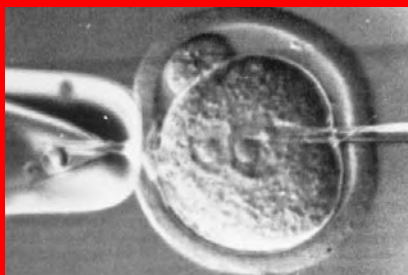


Animal Science at Cornell University

1963–2000

*Observations
and Reflections
of an Insider*

by John Murray Elliot



CORNELL

Animal Science at Cornell University 1963–2000 Observations and Reflections of an Insider

By John Murray Elliot, Professor Emeritus
Department of Animal Science
Cornell University

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Ithaca, N.Y.
January 2005

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Preface

In 1987, Kenneth L. Turk completed and published his *Animal Husbandry at Cornell University: A History and Record of Development from 1868 to 1963*. This labor of love, to which Ken had devoted many years of library research and countless hours organizing information and searching archived student records, resulted in an informative and detailed account of animal husbandry at Cornell from its beginnings, shortly after the university was founded, until he became the first director of international agriculture in 1963, following his 18-year term as head of the department. The book has since been sought and used by students, alumni, friends, and visitors. As time has passed, however, the gap between activities described in the Turk era and those of the current Department of Animal Science has become ever wider, and some years ago the question arose whether a new “historian” might attempt to close this gap. No one appeared anxious to undertake the task.

After I retired as chairman in 1991, I undertook a few volunteer activities in the department. It was broadly hinted on several occasions that I should be the one to update the history. I resisted doing so for several years but finally succumbed to Alan Bell’s persuasive argument and agreed at least to begin work on the project. Doug Hogue volunteered to assist me in recalling significant items and agreed to be frank in assessing the accuracy of my observations and comments. However, he declined an offer to serve as coauthor. I am particularly indebted to Doug for his insights, his service as a sounding board, and his many constructive suggestions. I am also indebted to a number of others, including two former chairmen who, without knowledge of what was already included, responded to my request for suggestions of what they considered significant items during their administrations. This served as a reality check for me and resulted in a few additions to chapters 3 and 5. The response from R. J. (Bob) Young, which was provided with some detail and perspective, has been included as appendix 4. Others, who read drafts and provided suggestions, corrections, or editorial changes, included Dale Bauman, Alan Bell, Bruce Currie, Jane Elliot, Bob Everett, Bob Foote, Lynn Polan, Wilson Pond, and Dick Warner. A few suggestions, with which I disagreed, did not result in changes. For this and other reasons, it should not be assumed that those who read drafts necessarily approved of the final content. With these few exceptions, however, an attempt was made to incorporate most suggestions into the next draft. I am particularly grateful to Alan Bell, whose encouragement persuaded me to undertake this project and who provided the departmental support necessary to see it through.

From the beginning it was agreed that this volume would be relatively brief, without some of the detail that characterized Ken Turk’s history. The computer and the availability of the World Wide Web have been useful in this regard. For example, some 44 pages of appendix in the Turk history were taken up with listings of former graduate students, their major professors, fields, degrees, and thesis titles. As part of this project I have updated this information and made it all (including that in the Turk book) readily available to anyone through our department web site (www.ansci.cornell.edu), rather than including it in the new volume. Although individual

faculty members have received numerous local, regional, national, and international awards recognizing their superior accomplishments in research, teaching, and extension, no attempt has been made to develop an exhaustive list of such honors. Where deemed appropriate, however, many of the more important of these awards are woven into the narrative.

The present effort also differs from Ken's in many other respects and is more accurately described as "observations and reflections" than as "history." Certainly, it is written in a more informal manner, in keeping with the somewhat more casual style that characterizes the department at this stage in its history. I am also aware that it is heavily laced with the personal experiences and viewpoints of the author, who would have found it more difficult to write from the perspective of an outsider.

There have been six department heads or chairmen since Ken Turk left the department in 1963 to become Cornell's first director of international agriculture. In this account, for purposes of organization, a chapter is devoted to highlights of department activities, accomplishments, and changes during each administration. Most of the information has been assembled from a combination of memory, department personnel and other files, department review documents, and discussion with colleagues. Unfortunately, the department archives are incomplete and highly disorganized. Nonetheless, with patience, a great deal of information was eventually gleaned from these files, all of which were made available to me. The account of accomplishments, with only a few exceptions, has been limited to the regular tenured and tenure-track faculty who directed the research, teaching, and extension activities. The reader should be aware, however, that at all times and in important ways an army of unmentioned others, including graduate and postdoctoral students, research and extension associates, visiting professors and fellows, office professionals, and farm and laboratory support staff, contributed to the programs of the individual faculty members.

Everyone in a department has his or her own perspective and is often much better informed about some areas than others. As chairman during the period covered in chapter 4, I have greater insight into the internal departmental "happenings" at that time than at any other. I hope I will be forgiven for the greater detail I may as a consequence have incorporated into that chapter. No doubt many items worthy of note during that and especially other time periods have been overlooked. Both Doug Hogue and I were hired by Ken Turk and have been faculty members in the department during the entire period covered. In that sense we have "seen it happen." However, there were certainly many discussions, decisions, and changes to which we would not have been privy, and records are incomplete. My analysis and opinions have been presented with candor and I take full responsibility for what I have written, including the inevitable errors. I realize, however, that others, having lived through the same time period, may see some things differently. Recently, somewhere in my reading I came across the following quote, attributed to Whitney Brown: "The past actually happened but history is only what someone wrote down." There is truth in that.

Chapter 1 (1963–1971)

J. K. Loosli Appointed Head

John K. (Jack or J. K.) Loosli was selected by Dean Charles Palm to succeed Kenneth L. Turk as department head in 1963. Jack had been leader of the animal nutrition section, where he had earned an excellent reputation for both his leadership and his research. Those who knew Jack were aware, however, that his selection also presaged a change in managerial style. It was clear, for example, that Ken Turk's attention to stern department discipline and his habit of involving certain faculty in specific applied research projects would be replaced by a more hands-off, "you know what is expected of you, so get on with it and show us that you can handle the job" type of administrative philosophy. Jack truly believed that the best way to build a great department was to hire strong people and give them as much freedom as possible to pursue their interests. His philosophy in training graduate students had always strongly encouraged independence on the part of the trainee. This change of style was welcomed by many faculty and for most it was effective. Others, however, less accustomed to using their own initiative, drifted, and a few used the less structured atmosphere as an



J. K. Loosli



Department faculty at the beginning of J.K. Loosli's term as department head. First row (l-r): H. F. Travis (courtesy), B. E. Mapes (administrative assistant), W. G. Pond, H. R. Ainslie, S. T. Slack, R. H. Foote, R. G. Warner, F. H. Dodd (visiting). Second row: J. T. Reid, S. E. Smith, J. D. Burke, K. L. Turk, J. K. Loosli, J. I. Miller, E. A. Pierce, H. W. Carter, S. A. Asdell. Back row: D. A. Hartman, J. R. Stouffer, G. W. Trimberger, M. D. Lacy, J. M. Elliot, D. A. Benton, R. Albrechtsen, G. H. Schmidt, J. B. Stone, G. H. Wellington, D. E. Hogue, C. R. Henderson, R. W. Spalding, L. D. Van Vleck, W. G. Merrill, W. F. Brannon, A. M. Meek. Not present: R. W. Bratton and W. Hansel.

opportunity for mischief. While Jack was a very tolerant person, his patience and understanding did have limits and he was known occasionally to lower the boom when necessary.

