Dr. Rawson, Ladies and Gentlemen:
Life is full of strange facts. One of the strangest, I suppose, is that although I am deeply conscious of the honor of addressing this gathering, the prospect of having to do so has taken a dreadful toll of my 17-hydroxys and my catecholamines. What to do has been the problem. I was struck by one very appealing thought. It had the advantage of great originality and was one that you, as a captive audience, would have endorsed with unrestrained enthusiasm. The thought was to be the first holder of this office not to make a presidential address. The remission of symptoms of perturbation was wonderful but temporary. What disturbed me was the thought of all those people from Harvard who would be at this banquet through no choice of their own. Let me now assure them that with such a good showing, payment of their salaries next year will no longer remain a problem. The gnawing consciousness of the standards set by my predecessors on these occasions accentuated my private agony. One commented that he had sought deliverance in vain through an act of God. In the past few weeks, I found myself viewing the advent of an atomic holocaust in an entirely different light. The stockpiles of these horrendous weapons were reported to be plentiful and the prospects were excellent for such a thorough job that this meeting might have been postponed indefinitely. What happens?—brinksmanship declines. Then for a short spell I gained some encouragement from discussions in Washington concerning the outstanding contributions of heart disease, cancer, and stroke to the vital statistics of an affluent society. But my hopes for early admission to some happy hunting ground were dampened by finding my family tree devoid of any of these mechanisms for the control of longevity. Where things are left to chance, I have never been blessed with luck. Occasionally, I have the opportunity to visit those so-called open areas of the West where fortunes are made and instruments of chance stand smartly at the ready. Even those, with one arm amputated, swallow my dimes with insatiable appetite. My pockets empty, some venerable woman bending to the weight of a money bag steps up and shakes hands with the thing. After a moment's hesitation, sounds of vomitous retching come from within, mechanical sphincters loosen, and thick torrents of coins spew forth.

Speaking of chance brings to mind an offshore fishing party involving three clerics: a Presbyterian, an Anglican, and a Jesuit. As the early morning wore on, the Presbyterian suggested that he go ashore and bring breakfast, whereupon he stepped overboard, walked ashore and returned with breakfast. At noon, the Anglican volunteered his services and he, too, walked ashore and returned with lunch. As he stepped into the boat, the Jesuit, striving to conceal some mounting anxiety, swallowed a bit hard. They fished on and when it came time for tea the suggestion was put forward that the Jesuit take his turn. With no alternative but to chicken out he stepped overboard and, plunk, immediately disappeared from view. The Anglican
turned quizzically to the Presbyterian and said, "Do you suppose we should have told him where the stepping stones are?"

Basically, the thing that has troubled me most about this assignment is that it helps to destroy an image that I had cultivated for many years, namely, that of an academic sphinx. Reared in the great open spaces, my constant companions were horses or mules with whom I communicated by rein or the crack of leather, and occasional recourse to expletives that some years hence were to be identified as the Free Speech Movement. Later, when tractors made it possible to rim an expanse of acres through all of the daily photoperiod and some of the dark phase, the communicative mechanism underwent disuse atrophy. This carried over into graduate days, as one of the feedbacks from my oral prelim was that the examiners were relieved to find that I had a voice. Apparently any consideration of the mind was secondary to that of its outlet—or perhaps better, its exhaust. It must be some kind of commentary on life that while our social mores deplore reticence and taciturnity, the surest route to trouble is through the exercise of speech in which I must now engage—at some peril.

I propose now to examine the posture of Endocrinology as a specialized branch of knowledge and as a career field among the biochemical sciences. To my knowledge, this has not before been attempted in writing. I have made no special study of these matters and am, therefore, unencumbered by facts. By the same token, I am at liberty to draw on a reservoir of personal opinion which is entirely self adjustable. It is not my intention to sound the alarm or make predictions or recommendations. The plan is simply to take an insect's eye view of our domain, squinting through different ommatidia at various pieces of the mosaic that constitutes this vocational area.

As a biochemical science, endocrinology is indeed a late comer. There was a gap of over three centuries between Harvey's discovery of the circulation and the bringing to light of the next and last major bodily system, the hormone producing glands. This may explain why endocrinology in relation to the older and established disciplines finds itself in much the same position as that of a new kid who has just moved into the neighborhood. Among the hierarchy of basic biological sciences endocrinology occupies an entirely anomolous position—it is a scientific orphan. Adopted as an infant by anatomy and zoology, it found a home during its adolescence in physiology and later in biochemistry. It has now come of age and has made friends among the biomedical sciences on a wide scale. It is in the nature of our science that it touches on problems in virtually all areas of biology and medicine. By these same attributes endocrinology lacks the benefits of departmental status with instructors and investigators holding titles in endocrinology. I am not arguing that endocrinology should have departmental status—it probably shouldn't. Conversely, abandonment of the existing but outmoded departmental structure of our tribal biomedical sciences is clearly indicated. They represent a medieval framework for 20th century science. But let us not be diverted. Endocrinology is sort of an academic octopus held together by bonds of strong mutual interest and by a nerve center located in Oklahoma City. It is widely theorized that this may also be the reservoir for reserve fat of a most valuable and strength giving variety. It is another strange fact that most meetings such as the anatomy, physiology or pharmacology meetings are attended mainly by people holding appointments in the respective discipline but of the people attending the meeting of The Endocrine Society few bear an official label in Endocrinology. Yet we are the most cohesive group of any that I am familiar with. People who become endocrinologists do so out of a strong individual determination. Endocrinologists are not recruited—they fight their way in. Under such organizational circum-

