problems, ranging from re-organization of the medical record system to a consideration of the management of clinical units. He was elected as a charter member of the Medical School Council and was selected to be its Chairman *pro tempore* during its organization. He accomplished all of this and at the same time won the hearts of his colleagues on the medical faculty with his wry good humor.

In recognition of his important contributions to the University, I am pleased to present Ralph Edward Gibson, and, in particular recognition of his contributions to the School of Medicine, he is presented for an honorary degree of Doctor of Medicine.

How can it be that a man with a three-year tenure was awarded an M.D. degree with the unanimous and enthusiastic recommendation of the Advisory Board of the School of Medicine? Those who knew Ned are not surprised. That is the measure of this man.

Let me now chronicle Ned's contributions that led to this recognition – how he earned his degree.

His contributions began in 1965 when, as Director of the Applied Physics Laboratory he lent his steadfast support to the collaboration between APL and the Medical School. Steadfast is an important adjective. With Ned, when you had an agreement there was no need for a memorandum of understanding. There were no ambiguities, meanings were clear, and his word was his bond.

Ned played an important part in 1968–1969 as a key member of the University Committee on Biomedical Engineering. That was a University-wide committee charged with deciding the role of biomedical engineering in the University. This led directly to



the establishment of Biomedical Engineering as a full department.

Ned joined the department in 1969, shortly before it became a full department. Among other duties, he assumed responsibility for authoring and editing our annual reports. This task brought him into contact with every aspect of the departmental activities. He met with each faculty member. His insatiable intellectual curiosity, his ability to apprehend scientific opportunities, and his seasoned judgment soon made him not an interviewer but a colleague of every Biomedical Engineering faculty member, a colleague whose advice was sought and respected.

This explains why, after a two-year tenure, he was elected by our faculty to be our departmental representative to the newly formed Medical School Council. It was an equal mixture of trust, affection, and recognition of Ned's abilities that led to this.

How did it happen that the Young Turks of the Medical School Council elected the 70-year-old Ned Gibson their Chairman *pro tempore* in the crucial period of initial organization? Ned's reputation for absolute integrity and organizational ability had preceded him. Even a brief encounter with him persuaded one that here was a man with both leadership ability and humility—a man with institutional, not personal, motives. As a consequence, Ned provided the wise and seasoned leadership that established the Medical School Council on a sound basis. His imprint on that organization endures.

Thus it was that Ned's contributions to the School of Medicine led to its enthusiastic recommendation that he be awarded an honorary M.D. degree, only the second to be awarded in the history of the University. This was a degree which Ned earned by virtue of his dedication to the School of Medicine, a degree that honored this contribution.

It was fortunate for me (but not for him!) that in 1967, while Director of APL, Ned became jaundiced and was admitted to Johns Hopkins Hospital under the care of Frank Iber and George Zuidema. I had a patient down the hall whom I visited daily, so I paid a courtesy call on Ned.

We had a delightful conversation. We found we had a broad range of mutual interests. As with the Walrus and the Carpenter, we talked of many things,

...of shoes and ships and sealing wax  
Of cabbages and kings  
And why the sea is boiling hot  
And whether pigs have wings.

Perhaps this is hyperbole. We did not discuss whether pigs have wings, but we certainly did talk of ships, and even why the sea is boiling hot. It was during one of those conversations that Ned told me of Lord Kelvin's miscalculation of the age of the earth based on its rate of cooling. The error was caused by the fact that the earth was hotter than it should be owing to the heat generated by radioactive decay.<sup>1</sup>

So it was that we began a series of daily conversations during the weeks of his convalescence. We both

looked forward to the discussions, and thus began a warm and enduring personal friendship.

We do not so much mourn the loss of a friend—a loss in which we all share—as celebrate a remarkable life, a life that has touched and enriched us all.

#### REFERENCE

<sup>1</sup>"Science in the Making," an address by R. E. Gibson at Duke University, March 12, 1969.