Both before and during Jack's tenure as department head, his excellent reputation as a nutritional scientist resulted in many applications by students interested in doing graduate work under his supervision. One of his most noteworthy characteristics was his interest in getting his younger colleagues off to a good start. Several of us benefited considerably from his generosity in steering some of his new graduate students to us. Often Jack retained the committee chairmanship, but in every other regard they became our students, working on our research projects. In our experience this was an unusually unselfish gesture—made in the interest of the department as opposed to his own self-interests—and one that more senior department faculty might emulate.

Jack led an extremely busy life. During his career he served a term as president of the American Society of Animal Science (ASAS) as well as of the American Dairy Science Association (ADSA) and was honored by both societies with their top research recognition, the Morrison and Borden Awards, respectively. Later his service to ADSA would be recognized when he received its Award of Honor and was named an ADSA fellow. His stature in the field led to his involvement in national and international committees of government and other agencies, as well as important consulting assignments. A serious man, whose character and conduct were beyond reproach and who was not given to much small talk or humorous storytelling, he nonetheless could laugh at himself. Somewhere along the line he had learned to benefit from what we would today call "power naps." I am sure he would be amused to learn that his colleagues used to chuckle when, occasionally, in a seminar or meeting, they observed that J. K. appeared to be nodding. Interestingly, in such circumstances he was often the one who would subsequently ask the speaker the most pertinent question. And then there is a well-documented story about a bright, young, and innocent graduate student he had assigned to someone else in the department, who was so excited about something he had discovered in his research that he went to J. K.'s office where he was invited to sit down and share his findings. As he enthusiastically, and no doubt at great length, told his story, he noticed that J. K. eventually began to nod and soon appeared to be asleep at his desk. Not knowing what was an appropriate move at that point, the student finally got up quietly and left the office to relay his disbelief to his fellow graduate students! There are also amusing stories about some of J. K.'s methods of teaching graduate students to think for themselves, rather than answering their questions directly. Although initially upset when they felt that they had been "had," the individuals who experienced this unique training all seemed, with time and reflection, extremely proud of their association with J. K., and they were no doubt better prepared for life as scientists.

Jack Loosli's tenure as department head coincided with a period of expanding resources and, at least in retrospect, with relatively easier access by animal scientists to competitive federal research funds. The U.S. Public Health Service had funded projects on aging (McCay) and reproductive physiology (Asdell) beginning about 1953. By 1959 Reid had been funded for a project on the chemical composition of animals, but it was into the 1960s before a number of other faculty in

Animal Science could expect good individual proposals in reproductive physiology and animal nutrition to be funded by NIH or NSF. At about this time graduate training grants also became more common.

During these and later years, the important role of the New York Artificial Breeders' Cooperative (later Eastern Artificial Insemination Cooperative and now Genex), in terms of both funding and cooperation with our researchers, cannot be overemphasized. From its beginning, this farmer cooperative, which had been organized through the efforts of Cornell faculty, had a unique relationship with the department. Its facilities were on Cornell land, and before Morrison Hall was built several of the faculty had their laboratories there. Its success depended heavily on the research that Henderson, Bratton, Foote, and others conducted. The ability of these scientists to conduct their research depended on the assistance of the cooperative in field testing and data collection. Beginning in 1946, the cooperative regularly made substantial financial grants to researchers in the department, a practice that has continued to this day. These grants were responsible for a great deal of the research on which the modern AI industry stands, both in animal breeding and reproductive physiology. Particularly in physiology, they provided the funding for preliminary studies, the results of which were often successfully used in applying for funding from other agencies, such as the NIH.

In general, staffing was on the increase and department budgets were rising. This is not meant to imply that there were no budget problems. There were, indeed, times when, for example, position vacancies were temporarily frozen. For the most part, however, faculty and staff requests were quietly accommodated to the extent possible, and morale was generally high. At that time social interaction among department members was also (still) at a high level, with frequent department parties and other events, sometimes with the participation of many of the



Aerial view of the main dairy barn and other buildings near Morrison Hall in the 1960s

faculty and graduate students in amateur plays or other performances. Even Saturday classes, which were largely eliminated during this period, did not particularly dampen the enthusiasm. During the transition from a 5.5- to 5.0-day work week, the main office was still staffed by department secretaries on Saturday mornings on a rotating basis. The change meant little to most of the faculty, who continued their long-standing work habits.

New Faculty Appointments

Perhaps one of Loosli's greatest strengths was his knowledge of the accomplishments and potential of people in his field, both nationally and internationally. Not only was he aware of what was happening at the cutting edge of his discipline, but he had an uncanny ability to know what had potentially important application and how to translate early findings into new research ideas. With little fanfare, he was able during his tenure as department head to get the support of the administration to attract several young but not "beginning" scientists, each of whom would soon make his mark on Cornell's reputation.

One of these was Willard J. Visek, who had received his Ph.D. in animal nutrition in the department and subsequently had gone on to get training in radiobiology at Oak Ridge and to earn the M.D. degree at the University of Chicago. He came back to Cornell in 1964 from a research position in the medical school at Chicago. Willard's background and training brought greater breadth and visibility to the nutritional physiology and metabolism dimension of the department, which was already strong in many aspects of animal nutrition and reproductive physiology. His medical degree opened doors that were not always open to others and facilitated his leadership in development of a popular and rigorous mammalian physiology course for animal and biological sciences students. Willard's research interests were quite broad, and his clinical experience undoubtedly gave him added perspective on some nutritional problems and processes. He was interested and well versed in the growth effects of antibiotics in farm animals and was often sought as an expert on the question whether the use of antibiotics on the farm was a cause of developing resistance to antibiotics in medicine. Much of his work at Cornell



Willard Visek



Students participate in Visek's class in mammalian physiology.