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stances, one may well question how endocrinology is to look after its own best interests as a branch of learning. For instance, what arrangements exist to assure sophisticated instruction in this subject? As nearly as I can ascertain, these matters are entirely haphazard and, for the most part, subject to the whims of departmental chairmen who have strong interests in other directions. There is now a massive volume of established knowledge in endocrinology, yet in the great majority of our institutions of higher learning instruction in this subject is lacking or worthless cursory. Among graduate and medical schools the situation is better and improving but it still has a very long way to go.

Our most serious handicap is that we do not have a mechanism for looking after the training of our own students. It is worth noting that he who occupies the driver's seat plans the course and does the steering, and by a happy circumstance endocrinologists have come to occupy quite a number and variety of headships. This trend, which will likely continue upward, has over the past 15 years contributed substantially to the expansion of instruction, and training opportunities as well as research in endocrinology. This, however, is not a systematic approach to the problem and again it is only a beginning. The large task lies ahead, for I think I speak the mind of all of us in stating that endocrinology is not a dispensable component of the life sciences. It should be taught universally as a part of general biological education. There is no branch of knowledge more pertinent to an understanding of the biological basis of life. Although of great human interest and appeal, there are few fields about which the intelligent layman knows less than he does about our area. This in itself is an index of how poorly such knowledge is made available. Despite the layman's invariable curiosity about hormones, he still has the erroneous notion that the information is to be found in such publications as Redbook or the Ladies' Home Journal among others. It is a pity that we make such feeble efforts to share this new-found information with the intelligent public on a comprehensible basis. This we leave to journalists and publicity seekers, who usually color the facts with sensationalism, to our dismay. We are also the ones that should be leading the way in the presentation of sex information on an academic plane. Our role is limited mainly to criticism of those who try. As guardians of our area of scientific inquiry we have developed a false snobbishness which dictates that we must only communicate with one another and that only in the esoteric language of science.

The matter of preparation for career opportunities in this anomalous field of science deserves comment. How in fact does one become an endocrinologist? In the generation of Evans, Smith, Hisaw, Collip, Hartman, Moore, Doisy, Corner, Riddle, Swingle and others, it was customary first to master a discipline such as anatomy or zoology and secondarily to acquaint oneself with endocrinology on what would now be recognized as a moonlighting basis. For them the opportunities for postdoctoral training were limited and fellowships were rare, as they were for my generation, which includes those of us who are within sight but not swimming distance of the shores of retirement. Today the situation is not totally reversed but it has certainly changed. Graduate students heading into the endocrine field pay homage to the discipline of their degree candidacy mainly by taking the required courses. Their doctoral dissertation takes them deep into endocrine research. After the Ph.D. they head straight into a postdoctoral fellowship for two to five years. The situation is no different for the neonatal M.D. who has completed intern-residency training and spent several years in an endocrine laboratory. The necessary research experience for successful work in endocrinology is often gained at the neglect of the foster discipline, be that anatomy, biochemistry, medicine, or what not. The result is that by the
time well-trained endocrinologists are in the market for job opportunities they are in fact endocrinologists first and they are looking for positions where they can teach and do research in the area of their special competence. Consider that there are few academic positions labeled endocrinology and you will appreciate the rather perplexing predicament that faces many who prepare to compete successfully in this rapidly advancing field. If one chooses the academic life he will in most instances be required to earn his bread and butter in a traditional department. Since the chairman often finds such applicants expert at digging a hole but with little experience in plowing the field, the terms of employment are often not as competitive as they should be. It is mainly for this reason that a disproportionately large number of our trainees go to industry, government laboratories, or research institutes where they can pursue their special interest. Actually, the opportunities are quite good, but finding the right one often takes a bit of doing. It is to this end, and at the instigation of Dr. Seymour Leiberman, that the Society is considering the creation of a Placement Service. It is certain that the growing need for trained manpower to expand endocrine teaching and research at home and to help the developing nations get started will increase sharply over the next ten years.