### Coleman Raphael

*Chairman, Atlantic Research Corporation*

I first met Ned Gibson in 1968. In my capacity as then vice-president at Fairchild Industries, I was invited to serve on the newly formed Maryland Governor's Science Advisory Council. GSAC would function as a scientific resource to answer technical questions or provide counsel to the governor as he requested.

Many of the GSAC members carried impressive credentials. There were university deans and presidents, executives from high-technology industries, and existing or retired heads of government agencies and laboratories. We generally developed a healthy degree of respect for each other, but for sheer breadth of knowledge and intellectual insight, I don't think that any other member of the council came close to Dr. Ralph Edward Gibson. At our monthly meetings, we discussed many issues and argued many points of view. Since the subjects of discussion touched on many controversial issues, ranging from the Calvert Cliffs nuclear power plant to the pollution of the Chesapeake Bay, some of our meetings got hot and heavy. Yet we generally arrived at a reasonable consensus, and the Council has survived through the terms of Governors Agnew, Mandel, Lee, and Hughes.

Ned Gibson attended meetings regularly and was one of our most active participants. When I think of him, I think of those characteristics which impressed me most:

*Consideration.* In the heat of animated technical argument, scientists, like lay individuals, can become emotionally caught up in the logic of their own positions and will very often be defensive, derisive of the counterarguments, and even abusive. How often have we seen arguments develop between the presenters and the members of the audience at distinguished conferences, with bitter sarcasm and denunciations heaped on an individual because of his position regarding the behavior of a particular microorganism or the characteristics of an elementary particle.

Ned never was critical or close-minded about another's viewpoint. Although he may have developed a firm position on a subject, he would listen to every counterargument and would engage in reasoned discussion with his critics, so that each point of differ-



ence could be addressed with logic and persuasion. He made other people feel as if what they had to say was important, and he was a great arbiter. On many occasions I saw others, as well as myself, change our positions and adopt many of Ned's, believing this to be an independent evolution within our own minds, whereas we had actually come into agreement with Ned through abetted self-analysis and gentle persuasion.

*Knowledge.* Ned was absolutely brilliant. I have seen him engage in discussions of electromagnetic interferences, psychokinesis, Darwinian principles, and educational psychology with the same ease and unbelievable background that a chef would use in describing how to boil an egg. A lunch with Ned was always an exhilarating and enlightening experience, leaving one with new thoughts about politics, economics, and philosophy. I have rarely encountered a subject or a discipline in which Ned was not incredibly knowledgeable.

*Gentleness.* Ned was kind and warm, and always a gentleman. He never raised his voice, he emanated enthusiasm, participated with everyone, and was a pleasure to be with. Whether we were holding a private discussion over tea and biscuits at his home, or he was delivering a lecture to an audience of hundreds at the Nation's bicentennial celebration, each person who came in contact with him would walk away impressed with his courtliness and old-world courtesy.

It was coincidental that I spoke to Ned a week before he died. We had not seen each other for many months, and so it was a pleasant surprise when my secretary told me that Dr. Gibson was on the phone. "Coleman," he said, "some of my colleagues at APL have developed a new device which has application to the telecommunications industry, particularly to areas in which Atlantic Research is involved. They are looking for some commercial organization which might be interested in developing it under license. How about being my guest at the Cosmos Club for lunch tomorrow, where I can introduce you to the man who's running the project and he can tell you about it." "I'd be delighted," I replied. "Whether or not there's a potential business relationship, it's always stimulating to get together with you. Perhaps while we're at it, we can talk about how to solve all the world's problems." We laughed, agreed to meet in about a week, and hung up.

The day before the appointment, Ned's secretary called to cancel the lunch date because he was not feeling well. The day after that, I heard that he had died.

I was not a close personal friend of Ned Gibson's, but just one of those people whose lives he had touched. But during our relationship, I learned a great deal from him and developed an overwhelming respect for him. It's hard to say whether the world's problems will be solved; but if they are, it will be because of the knowledge, the consideration, and the gentleness of people like Ned Gibson.