The department's dog farm, on Sapsucker Woods Road, provided research beagles for Willard Visek and others.

dealt with aspects of protein and urea metabolism, including the possible role of ammonia as a carcinogenic agent in the colon. During his years at Cornell many graduate students benefited from his advice and help, and his colleagues will not soon forget that Jack Nicholson–like voice and belly laugh with which he gleefully delivered the jokes and stories he had recently picked up at a nutrition meeting.

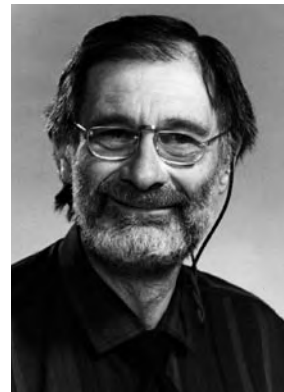
With Ken Turk in place as the first director of international agriculture at Cornell, Charles Palm as dean of the college, and Palm's friend Nelson Rockefeller as governor of New York, it was perhaps only a question of time before nine professorships in international agriculture were added to the college's state line budget. In order to expedite the process of organizing an international program, some of these positions were in fact initially supported by foundation grant funds and later picked up by the state budget. At any rate, one of the positions was assigned to Animal Science, which permitted the recruitment of Robert E. McDowell. A marine colonel in World War II, Bob had a background in animal physiology and genetics and was a scientist with the ARS/USDA in Beltsville. He initially came to Cornell as a visiting professor in 1966 to teach a course in livestock production in the tropics. He was appointed professor of international animal science in 1967. An early riser, who was usually one of the first to arrive at Morrison Hall in the morning, and a very organized person, Bob quickly became heavily involved in the teaching program, both in the department and in the college's interdepartmental program in international agriculture. Of all the "international" positions, his was the only one associated with animal work, and he used to remark that an inordinate amount of his time was spent in defending the importance of animal agriculture among his colleagues in the plant and other sciences! He aggressively developed cooperative research (primarily animal breeding) programs in many parts of the world, especially in Africa, Asia, and Latin America, often arranging to have his graduate students collect data for their theses in a developing country. His international stature was reflected in the fact that for eight years he served as chairman of the board of trustees of the International Livestock Center for Africa (ILCA). Both ASAS and ADSA recognized his work when he received their international awards in 1979 and 1988, respectively. In many cases Bob also had cooperative efforts under way within the department to ensure that his students were appropriately trained in areas such as nutrition.

McDowell was one of the leaders who developed a very successful course (International Agriculture 602), which annually took a group of interested agriculture students and faculty to Mexico or Central America between academic terms for a firsthand experience of agriculture in the tropics. Always a hustler for his cause, he was in many ways the ideal person to lead the development of an international dimension in the department. Although many of the other faculty were active internationally in their own areas of expertise, much of this had not filtered down to the level of the undergraduate. Bob was able to focus on this dimension and to serve as an advocate and catalyst in fostering breadth in programs in the department and elsewhere. For some 20 years, until his retirement in 1986, he kept the international implications of animal agriculture prominently and enthusiastically before both students and faculty.



Robert McDowell

Peter J. Van Soest, a brilliant forage chemist with a dairy background, came to Cornell in 1968 from a position in the ARS at Beltsville. There he had developed the initial procedures for a revolutionary system of feedstuffs analysis, which was eventually to replace traditional methods on a worldwide basis. During his years at Cornell, Pete earned an international reputation as *the* authority on the chemistry of forages and other feedstuffs. His detergent fiber fractionation procedures were shown to be nutritionally much more meaningful than the old crude fiber methods. He trained many students, wrote extensively, and was in great demand as a speaker both at academic and industry functions and in national and international symposia. Through Peter's work on fiber digestion in the human and numerous other species, and through his book *Nutritional Ecology of the Ruminant*, he was to become widely known among people in several disciplines outside the range of most animal scientists. He won prestigious research awards from ADSA, ASAS, and other organizations; was named a fellow of the American Institute of Nutrition; and received an honorary doctor of science degree from the University of Milan. He had an encyclopedic memory for chemical matters but was the consummate absent-minded and unconventional professor, and stories of his exploits are legion. In the classroom he was usually so engaged in his subject that he appeared totally unaware of time and often, long after the normal class period had ended, had to be interrupted and reminded that students did have other commitments. It was rumored at one time that his students had presented him with an alarm clock for this purpose. A prodigious worker, he nonetheless represented a real challenge for a number of department chairmen, who sometimes did not know in what part of the world Peter was at any given time. Few of his colleagues were aware that he had a strong interest in art, was a collector of old recorders, and sometimes played with a group from lower campus that had medieval music interests. His impact on the department was substantial.



Peter Van Soest

Other new faculty hired during Jack Loosli's term of office included Carl Coppock, Samuel Sabin, Roger Natzke, Harold (Skip) Hintz, Paul Miller, Henry Tyrrell, Robert Everett, Larry Larson, and Nathan Smith.

Carl Coppock, a young nutritionist who had worked in the energy laboratory at Beltsville while earning his Ph.D. at Maryland, joined the department in 1964 in dairy cattle extension and research. Carl, a dedicated and hard worker and a pleasant colleague, quickly gained a reputation among dairymen as someone who would find answers to their nutritional problems. Although his time for research was limited, he and his students contributed significantly to the literature on complete rations, sulfur supplementation of corn silage diets, starch digestion, and other important practical dairy nutrition questions. He also did an excellent job of searching the literature on a wide range of subjects and putting together written material for extension use. When Carl decided to accept an offer at Texas A&M, as leader of the dairy cattle section of the Animal Science Department in 1977, he left a big hole in our extension program.



Carl Coppock

Sam Sabin came aboard in 1964 to fill the vacancy in 4-H extension resulting from Harold Willman's retirement. The rapidly growing interest in pleasure horses was a particular reason for Sam's appointment, and this focus soon came to dominate his activities as more and more young people in the state owned and showed horses. Sam saw an opportunity to introduce some real animal science into the equine world of young horse enthusiasts, a commodity that had been quite scarce in the industry up to that point. His aggressive approach to modifications of historical programs and methods occasionally raised the hackles of parents, agents, or the administration, but Sam, over the period of his tenure in the position, was able to accomplish some much-needed change.

Roger Natzke began his Cornell career in 1966 with primary responsibility in extension and with emphasis in the milking management/mastitis area. He is probably best remembered for the field experiments he supervised on the effects of dry cow treatment and milking hygiene on mastitis occurrence. This idea grew out of the experiences of Frank Dodd at the National Institute for Research in Dairying (NIRD) in England, who had pioneered this work with very favorable results, and of Sandy Meek and Bill Merrill, who had spent sabbatical leaves at NIRD and came back enthusiastic to try this approach in the United States. Later, with some rearrangement of assignments, Roger assumed some teaching responsibilities in dairy cattle management and eventually tested his administrative abilities with a part-time position as associate director of instruction in the College of Agriculture. Not long thereafter, in 1981, he accepted a position as head of the Department of Dairy Science at the University of Florida.

