

CHAPTER VIII

Reflections

During the years after World War II Vanderbilt, a regionally superior and nationally respected School of Medicine, made a bold and risky decision to try to become a nationally front rank, research-oriented Medical Center. This was done in the full knowledge of its limited local financial resources. It was also necessary to overcome a very strong local sentiment that was quite content with high regional standing. By 1993 I think it fair to say the School of Medicine has succeeded in achieving its national goal. Multiple supports for this assessment are available from external sources, both professional and popular. Some have been noted in this history. This achievement is due to the excellence of its faculty and to their persistence and success in competing for extramural funds wherever they could be found. Credit is also due to the shrewdness of the administration, especially Randolph Batson, Vernon Wilson, Ike Robinson and John Chapman, in husbanding and carefully directing the use of the limited resources it commanded. Each man had different ideas and emphases but never lost sight of the commitment to research excellence. Achieving this while maintaining the already superb quality of medical education at Vanderbilt was not a simple task.

Throughout, the Department of Biochemistry has been a cornerstone and a nucleus of this achievement. Few research-oriented candidates for faculty posts in any Vanderbilt department failed to include key Biochemistry faculty on their recruitment "tour." Any list of honors, of crucial University committees, indeed of any leadership or scholarly aspect of the School of Medicine or the

University will include multiple members of the Biochemistry faculty.

This international recognition for research excellence that was so hard won has been retained into the new millennium despite ever increasing competition for federal support for basic biomedical research and the vastly increased emphasis on commercialization of research. Vanderbilt has clawed its way from a small, fine regional institution into a place among the top twenty medical schools in the United States. It has reached even higher ranking with some of its departments including Biochemistry. This is a history of which everyone involved can be proud. Yet history also tells us there is no room for relaxation. One either goes forward or backward. John Chapman's successor, Dean Stephen Gabbe, has raised the target of becoming one of the top ten medical schools by 2010. He certainly has a solid base on which to build, and Biochemistry, under Mike Waterman, is surely ready to do its part.

The recent impact of biochemistry upon biology and medicine, especially in the areas of molecular structure and molecular biology, has been spectacular, opening up possibilities for research and clinical care that were unimaginable 50 years ago when I came to Vanderbilt. The Department of Biochemistry at Vanderbilt has taken and continues, with Waterman's leadership, to take a prominent role. The School of Medicine, too, has shown a continuing commitment to science in the remarkable series of new buildings devoted primarily to research. Since laboratory space is an absolute requirement for the attraction of talented faculty and extramural research support, this is encouraging for the future. We have come a long way from Learned Lab in 1953! Ike Robinson, Vice Chancellor in the 1970s and 1980s, deserves great credit for removing the "spatial" restraint on the growth of research at Vanderbilt. The recent renewed spurt in construction bears the mark of Robinson's successor, Harry Jacobson. This physical growth has occurred during a period when Congress doubled funding for biomedical research through the National Institutes of Health. More recently, we were reminded that we always have to keep looking over our shoulder as political and economic tides shift.

The sudden need in 2003 to pay for a war and a national defense against terrorism threatens the increases in health research funding. A simultaneous economic downturn, hopefully cyclic, has affected the philanthropic base upon which Vanderbilt has always depended. Viewing this in the light of our success with past hurdles, however, gives one strong confidence that the steady progress of Vanderbilt University School of Medicine toward the very highest ranking will continue.

The value placed by C.S. Robinson and other early Vanderbilt faculty upon having the basic science and clinical faculties together under one roof has proven prophetic. Although there is a normal tug of separation between professional goals, the cooperation, mutual understanding and respect nurtured by close association have played a significant role in assuring the very high quality of teaching, research and clinical care at Vanderbilt's School of Medicine. The recent vast physical expansion of the Medical Center will place a strain on this close association unless great care is taken.

Biochemical knowledge and understanding are constantly being absorbed by, and sometimes transform, other areas of biological science. Biochemistry itself must, I believe, always have a solid base in chemistry. Although the discipline itself could comfortably return to its home in chemistry, my belief, happily still shared by most leaders of medicine, is that Biochemistry will continue to remain a department in Schools of Medicine, serving as an essential fundamental nucleus of innovation in medicine and the biomedical sciences.