### **Robert R. Newton**

*Principal Professional Staff,  
Space Department, APL*

When I first met Ralph Edward Gibson, he was 43 years old and in the full maturity of his great powers. At that time, he was director of the Allegany Ballistics Laboratory (ABL), then a part of The George Washington University where he had taught part-time for many years. There he assembled a truly remarkable group of people. The people there who are now at APL are A. Kossiakoff, W. H. Avery, R. J. Thompson, and I. The group at ABL also included the late Frank T. McClure and R. B. Kershner. Everyone at ABL was dedicated to winning World War II, and our contribution was to develop rockets for the Department of the Army, which at that time included the Army Air Corps, ancestor of the U.S. Air Force. Among other things, we developed the bazooka, which was an important element in antitank warfare, and the air-to-ground rockets used by the Air Corps.

At the end of World War II, those I have mentioned, except R. J. Thompson, W. H. Avery, and myself, came to APL. Instead of coming here immediately, I tried teaching at the University of Tennessee and at Tulane University, and I worked part-time at the Oak Ridge National Laboratory. However, I could not find anywhere else the professional stimulation and the exciting friendships that I had found with the group that Dr. Gibson had assembled, and I came "home" to APL in August of 1957. Thus I was lucky enough to be in at the beginning of APL's space program. I was impressed by the way Dr. Gibson followed all the important developments in the program. In addition to his wish to be informed immediately of any major new developments, he spent a substantial amount of time with me several times a year, going over the progress in the part of the space program that I had the opportunity of supervising. He did the same with the other people in my position. He followed the programs with intense interest, and the way he kept up with new developments was an important component of his leadership.

Dr. Gibson was a highly talented scientist, but, perhaps more important, he had an outstanding gift for picking people and for leading them, and an outstanding vision that told him the directions APL should take. It has been a privilege to have been a friend of his most of my life and to have derived my most important professional opportunities from his leadership.

### **Paul M. Gross**

*Professor Emeritus of Chemistry,  
Duke University*

My acquaintance with Ned Gibson reaches back nearly 50 years to the 1930's. In physical chemistry,



my own field, there was at that time great interest in solution theory, and many meetings and symposia were held focusing on that topic. The list of participants included such names as Debye, Onsager, LaMer, Falkenhagen, and many others.

Ned Gibson had come from Great Britain to join the Geophysical Laboratory in Washington. He had had an early research interest in solutions, and attended and participated in many of these meetings, as I did. We soon became fast friends. This friendship broadened to include visits to our laboratories – his in Washington and mine at the Chemistry Department of Duke University in Durham, N.C. Over the years our families became acquainted and visited back and forth. Later one of Ned's sons was an undergraduate at Duke and received his bachelor's degree there.

As the 1930's passed and World War II began, our scientific paths in support of the war effort diverged. Ned had been a member of NDRC in its early days, became Director of the Allegany Ballistics Laboratory in 1943, then moved to APL in 1946 and became its director in 1948. I ran an Air Corps project that led to the development of the "frangible bullet." This was a plastic 30-caliber training bullet loaded with powdered lead, of which 40 million rounds were produced for training machine gunners for the 8th Air Force.

Following the war the Army realized the continued need for research to undergird its increasingly technical equipment and defense problems, as the Navy had in earlier years through the establishment of the Naval Research Laboratory. With the backing of Brig. General Chester Clark, a physical chemist of note who was in charge of Army research at the time, a research support center for the Army was established. It was located on the Duke campus and was known as the Army Research Office, Durham (AROD).

AROD had various functions. One was to fund basic research in universities and elsewhere that would provide backing and new information needed for the Army's applied technical projects. A second was to provide scientific help in solving a wide variety of problems that arose as the Army developed and used its increasingly technical arsenal.

As such problems arose, they were often referred to a panel of scientists known as the Senior Scientists Steering Group of AROD, of which I was the chairman. For this service we were able to recruit top-level scientists with the knowledge and background needed to deal with the problem involved. The list was long and included names such as Debye, Eyring, and Teller.