Harold (Skip) Hintz was hired in 1967 to work in the equine area. In his case nutrition research and teaching was to be the focus. A former graduate student at Cornell, Skip had been on the faculty at California (Davis) for about three years. His position at Cornell was created as a result of administrative success in "selling" the state legislature on a proposed intercollege program to address the serious need for valid information on the role of nutrition in, and the pathology of, several equine bone and metabolic problems. A team of three faculty plus a small support staff was provided for in the budget. Skip was the nutritionist, with his primary appointment in the Animal Science Department. The new pathologist (Herb Schryver) and a clinician (Jack Lowe) were appointed in the Veterinary College. For many years, until around 1990, when a retirement and some reassignments broke up the group, this team tackled a number of mineral, energy, and protein nutritional problems of the horse, contributing significantly to modern knowledge of the nutrient requirements of the pleasure horse.

Paul Miller (animal breeding) and Henry Tyrrell (dairy cattle nutrition), two of our own outstanding graduate students, were hired as assistant professors in 1967 and 1968, respectively. Henry



Sam Sabin



Roger Natzke



Harold Hintz



Teat dipping after milking became a routine feature of mastitis control on dairy farms following research by Merrill, Natzke, and Meek demonstrating the effectiveness of udder hygiene and dry cow therapy in reducing its incidence.

was filling in for George Trimberger, who was on leave, and left the department to assume a position in the energy laboratory at ARS/USDA after about three years. Paul taught the beginning animal breeding course for several years but left to assume a position as vice president of the American Breeders Service late in 1971.

Robert W. (Bob) Everett, who had just earned his Ph.D. at Michigan State, came to Cornell initially as a research associate (1966) in animal breeding, working with dairy records. In 1968 he became an assistant professor. During his early time here (1970–71) he was called upon for a short period to assist the New York Dairy Herd Improvement Cooperative (NYDHIC), which at that time was headquartered in Morrison Hall, financially troubled and without adequate leadership. For about eight months, on an interim basis, he assumed leadership of the organization, reorganized the financial management, renegotiated loans, downsized the personnel, and put the business on a sound footing before turning it over to a newly hired manager. This experience undoubtedly contributed to his close association with dairy records research and extension thereafter. Bob's strong interest in applying Henderson's principles to ever more accurate sire selection methods, to everyday management



Robert Everett

problems of dairymen, and to increasing the profitability of dairy farms, dominated his research and extension agenda throughout his career. He made significant contributions to sire selection methods. Although overcoming the arguably erroneous philosophy of some purebred “breeders” took many years, he was in strong demand as an adviser to progressive, college-trained commercial producers, who understood the need for good business management practices and soon became the real dairy leaders in the state. Like many of his outstanding colleagues in extension, Bob was awarded the Alfa Laval Agri Dairy Extension Award by ADSA.

Nathan Smith, a nutritionist, and Larry Larson, a reproductive physiologist, assumed positions in extension in 1970 and 1971, respectively. Each of these well-trained young men, however, left within a few years to take other positions, Nate at the University of California and Larry at the University of Nebraska.

Retirements and Other Departures

In 1964, soon after Loosli became department head, Harold Willman retired, the first of five long-term extension professors to depart during Loosli's term. Harold had devoted his career to working with youth who had interest in dairy, livestock, or horse programs. He was widely known around the state by several generations of families that had been involved in 4-H and other youth projects, since he had been in this position for some 35 years. He enjoyed another 35 years of remarkably good health, excellent memory, and active lifestyle before his death on July 14, 1999, at nearly 96 years of age. His widow, Louise, is currently (2000) living in Missouri.

Sydney Asdell, one of the department's most illustrious scholars, retired in 1965 after 35 years of teaching and research in physiology. Sydney's quiet and unassuming demeanor often masked his brilliant mind and enormous contributions to the development of reproductive physiology as a discipline. One of his books, *Patterns of Mammalian Reproduction*, first published in 1946, is a classic.

Raymond Albrechtsen, a 31-year veteran of the department, was the next to retire, in 1969. Ray was a popular and highly respected member of the dairy exten-

sion group, who had served as department extension leader for many years and as president of the American Dairy Science Association in 1967. He was instrumental, along with Wilmot Carter, in the rapid acceptance of artificial insemination by dairy farmers. Ray and his wife, Louise, owned a well-known and productive herd of Holsteins, which no doubt enhanced his credibility among dairymen in the state. It should be noted that the Albrechtsens, who had no children, left a sizable endowment to the department, the income of which is used to support graduate students.

In 1971, as Loosli was about to step down, Myron Lacy, James Burke, and Wilmot Carter all decided to retire. Collectively they represented about 85 years of extension contributions to the department. Myron had essentially single-handedly dealt with the adult beef cattle programs, covering a large number of small, part-time operators, some of whom were gentleman farmers with full-time jobs in the professional world. Although they were small farmers, they were often influential politically, and Myron deserves much credit for taking care of their extension needs and thus cultivating their support of the department.

Jim Burke had spent his later years dealing with the problems of keeping the technology associated with the dairy records system on the cutting edge. He had special interest in the records on feeding and breeding management as well as in ways to increase the efficiency of milk testing. Jim, who was a very creative and forward-looking person, was well placed for this task and was responsible for many of the ideas and quantum advances that kept New York in a lead position in its Dairy Herd Improvement Association (DHIA) programs. His contributions were recognized when he received the Alfa Laval Agri Dairy Extension Award from ADSA in 1967.

Wilmot Carter's major role was to translate Chuck Henderson's latest sire selection methods into language that would be understood by the layman and to spread the word among dairy leaders and artificial insemination providers. He was closely associated with the early development and use of computerized dairy records. Wilmot must be given much of the credit for getting Henderson's revolutionary techniques rapidly adopted in the industry. His sire selection methods were first put to use by the New York Artificial Breeders' Cooperative (NYABC). In 1966 this organization became Eastern Artificial Insemination Cooperative (EAIC), and for many years Eastern regularly updated its program with each new advance by our breeding group. A few years later, most of the other organizations in the country and world would follow suit. Wilmot received the Alfa Laval Agri Dairy Extension Award in 1969.

Two young faculty members, hired at the end of the Turk administration, departed in 1966 after only three to four years in the department. J. Bruce Stone, who held a dairy cattle extension/research appointment, returned to the Department of Animal Science at Guelph. Duane A. Benton, a nutritional biochemist, left to take a position in human nutrition with USDA.