The continued strength of the graduate program in Biochemistry is encouraging. I do harbor reservations about the current partial amalgamation of the basic science graduate programs. Although other biomedical sciences have perhaps less need for chemical training, it is my belief that the strongest possible base in chemistry is extraordinarily helpful for a creative career in biochemistry. The erosion of this base at Vanderbilt, especially in physical chemistry, seems, alas, likely to be accelerated in the present combined biomedical sciences graduate program.

In 2002, Vanderbilt University eliminated the post of Dean of

the Graduate School and placed graduate studies under an Associate Provost. My long involvement with the Graduate School at many levels, including chairing the search for the most recent Dean, raises my concern about this change. The professional integrity of graduate study at Vanderbilt, especially the Ph.D. and especially in the Medical School, is a sensitive matter. In the earliest days of the University, the graduate program was dominated and controlled by the College of Arts and Science. The creation of an independent Graduate School with its own Dean was a major step toward the high quality graduate programs now found throughout the University. The School of Medicine especially benefited since its primary professional focus is necessarily on the M.D. Over the years since the late 1940s, the graduate programs within School of Medicine departments have prospered. The enlightened support and encouragement of the School of Medicine administration has meshed well with the supervision of professional training and degree standards by a Graduate School faculty and Dean focused primarily on the Ph.D. degree. In my view, the disappearance of a Graduate Dean detracts from the stature of graduate degrees and has the dangerous potential of placing the maintenance of professional standards for graduate academic degrees, the M.S., M.A. and Ph.D., including new programs, in the hands of other professions.

It was a special honor for me in 1995 when the Department created an award in my name for the outstanding third year graduate student in Biochemistry. Certainly a strong graduate program has always been one of my personal priorities. I am extraordinarily proud of the talented men and women who have studied with me and with other members of the Biochemistry faculty. Together we have made important contributions to American biochemistry and medicine. A strong graduate program is absolutely essential for the health of an academic department and for the future of the discipline. Then, too, there is nothing more satisfying than seeing a former student, fully independent and enjoying real success in his or her chosen life's work.

I have only a very few concerns about the future of biochemistry and of biomedical research in general. The first is an apparent

decrease in independent research funding for young investigators. In the face of greatly increased funding for biomedical research, the proportion of grants approved for investigators 35 and under has gone from 22% in 1982 to 4% in 2002. The proportion for investigators 56 and older went from 9% to 20% during the same period. Donald Kennedy reported these figures in a recent issue of *Science*. From this and other signs, one can sense an old worry, a steady institutionalization of “big science” in the biomedical field: bigger and bigger grants going to fewer and more senior investigators. There are sound reasons for some of this, of course, but we must also take care to liberate the natural creativity of younger scholars by letting them have a go completely on their own while they are young and unencumbered by dogma. In Europe and Japan they are struggling to develop a system like our own, and we must be certain we do not pass them going in the opposite direction.

Secondly, I have the most serious reservations about the accelerating intermingling, even merging, of commercial and academic interests within the walls of the University. Certainly, money plays a positive, essential role, both for research and for the personal benefit of the faculty. And the excitement of hoping for an immediate impact of one's research upon human disease is an important stimulus. Something within me warns, however, that any failure to manage the long run impact of this marriage can powerfully reduce the *new* nuclei of creativity that drive the whole process. It is said that, in finance, bad money drives out good. Perhaps this aphorism is relevant to biomedical research. The tide seems presently irresistible, and Vanderbilt clearly must go along if it is to recruit outstanding faculty. Perhaps, however, some space will be reserved for the budding Stan Cohens and Jim Watsons. I believe they would have found the idea of selecting a research problem for its immediate relevance and financial potential a betrayal of their own inner motivations. There are many different kinds of research, all valuable, but all arise ultimately from the original thought of an individual working on the most fundamental questions we can ask of nature.