In 1956 Ned Gibson was asked to serve on the Group and continued to do so in later years as long as it was convened. In its operation, the Group would usually meet for a day or two at the Army installation where the problem originated or was being dealt with. The problems encountered ranged from such questions as why the Army's instrumentation in-

stallations at one of the nuclear test shots on a Pacific island had failed, to supposed environmental hazards for wildlife survival in a large area of the Rocky Mountain Arsenal. In that area, which was fenced in and guarded, thousands of bomblets for Air Corps use were stored in well spaced small huts awaiting safe destruction and disposal under an international agreement, in Truman's term, not to use chemical munitions. A study of the state of the wildlife showed that it was thriving happily in guarded seclusion and busily propagating.

Soon after Ned joined the Group, he became a member of a smaller core unit consisting of myself, AROD director John Dawson, Debye, and one or two others. This unit planned and followed up on the work of the whole Group. With his Ballistics Laboratory and APL experience and with wide and effective Washington contacts, Ned Gibson always had sound suggestions as to the implementation of the steps to be taken once the nature of the problem was delineated and understood.

So much for Ned's scientific abilities and connections. There were many other areas besides the scientific in which he was interested and active. One of those areas in which he excelled was his activities as a musician. For many years he was the organist of his church in Washington, where he had formed and trained its outstanding choir group. On the occasion of one of his visits to AROD, Duke University was installing a new organ in the Gothic chapel. He spent an extra half day with us in Durham discussing the characteristics of the new organ with our Duke organist.

In all his varied activities, Ned commanded great respect and rose quickly to leadership levels. He was a warm and kindly friend to a wide circle of people.

Many aspects of his career and life reminded one of those attributed by tradition to "a man for all seasons." It was a privilege to have known him as a friend and to have worked with him as a colleague.

### **Wilbur H. Goss**

*Assistant Director, Technical Evaluation,  
APL, 1942-1965*

As is true of many men of distinction, Dr. R. E. Gibson's career accomplishments were paralleled by a private life in which he prized the simple things – music, family, friends, conversation, and gardening. An evening with the Gibsons began with a tour of the garden, often followed by a musical treat, but invariably ending with hours of lively and delightful discourse. As a conversationalist, Ned was peerless.

Nor were these personal qualities confined only to his private life. During all his years as Director of the Applied Physics Laboratory, each annual salary adjustment of a member of the senior staff was accompanied by a personal letter from Dr. Gibson, noting



one's accomplishments and expressing his appreciation for a job well done. It was Dr. Gibson who initiated this practice, which I believe has been followed by his successors.

For years there hung on my office wall a motto by an unknown author, "There is no limit to the good a man can do if he doesn't care who gets the credit." The exemplary character for this motto could well have been Dr. R. E. Gibson. Never, in all the years I knew him, did he ever exhibit the slightest hint of personal egotism. A truly humble man, the credit was always given to others.

Finally, something needs to be said about the integrity of the man. He will be remembered as one of that special group who would rather go down in defeat than compromise a principle. When ethical issues or the security of the nation were involved, Ned Gibson was unyielding. His imprint is stamped indelibly on APL and in the hearts of those who were privileged to be his friends.

### **Joe T. Massey**

*Advisor, Biomedical Programs Office, APL,  
Associate Professor, Biomedical Engineering, JHMI*

The following are isolated recollections from interactions with Ned Gibson that I have fondly retained in my memory over the years.

In the late 1950's, Dr. Gibson called and asked me to drop by his office. He indicated that Ferd Hamburger, head of the Johns Hopkins Department of Electrical Engineering, was in a jam. Don King, one of the senior professors, had resigned precipitously, leaving a major electrical engineering course, scheduled to start within a week, without a competent instructor. Dr. Gibson asked me to take the responsibility for this course on microwave transmission, noting that it was one for which, at that time, there were no adequate textbooks. I asked that he find someone else since my boss, Frank McClure, had just given me the responsibility to open up a new research area in the Research Center. Dr. Gibson said, "OK, Joe, I'll look for somebody else."