Academic Highlights

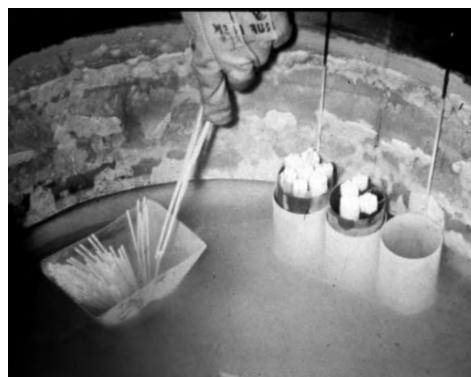
Academic research, teaching, and extension activities are seldom subject to sudden and drastic changes with periodic switches in department leadership. They are more likely to change direction or emphasis in an incremental fashion, and major changes usually coincide with the hiring of new faculty. Some of the developments that were associated with new faculty during the Loosli era have already been dis-

cussed. It seems worthwhile, however, to highlight specifically some of the other activities that were ongoing or were introduced during those years.

This was a time when the animal breeding group, under the brilliant leadership of Charles (Chuck) Henderson, was researching, developing, and modifying its young sire sampling program to make it an ever more effective tool for improving the milk-producing potential of New York herds. NYABC/EAIC cooperated closely with our breeding and physiology groups and were generously providing much of the financial support for the research. It was becoming clear that a lot of the variation in phenotype was attributable to differences in the environment (management) of individual herds, and the refinement of methods to account for these differences in genetic evaluations was an item of high priority on the research agenda. By 1970, the new “sire comparison” procedure developed by Henderson to replace the “herdmate” procedure had been implemented by EAIC in the Northeast.

Developments in computer technology were accelerating in parallel and, as new hardware and software were installed, the group rapidly expanded its methods, expectations, and needs to a point where it was constantly awaiting the next generation of computer power. The department thus continued to have one of the most powerful computers on campus, supported by both animal breeding research needs and contracted computing, largely for processing the NYDHIC records, which served as a database for much of the research. Having our own large computer was not always taken for granted, since on a number of occasions over a period of years the university put up strenuous arguments that our programs should be run on the central university computer. The animal breeding group and many others in the department familiar with the operation of our Dairy Records Processing Laboratory (DRPL) knew that no central operation could deal successfully with the complexity and deadlines involved. The department was able to defend its stance, but at times it may have been a close call.

In the meantime, the reproductive physiologists, led by William Hansel, with primary emphasis on the female; Robert Foote, with emphasis on the male; and Sydney Asdell, with interests in both, were unraveling the mysteries of reproduction in cattle and other species. With substantial support from NIH, NYABC/EAIC, and other sources, great progress was under way in developing an understanding of the biologic processes involved. Better methods of preserving semen, including modified extenders and freezing protocols, were under development. EAIC used fresh liquid semen much longer than many AI studs in order to breed more cows to their best bulls. While the advantages of using frozen semen to facilitate its transport and extend its useful life were obvious, freezing protocols in use at that time resulted in the loss of many sperm. Thus, somewhat paradoxically, in spite of the advantages and cutting-edge status of frozen semen, popular bulls could in fact generate more offspring when fresh semen was used. Hence EAIC was eagerly awaiting better semen freezing and thawing technology with greater conservation of viable sperm,



Development of extenders and protocols for freezing and storage of cattle semen in liquid nitrogen were the focus of much research by reproductive physiologists in the 1960s and thereafter.

which would allow them to convert to an all-frozen semen program. It is worth noting here that the improved technology resulting from this and subsequent research was widely adopted in the industry. For example, as the century ends, more than 80 percent of the cows bred artificially worldwide are reportedly inseminated using semen extenders developed at Cornell.

The radioimmunoassay, variations of which came into wide use about this time for measuring hormone levels in biological samples, gave enormous impetus to the previously difficult task of resolving endocrine actions and interactions in reproductive function. Our department group, consisting of faculty, graduate students, and postdoctoral students, perhaps in its heyday of activity, was contributing to this and, on the basis of knowledge of the biology underlying the regulation of the estrous cycle, was concurrently pursuing practical methods of synchronizing estrus to facilitate artificial insemination of cattle.

Lactation physiology, at that time represented by Glen Schmidt, was another area of research activity. Glen and his students were delving into fundamental questions related to mammary development, capacity, and regression, as well as more practical questions about the action of oxytocin as it relates to milking management. Glen's experiments on the effects of milking interval, vacuum level, pulsation rates and ratios, and of the elimination of machine stripping, were important early studies that contributed to the growing emphasis then being placed on better on-farm milk harvesting methods and practices.

James Stouffer, who had earlier initiated work on the development of equipment and methods to measure backfat thickness and loin eye area in live animals, continued to demonstrate his ingenious application of ultrasonic devices in the livestock industries. George Wellington in the meantime was occupied with other methods of estimating the chemical composition of carcasses, with experimental measurements to establish humane slaughter techniques, and with factors affecting tenderness and other organoleptic characteristics of meat and meat products.

The animal nutrition group, supported by an NIH training grant as well as several individual NIH research grants, was active in diverse areas, examples of which follow. Thomas Reid and his students were in the midst of their definitive studies on factors affecting the chemical composition of the animal body, which were to have a strong impact on both the scientific community and the livestock industry. Other studies related to energetic efficiency. It was about this time that they reported the dimensions of the depression in digestibility that accompanies increasing levels of feed intake in the dairy cow, which were subsequently incorporated into essentially all feeding standards. Douglas Hogue was continuing his work on the role of vitamin E, selenium, and raw kidney beans in nutritional muscular dystrophy. Other work was done to define the energy requirements of the pregnant and lactating ewe. In collaboration with Emmett Bergman in the Veterinary College, Doug also demonstrated (somewhat to Emmett's surprise), in a now classical experiment, the magnitude of the glucose turnover in the lactating ewe.

Among Wilson Pond's activities at this time were his studies on the role of calcium nutrition in the etiology of atrophic rhinitis in swine. He also worked on zinc nutrition and parakeratosis, as well as amino acid requirements of the pig. In another interesting and innovative area he collaborated with Richard Barnes (Graduate School of Nutrition), using growing pigs to study the effects of protein and energy undernutrition on learning ability. This study modeled learning defi-

ciencies in malnourished children in Third World countries. Richard Warner continued work on milk replacers for veal production and explored the effect of rumen fill on voluntary feed intake and effects of roughage consumption on rumen development. He also collaborated with Hugh Travis (a federal employee assigned to Cornell) on mink nutrition. In response to the discovery by Marston (Australia) that the primary lesion in a cobalt (B12) deficiency is the inability of the animal to metabolize propionic acid, I became interested in propionate and vitamin B12. Studies related to milk fat depression and ketosis were initiated, and NIH support was obtained to begin measuring B12 production in the rumen and absorption from the gut. William Merrill conducted a series of studies on the effects of processing corn silage and of diets containing high-moisture corn or other readily available carbohydrate on performance and health of cows.