Viewed through another ommatidium, endocrinology is seen as a Cinderella science. Her fairy counterpart, the cinder girl, was scorned and ignored until her queenly qualities were detected by some fancy footwork. In like manner, endocrinology as a maiden science suffered avoidance, as though hers was less than 24-hour protection, but all's well that ends well, and happily her remarkable powers and her fascinating qualities were finally revealed. Now she is a glamor science blessed with appeal, including that which each new generation redisCOVERs, rich in public funds and object of envy by certain of her now aging and dowdy, if still proud, sister sciences. What other science can claim the Pill and Pergonal, not to mention HCG and T₅, or the IUD and Compound E? The endocrines are nature’s gift to man and beast. Without them he can neither grow nor reproduce. They are the guardians, not only of the quality of life, but of life itself. They are the architects of love and marriage, the paramount basis of every human social order. They are supreme commanders in the first line of defense, and it is to them, the co-ordinators of physiologic harmony, that we owe the priceless sense of well being. Small wonder that what the hormones do is mankind’s business. In witness thereof, it is enough merely to mention that today the civilized world is looking to the science of endocrinology to save it from the catastrophe of an impending tidal wave of humanity—a mission of global and sobering magnitude.

In contrast to this ominous note, the hormone field is enlivened by a touch of romanticism—as any editor soon learns. I was made keenly aware of this by an error in print that escaped my attention. As fate would have it, the paper was co-authored by none other than the editor himself. There at the head of alternate pages was emblazoned not “The enhancement of Relaxin,” but “The enchantment of Relaxin.” This stirred more spontaneous outpouring than all my other editorial mishaps combined. Letters came from everywhere, but those from France were especially to the point—mostly they just read, “Dear Docteur: Vive Les Hormones.” Another blooper which came close to enjoying public scrutiny had an even greater potential. The wording intended was “Rats in light-treated estrus,” but the goof in proof read, “Rats in light-hearted estrus.”

Now for a glance through an ommatidium of distant vision. We are in the early phases of a revolution in biology—the first since Darwin’s theory of evolution opened the mind of man to momentous new concepts. This second revolution, inaugurated by the deciphering of the genetic code, the synthesis of long chain proteins and the revelations of the electron microscope, coin-
cedes with the transition of endocrinology from its preliminary descriptive and analytical phases to that of the molecular basis of hormonal action and control. Although the hormones may be redefined as chemical signals and the endocrine field, as we know it, may mesh with molecular biology, nevertheless, the opportunities for discoveries where the stakes are the highest are indeed great. It behooves us to remain alert, not only to the changes that are taking place in our own ball park, but to what the boys are up to in neighboring lots. Everywhere the boundaries, which were makeshift to begin with, are now in a tumbled down state. It is to be hoped that we may retain our identity as a competing club, but if one stops to read the signs it would appear that the larger, and if you will, the final issues of this revolutionary era will be decided not by the pennant winners, but in the all-star games in which the best of many fields of science will work together as a team. In this game, it will matter little whether you are a Chicago Bear, but how great are the skills that you bring to the game.

Through another ommatidium, a global squint. Shortly before World War II endocrine research in the United States and Canada had begun to seriously challenge British, German, and French leadership. After the war, and with the aid of newly created Public Health Funds, the volume of endocrine research here experienced unprecedented expansion. In most of the war-torn countries of Europe it was several years before some endocrine laboratories could resume work; today there are many centers of excellence but the concept of realistic support is still somewhat lacking.

Before the war, it was the acme of opportunity to complete one's preparation for endocrine research by advanced work abroad. Now that is largely reversed. We are slowly awakening to an appreciation of our new role and, noblesse oblige, to the responsibilities that come with privilege. We have done well, but far more will be expected of us and of the handful of other countries in which endocrinology is in an advanced state. We must not be selfish with our gains or our position. The developing nations of the world will shortly need help in ways and on a scale matched only by the problems that will be involved. Some worry, lest in this sharing of know-how and resources, we may dilute our own efforts or lessen our standards—this, in my view, is a baseless concern.

Finally, an encompassing glance at endocrinology as a meaningful endeavor in the service of mankind. The foundations have been laid and as the beauty of the edifice on which we toil is slowly revealed, the incalculable expenditures of effort and resources all seem worthwhile. The edifice may stand eternal but at this point I would not have it obscure the means—the dreamers, the builders, the technologists. To visit an ancient cathedral or otherwise stand in the presence of the enduring and supreme works of man is to stir thought of the people who laid the stones, how they toiled, and of the vision and will with which they built. These majestic structures are the triumphs, not of kings nor of governments or churches, but of people, people who were deeply conscious of the mysteries of life and of the universe about them. Amidst these overwhelming uncertainties, they sought fulfillment and creative satisfactions through the fashioning of stone and statuary. Impelled by reasons of faith, their reach was upward. Their lofty spires even now dwarf the skylines of the 20th century and elevate our aspirations. The heritage which they left has ennobled mankind.

We, too, are collectively engaged in an imposing work—a more stately mansion, as it were. Our materials are unsolved problems, our tools are those of science. We trust that the results of our efforts may benefit mankind and be judged by oncoming generations as good and admirable. Impelled by intellectual curiosity, our reach is outward into the unknown. We work to widen the horizons of truth because we know that in truth, there is no greater and no more enduring beauty.