In a couple of days he called back. When I walked in he looked up and with the usual twinkle in his eyes said, "Guess what, Joe. I wasn't able to find anybody else." Then he made two comments: that he had talked to Dr. McClure and had advised him not to expect more than the maximum from me during the year, and that he had talked to the Naval Weapons Representative about my having to leave at 4:30 in the afternoon to make the class at 5:00 at Homewood and that the NWR said, "Don't worry, Ned. I know Joe; he'll make up the time."

At the start of Dr. Gibson's directorship there was no well-stated policy that outlined the conditions under which staff could do private consulting work in their outside-of-Laboratory hours. On one occasion, my services had been requested for a weekend

and I went in to see Dr. Gibson, noting that this work would serve the national interest. His answer was typical, "Joe, don't forget I own you, and the fact that I give you two days a week [or I guess at that time a day and a half a week] off from duties at the Laboratory, doesn't mean that you can do anything you want. You are supposed to go home and rest, eat, and come back feeling like a tiger on Monday morning. However, this one time, go ahead."

In the early 1970's, just after the establishment of the National Academy of Engineering, a Committee on the Interplay of Engineering with Biology and Medicine (CIEBM) was formed. The Johns Hopkins University was preparing a report for this committee, with many recommendations as to how to foster this kind of interaction. There were 40 or so people involved. Those from APL were Ned Gibson, Frank McClure, Al Schulz, and I. I remember one meeting at Homewood that lasted through the lunch hour until about 3 o'clock, when the four of us left in Dr. Gibson's car, with Bob Moody driving. Mac was carping all the way back because he had run out of his special brand of small cigars, was hungry and needed a martini. Finally Ned said, "Mac, if you'll just shut up I'll see to your needs as soon as we get back to the Laboratory." We all went to Dr. Gibson's office, where he ordered a late lunch. As was his habit prior to such a lunch, he went around and said, "What would you like to drink? The options are sherry or martini." Thinking that a martini was a colorless liquid in a small glass most of whose volume was occupied by an olive, I opted for it, forgetting that Frank McClure also ordered martinis. Subsequently I was served a McClure martini, which was an oversized iced tea glass full of a very dry martini mix with no olive. It was 8:30 that evening before I felt I could safely leave the Laboratory and drive home.

Ned Gibson and I, as members of the faculty of the Biomedical Engineering Department, became involved in the affairs of that department. On one occasion I was driving Dr. Gibson and myself to a faculty meeting on a Wednesday afternoon, the day before Thanksgiving. Traffic on the Baltimore-Washington Parkway was heavy. I entered it cautiously and after a while became settled in the inner lane of the two-lane section approaching Baltimore. Shortly, along with another car, I was pulled over, being charged with proceeding at 70 mph (subsequently I fought this case and won because it was ludicrous to assume that in that traffic I could have been going anywhere near 70 mph). When the policeman had finished writing the ticket and we were proceeding toward Baltimore, Dr. Gibson said, "Joe, were you doing only 70?" and I remembered that under normal conditions in his Audi, Dr. Gibson might be proceeding on I-95 toward the Laboratory or Baltimore at 80 or 85 mph. So I said, "How do you avoid being tagged frequently, Ned?" and he responded, "Oh, they take a look at me and say that old man wouldn't be going 85 mph and just turn away."



Reflections such as these illustrate some of Ned's basic principles and his keen sense of humor. With a bit more seriousness, I feel that other than my parents and Frank McClure, Ned Gibson probably had more to do with my life and career than any other single individual. He provided an environment that was conducive to accomplishing the results he wanted, provided challenging problems to solve, and provided the leadership to motivate me to give him the very best that was in me at all times. In short, he asked no more or less of a person than the absolute best that that person could produce.

I regarded Ned as more of a father figure during the tenure of his directorship. However, in his post-directorial endeavors I became much more closely associated with him, almost on a daily basis, and was able to see the intense interest and curiosity that drove him to make significant contributions in any endeavor that he undertook. This is why he was drawn to the association with Dr. Richard J. Johns and the Department of Biomedical Engineering in the Johns Hopkins Medical Institutions. He felt that medical science was an inexact science that could be improved by applying the basic principles of the so-called "hard" sciences and that this approach was one that formed the basis of the discipline of biomedical engineering. His contributions in this area are recounted elsewhere. They were "significant," which is, I believe, how he would have wanted them described.