A significant innovation in teaching was the initiation of an honors program in the college and the formation of the Animal Science Honors Committee. This program, which encouraged outstanding juniors and seniors to undertake research under the guidance of a faculty member, leading (hopefully) to an honors degree, has since grown and developed into a very important and rigorous part of our undergraduate program. Undergraduate research for credit was also available, but the new program, which did not earn credit, imposed additional requirements, including evaluation of a “thesis” by the honors committee.

The arrival of Skip Hintz soon led to development of a popular horse production course that has attracted large numbers of students ever since. As mentioned earlier, Willard Visek initiated a Biological Sciences course in mammalian physiology. During this time period some rearrangements were also made in the dairy production and undergraduate nutrition courses, and a series of “advanced” nutrition courses to be offered by several departments to better meet the needs of graduate students and advanced undergraduates was proposed by the field of nutrition. In those days the animal science faculty with nutrition interests were much more closely allied with their counterparts in the Graduate School of Nutrition and other departments than is true today. Discussion abounded, certain courses were shared, and the graduate seminar was alternated between departments and well attended by those with interests in both animal and human nutrition. Sadly, as interests have increasingly diverged, much of this common ground has since slowly eroded.

Some highlights of extension activity in the Loosli era have already been alluded to in the section on new faculty appointments. Mention should also be made, however, of the impact on the dairy industry of the programs initiated by Alexander (Sandy) Meek. Sandy, with a new Ph.D. in animal breeding from Iowa State and extensive experience as a farm manager, had been hired by Ken Turk shortly before J. K. succeeded him as department head. With broad academic interests and a winning way with dairymen and extension personnel, he quickly established himself as a highly credible source of information and advice on dairy



The nutrient requirements of growing pigs and the role of early nutrition in disease and learning impairments were prominent features of Wilson Pond's research program.

management problems. Among his areas of expertise were milking and housing systems and mastitis control. He, along with Bill Merrill and others, was involved in planning the new dairy cattle facilities at Harford and was initially responsible for Cornell's input in planning, building, and staffing the new dairy facility at the Miner Institute at Chazy, N.Y., a joint effort aimed at providing research and demonstration projects in support of northern New York dairymen. Unfortunately, Sandy's promising contributions ended abruptly, just months following the end of Loosli's tenure as department head, with his untimely death at the age of 45.

Other significant developments in Loosli's time were the continuing and substantial changes in the organization and modus operandi of the DHIA program in New York. Under the able leadership of Harry Ainslie, Jim Burke, and others, the traditional county-based program with local associations and local testing had been changed substantially with the formation of the NYDHIC in the 1950s. Additional changes were made in the 1960s and early 1970s as centralization of services continued. County and regional milk testing was gradually consolidated so that ultimately all milk and forage testing took place in a central laboratory in Ithaca. Improvements in records processing and in the quality and quantity of the management information sent back to dairymen were continually being made in the Dairy Records Processing Laboratory in Morrison Hall. As anyone who has tried to get agreement among many diverse groups knows, this transition was not an easy task to accomplish. It was in fact an ongoing process over many years. Harry Ainslie and his extension colleagues in the department deserve much of the credit for the vision and for nursemaiding this organization into existence as well as for helping it develop into a successful and independent unit, leading the nation in its innovative and progressive programs and run by a manager hired and supervised by a board of New York dairy farmers.

In 1967 the Department of Animal Science, together with the Dairy Industry (later Food Science) Department, hosted a large and successful annual meeting of the ADSA on the Cornell campus. This undertaking involved a lot of committee time by many of the faculty for about a year. I remember this well because I was asked to postpone plans for a sabbatical leave that year in order to be on hand to help.

Department Name and Organization Changed

In 1966 the name of the department was officially changed from Animal Husbandry to Animal Science. This change was in many respects long overdue, in accord with changes in national professional society designations, and something that had been discussed for some years. One has only to ponder the training and early research efforts of such department pioneers as Leonard Maynard, Clive McCay, and Sydney Asdell to appreciate that the department had in fact been in the business of science for a long time. Although husbandry was to remain an important part of our program, a large body of pertinent scientific data had accumulated, and increasingly our mission in research, teaching, and extension had moved toward an emphasis on understanding the basic biological principles and mechanisms underlying the disciplines of nutrition, physiology, animal breeding, and meats. In short, by that time "science" reflected most current activities much more accurately than "husbandry."

At about the same time a significant change in the organization of the department divisions was made. Up to this point two of the faculty with largely reproductive physiology interests (Asdell and Hansel) had been in the division of animal nutrition and physiology, and two others (Bratton and Foote) had been in the animal breeding division. Under Henderson's leadership a part of the animal breeding division was becoming identified more and more with population genetics, while the other part was moving toward an almost exclusive focus on reproductive physiology. The somewhat strange mix of interests in the division of animal nutrition and physiology was a carryover from the days when that division occupied quarters in Stocking Hall, while the rest of the department had occupied Wing Hall. A decision was, therefore, quietly made to form a new division named "physiology of reproduction," which would accommodate all of the current physiologists in a more appropriate organizational structure.

Dairy Barns Destroyed by Fire

By the 1960s, the eastern part of the campus had been developed to a point where the dairy and beef cattle facilities were surrounded, and nearby pastures and even exercise yards were becoming a thing of the past. Waste disposal was also a major problem as neighbors increasingly complained when manure was transported through their streets on the way to more distant fields. An opportunity to begin to resolve these growing problems was provided fortuitously on June 22, 1968, when the main dairy barns, located adjacent to Morrison Hall, were totally destroyed by fire. Fortunately, this fire (which, it turned out, was inadvertently set by neighborhood children playing with matches) did not result in the loss of human life. Because of the astute and timely actions of the barn crew and some gradu-

ate students who had been working in Morrison Hall that Saturday afternoon, almost all the cattle were saved. Some rabbits, housed in one of the attached buildings, succumbed. In a general sense, loss of experimental data was not extensive, but the rabbit experiments being conducted by two graduate students (Michael Kane and Ralph Maurer) were destroyed, an outcome that was not inconsequential for them.



Fire destroys the main dairy barn on June 22, 1968.

Teaching and Research Center Developed

Disrupting as it was in the near term to some of the programs of the department, the fire almost immediately activated a plan by the administration to seek state funding for a major project that was eventually to move and centralize the dairy, beef, and sheep operations in an off-campus location (Teaching and Research Center) a few miles south of Dryden, with new buildings and sufficient land to support them. State projects of this size take time and are often frustrating to those who must cope with (and succumb to) the mandates of state laws and state-assigned architects who know nothing about animal housing. It was, there-

fore, some time before the land (a block consisting of several farms and totalling about 2,600 acres) was purchased and the buildings designed and constructed, in several phases. In the meantime, existing facilities were rented to house the dairy herd. Upon completion of the dairy unit in 1972 and the last of the new components (beef, sheep, headquarters building) of the center around 1976, at a total state cost (including land) of nearly \$9 million, the department once more had new, arguably “state-of-the-art” facilities for research and teaching purposes.

Large Animal Research Facility Planned

The one facility still lacking was a planned large animal research unit on campus, designed to accommodate intensive experiments on small numbers of closely monitored large animals. Since these experiments often involved surgically prepared animals, the facility was to include a large animal surgery and, as first conceived, an environmental physiology unit. Originally planned as a part of the Morrison Hall complex, it had not been included in the final plans for Morrison because of possible state budgetary constraints. It was, nevertheless, considered an increasingly important facility as many of the younger faculty were constrained from doing the types of experiments that such a facility at close proximity to Morrison Hall would permit. As a consequence, soon after being settled in Morrison Hall in 1961 the department began planning the new large animal unit. Getting state projects funded is often a long and frustrating process since they involve detailed planning at the department level, competition at college and university levels, and salesmanship and lobbying at the state level; in addition, they are often subject to political trading and other last-minute liabilities. When the dairy barns burned, the large animal lab project, at an advanced planning stage, was immediately downgraded in priority while other more urgent needs received attention.

Unfortunately, this turn of events was to have a greater effect than first thought, because once the farm facilities were in hand other departments could not be criticized for feeling that Animal Science had been nicely treated and it was now their turn. Thus, many years of wishful planning and last-minute disappointment lay ahead.

Paul Dean Accident

While awaiting the development of what was to become the T&R Center, with the dairy herd in rented facilities at the Cotterill farm in Harford, a very serious farm accident occurred on November 28, 1969. Paul Dean, the dairy cattle superintendent, who had served the department for many years, almost lost his life while distributing bedding from a manure spreader in one of the heifer pole barn facilities. The spreader was being pulled by a tractor while Paul, standing in it, was kicking bales of straw toward the beaters for distribution. He slipped and fell and, before the tractor driver was aware of the situation, was dragged into the beaters. Barely surviving the incident, Paul lost one leg (amputated above the knee), fractured the tibia in the other, and suffered severe fractures and other damage to his arms and hands. After being extricated from the machinery, he was transported by ambulance to the Tompkins County Memorial Hospital where two surgeons, Drs. VanDyke and Hirshfeld, treated him. He retired soon after his recovery .

Division of Biological Sciences Formed

Early in Loosli's tenure as department head a new intercollege division to accommodate the more basic biological sciences was formed. The colleges involved were Agriculture and Life Sciences, Arts and Sciences, and Veterinary Medicine. The idea was to strengthen biology at Cornell, which many felt had lacked a strong and cohesive core up to that point, with appointments scattered among too many departments. The concept was controversial and discussions leading up to this new development were at times heated, because many of the departments were to be affected in one way or another by the change. To some it meant a transfer of positions, to others it at least threatened a loss of positions, to many it introduced the idea of joint appointments and loss of autonomy in refilling vacancies, and to all existing departments it posed the inevitable likelihood of reduced support. At one stage, the possible transfer of the physiology positions in Animal Science to the Section of Physiology was under discussion in various quarters. This was vehemently rejected by most Animal Science faculty, who felt that the department had worked hard with the animal industries to get these positions funded by the state and needed them to have a comprehensive teaching and research program in support of the animal industries.

In general, Animal Science did not reject the idea of a group of fundamental life scientists organized in a less fragmented administrative structure but strongly objected to the idea of building this group at the expense of a strong existing "production" department. In the end, several of our physiologists accepted joint appointments in the Physiology Section of the new Division of Biological Sciences and have participated in joint teaching efforts. Willard Visek was one of these people, developing and teaching a rigorous and popular course in mammalian physiology, as mentioned earlier.

It is perhaps ironic that in 1998, as this was being written, the university administration announced the dissolution of the Division of Biological Sciences, following internal and external reviews and a very critical task force report that recommended that it be disbanded. One of the major criticisms leveled against it was its administrative structure, which many considered ineffective. The new plan arranged most of the existing sections into four basic biology departments, two under the immediate supervision of the dean of the College of Agriculture and Life Sciences (CALS) and two under the dean of Arts and Sciences. Three of these departments have at least some faculty from each college. A director of undergraduate biology reports to the dean of CALS. A memorandum between the two colleges lays out the continuing commitments of each. The College of Arts and Sciences and the university agreed to seek new funding to strengthen recruiting and start-up of new faculty in biochemistry, genetics, and chemical biology. In later decisions, the Section of Physiology was incorporated into the newly organized Department of Biomedical Sciences in the Veterinary College, while the section of Microbiology became another department in CALS. From the perspective of a jaded old-timer, the new administrative structure seems in some ways almost as awkward as the one it replaced.

Field of Animal Nutrition Becomes Field of Nutrition

Another somewhat controversial change that occurred during Loosli's time as department head was a change in the name of the graduate field of animal nutri-

tion. There was a long history and tradition behind this graduate field, which was made up of faculty from several departments and at least three colleges. As the Graduate School of Nutrition, under the leadership of Richard Barnes, grew and diversified, the faculty in that unit, many of whom had no background in agriculture, became less and less comfortable being associated with an “animal” field. Many suggestions were floated and eventually, despite arguments from some that the tail was wagging the dog, the name of the field was changed to Nutrition, with several major and minor subjects, including animal nutrition. This change, as will be seen in a later part of this story, led to additional changes and may have initiated what grew to be a substantial difference in the route by which graduate students with nutritional interests were admitted to graduate study in the Department of Animal Science.

It was also during the Loosli years that the Graduate School abolished the general foreign language requirement, leaving any possible continuing requirement up to the fields. In 1966 the fields of Animal Nutrition, Animal Science, and many others voted to leave any such requirement to the discretion of the Special Committee of each candidate for a degree.

Loosli Steps Down

In late 1971, after serving more than eight years as department head, Jack Loosli announced his decision to step down and to spend much of the remainder of his time until retirement (1974) in Nigeria. As it turned out, he was the last department “head” in Animal Science. A new policy instituted by the college administration designated those chosen henceforth to lead a department as “chairman.” In keeping with changing times, where appropriate, “chairperson” or “chair” later became an alternative, equivalent designation. In many respects the expectations were no different than they had been for “heads,” but the chairpersons were now to be subject to regular review and reappointment or termination.