### Samuel N. Foner

*Principal Professional Staff,  
Milton S. Eisenhower Research Center, APL*

Many people are aware of Dr. R. E. Gibson's outstanding career as a scientist, an educator, and an administrator of large research and development organizations. I would like to focus on a facet of his career that in my opinion has not received adequate attention: his personal involvement in the affairs of APL at the working level.

During Dr. Gibson's tenure as director of the Laboratory, he frequently took time out from a busy schedule to visit various activities in the Laboratory and, when appropriate, to offer advice and encouragement. This was greatly appreciated.

I was privileged to have him drop in to my laboratory on many occasions. Usually, he would ask me what we were doing, and I would bring him up to date on our latest scientific endeavor (or misadventure). In the ensuing discussion, he would typically ask incisive questions on the problem and would often tell us of related work being done elsewhere. Indeed, he visited our laboratory shortly after Dick Hudson and I discovered the long-sought-after hy-

droperoxyl ( $\text{HO}_2$ ) free radical in 1953, and communicated this information to his colleagues, both here and abroad, well before our report on the work was published.

Generally, these informal visits were very pleasant and we looked forward to them. Yet there was one occasion, which I cannot forget, when, after I finished describing an experiment in progress, Dr. Gibson abruptly cut short his visit and left with unusual haste. This occurred in 1956, when we were conducting some experiments on ozone. Let me first give the background for the episode.

We had been helping the Public Health Service on a special ozone study related to ozone toxicity and smog generation. At that time, we had at APL the only available instrumentation (a modulated molecular beam mass spectrometer) capable of detecting various free radicals, such as OH and  $\text{HO}_2$ , that had been suggested as causing observed differences in the toxicity of "ozone" generated by different ozonizers. After this work had been completed, we decided to do a separate study on the mass spectrometry of ozone itself.

The ozone was prepared by subjecting oxygen to an electrical discharge and trapping the ozone produced in a glass bulb at liquid nitrogen temperature. Then we ran into a technical problem. The vapor pressure of ozone at liquid nitrogen temperature ( $-195.8^\circ\text{C}$ ) was much too low (less than 0.1 Torr) to inject into the mass spectrometer sampling system as it was configured. This ruled out the use of conventional cryogenic materials, such as liquid oxygen or dry ice. We needed to find a cold bath substance with a boiling point of about  $-160^\circ\text{C}$ . A quick check in the *Handbook of Chemistry and Physics* showed that we were in luck and that methane, a readily available material, has a boiling point of  $-161.5^\circ\text{C}$ , at which temperature ozone has a vapor pressure of about 12 Torr. There was no difficulty in liquefying a liter of methane by sending methane from a compressed gas cylinder through a copper cooling coil immersed in liquid nitrogen.

We put the glass bulb with liquid ozone into the Dewar filled with liquid methane and were proceeding with the experiment when Dr. Gibson happened to walk in and ask me what we were doing. Admittedly, liquid ozone is not a very stable material, but does not by itself present a particular hazard if it is not mechanically shocked or exposed to electrical sparks. However, in combination with organic materials it is a different story. We were very careful in running the experiment, especially to avoid breaking the glass bulb with the liquid ozone, since this possibly could have produced a fireball five to ten feet in diameter, which would have engulfed the apparatus. My explanation of the experiment to Dr. Gibson went on beautifully until I got to the business of what we had put in the Dewar for the low-temperature bath. With obvious misgivings about the operation, he wished we would get the experiment over with, and abruptly departed as a sign of concern over the



potentially hazardous setup. He was, however, obviously quite interested in the experiment, because a few days later he asked me how it had turned out.

### **Robert J. Thompson, Jr.**

*Supervisor, Technical Information Branch, APL*

I enjoyed the privilege of association with Dr. R. E. Gibson at two periods separated by nearly 30 years: during World War II when he had just made a mid-life transition from outstanding research scientist to outstanding research manager, and again after he had ostensibly retired from active management, but continued to provide wise counsel, delightful conversation, and warm friendship to those who sought the pleasure of his company.

In 1943 I came from the University of Rochester, where I was a graduate student and instructor, to The George Washington University at the invitation of Frank T. McClure (then a member of the Rochester faculty) to work with him “for the summer.” That “summer” – which turned out to be 32 months long – was the most exciting, instructive, and decisive experience of my young life. At the time I returned to the university to complete my Ph.D. requirements shortly after the war, I had acquired more real education and maturing experience than from all my prior schooling, had completely altered my career goals and plans, and, far more important, had gained a wonderful wife (a GWU student who also worked for Dr. McClure) and a group of wonderful lifelong friends, notably including R. E. Gibson.

Dr. Gibson’s leadership skills had attracted to the Allegany Ballistics Laboratory a uniquely talented group, several of whom later joined him at the Applied Physics Laboratory: Alex Kossiakoff, Frank McClure, Dick Kershner, Bill Avery, and Bob Newton. Just to spend an evening with Dr. Gibson and his associates was a liberal education. Like all his associates, I recall Dr. Gibson’s inspiring leadership qualities: the breadth and brilliance of his intellect, his technical insight, his insistence on absolute intellectual integrity and excellent workmanship, his unswerving loyalty to his associates. Particularly impressive were his unerring ability to pinpoint key problems and his insistence, in spite of the wartime urgency for products, that in order to build successful devices one must understand the physical principles underlying their operation. The broad basic understanding of rocket propulsion systems acquired under his leadership in barely three years has served the nation well to this day.

But I think even more important to Nancy and me were Dr. Gibson’s unfailing warmth and kindness. Busy as he was, he took the time to know his younger associates personally. He often dropped by at work to get a quick update on the current project – and

usually made a useful comment or suggestion – or simply to share a joke or a bit of philosophy or erudition. Outside of work, he ate with us and invited us to the hospitality of his home. His fabulous breadth of knowledge and interests was not limited to the details of all the work he directed or to the world of science and technology; it ranged over the arts and humanities from Biblical scholarship to a seemingly endless store of anecdotes, jokes, songs, and limericks appropriate to all occasions, both polite and ribald. I count myself unusually fortunate to have worked under his leadership early in my career.

After nearly 30 years spent elsewhere in the aerospace community culminating in over a decade of very exciting and rewarding participation in the development of manned space flight systems, I came several years ago to APL, the house that Gibson built. Although I had been continuously aware of APL’s excellence from a distance, I soon gained a fuller appreciation of APL as a national resource, Dr. Gibson’s living monument. Among my greatest satisfactions was the renewal of old friendships, and none more so than Dr. Gibson. His scholarship and wisdom had ripened over the years, his charm had, if possible, increased, and his wit was as sharp as ever.

When APL started to develop a graduate education program for technical managers, Dr. Gibson often joined Dr. Kossiakoff and me for lunch, where we discussed the art of research management. While we despair of being able to teach adequately what he so well knew how to do – establish farsighted goals; select important problems to work on; select, motivate, and lead creative people to do more than they knew they could – we gained wisdom from his insights.

Four years ago, I asked Dr. Gibson’s permission to use in our courses a series of outstanding articles on research management that he had published in 1962-63. Characteristically he immediately reread them and decided they could be improved by some rework. This ultimately led to three largely new articles on the subjects of research management, human communications, and planning, which are now incorporated into the Technical Management curriculum and have been published in part in the *Johns Hopkins APL Technical Digest*. Dr. Gibson first delivered, in person, his lectures on research management and communications in APL student classes during his eighty-first year; the article on planning was completed only a month before his death and published posthumously. We have found nothing in the management literature to equal the insights, clarity, and felicity of his work. It seems fitting that he concluded his long and illustrious career with a valuable contribution to the education of future R&D managers.

Dr. Gibson enriched all of us who were privileged to know him.

He was a man, take him for all in all,  
I shall not look upon his like again.