Other Changes in the Wind

Many who read this may find it hard to believe how relatively simple some administrative tasks were in those days. Searches, appointments, and promotions were much less complicated and time-consuming. I remember being asked one day by J. K. for updated biographical information, which I casually prepared and sent down to the main office. The reason it was needed was not mentioned. A few months later I was advised that I was about to be promoted. When people were hired, their research missions were sometimes left largely up to them. Skip Hintz has often said that when he joined the Cornell faculty, J. K. told him that he could do research in whatever areas were of interest to him, but he hoped that some of his work would be with horses! That was the only direction he was ever given. There were few animal care regulations and little associated paperwork. The scientists simply made sure that their animals were well cared for as part of good science and good animal husbandry. Nor were there the unions, detailed search, hiring, and OSHA rules, and complicated accounting requirements we have today. At that time the University Personnel Office, for example, consisted of a director and a few assistants who helped find candidates for vacant secretarial, technical, and other staff positions. The director himself consulted with faculty supervisors about personnel problems. In stark contrast, the current Office of Human Resources has some 70 employees headed by a vice president.

The period of student unrest and rebellion of the 1960s and early 1970s, associated with the war in Vietnam, was soon to be replaced by a time of relative campus calm. In many respects both future students and the population at large had been changed forever by those events. The end of the Loosli era coincided approximately with a change in the level of formality on campus. The dress code was becoming more relaxed. Interaction of faculty and students was becoming more casual and classroom discipline less rigid. More female students were beginning to enroll in Animal Science. Coeducational campus housing was soon to become a fact of life and would gradually be accepted by even the more conservative elements. Significant changes lay ahead.

Chapter 2 (1971–1976)

J. Thomas Reid Appointed Chairman

When J. K. Loosli announced his intention to step down, Dean Charles Palm, after consulting with the faculty, selected J. Thomas (Tom) Reid as the new “chairman” of the department, effective November 1, 1971. The different title, in line with college policy of the time, was apparently a touchy point with Tom, since he often signed papers as “head” and used this title rather than “chairman” in his curriculum vitae.

Tom Reid was a scientist with an excellent track record of accomplishments. His work ethic was obvious to his colleagues who had observed him at his desk or in the laboratory at all hours of the day and every day of the week. He had a reputation for careful planning and meticulous attention to detail and had, through his work on cutting date and forage digestibility, energy metabolism, and body composition of animals, acquired an international reputation. He was the recipient of competitive research grants and had received several prestigious research awards, including the Morrison (ASAS), Borden (ADSA), and American Feed Industry Association (ADSA) Awards. He, therefore, began his chairmanship of the department as a well-known and respected researcher and with the support of most of the faculty. Everyone, at least in the department, was aware at the outset that another change in administrative philosophy and day-to-day management style was at hand.

Typically, one of Tom’s first actions as chairman was to prepare and deliver a detailed (nine-page summary handout) “inaugural address,” in which he outlined his philosophy and plan of operation and discussed what he perceived to be the major problems facing the department. In true scientific fashion, Tom responded to all requests from both faculty and administration by carefully (and even sometimes painfully) documenting the evidence he needed to back his opinions or decisions or to provide the information requested. I remember a meeting in which the research output of the department in various years was compared in terms of centimeters of typed references! He meticulously tended personally to even minor matters, such as to what office a new graduate student would be assigned. Needless to say, he could still be found in his office at all hours. Nonetheless, it was not long before the grumbling began in the department. Some felt that he did not share his thinking with them and that they were being kept in the dark; others that he was too friendly with the administration and didn’t fight hard enough for the department; others that he played favorites. This was a frustrating experience for Tom, who had always been highly successful in his previous activities, and it



Thomas Reid

eventually led to a measure of defensiveness on his part, which only exacerbated the situation.

As will be seen in the following pages, much good was accomplished during Reid's chairmanship, but it was a period of turmoil and division in the department. At times the discourse deteriorated into bitterness and backbiting. At one point a faculty member was required to produce and sign what amounted to an oath of loyalty to the chairman before being reappointed to an important departmental responsibility. Before the end of his term it was clear that the turmoil and politics were severely affecting faculty morale, if not productivity. It appeared to many that Tom's personality and modus operandi, which had served him so well in his research activities, were simply not as compatible with his responsibilities as department leader. The unfortunate consequence was substantial and perhaps permanent damage to the self-esteem of a fine human being who, as a scientist, was never able to reconcile his tireless efforts with the criticism to which he was mercilessly subjected.

New Faculty Appointments

It was a time of great turnover of faculty in the department. Several retirements occurring late in Loosli's term and the departure or retirement of even more during Reid's term afforded him an excellent opportunity to shape the department's direction and future with new faculty appointments. Danny Fox, Richard Quaas, Pascal (Toni) Oltenacu, Michael Thonney, Larry Chase, Ronald Gorewit, and W. Ronald Butler were all hired as assistant professors within about a three-year period. During that interval Noland Van Demark also joined the college administration as director of research, with an appointment as professor of animal science.

With no one to cover beef cattle extension following Myron Lacy's retirement, early in Tom's term Danny Fox was hired to fill this need. Danny at that time was at South Dakota in a livestock extension position, where he was developing an excellent reputation. He had done his undergraduate and graduate work at Ohio State, his research interests were in livestock nutrition, he had several years of beef cattle farming in his background, and he was already an experienced spokesman in livestock circles. Danny's program at Cornell got off to a fine start only to be interrupted about two years later when he accepted an offer from Michigan State. It was to be about three years before Tom Reid's successor would recruit Danny back to Cornell.

Richard (Dick) Quaas, with a Ph.D. in animal breeding from Colorado State University, was brought in to teach the introductory animal breeding course (which P. D. Miller had recently taught) and to do research in animal breeding. (As an aside, it may be of interest to some that Dick's adviser at Colorado was Tom Sutherland, who was later one of the group of people captured by zealots in Beirut and held hostage for several years under very difficult conditions.) Dick's strength in animal breeding theory and computing strategy soon led to a modification of his assignment, and eventually he was to spend most of his time in research and in



Noland Van Demark



Danny Fox

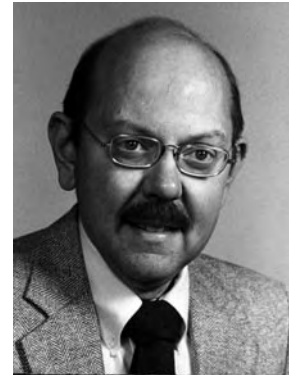
teaching upper-level animal breeding courses. In the ensuing years, he was often seen sitting in his office, smoking his corncob pipe, obviously in deep thought, presumably contemplating some complex equation or new way to tackle a computational problem. Many grew to visualize him as the new young “Henderson” of the department. Some years later Dick’s research brought him recognition as the recipient of the Lush Award (ADSA) and the Beef Improvement Federation’s Pioneer Award.

Toni Oltenacu, who had just completed graduate work in animal breeding at Minnesota and who had an interest in computer simulation modeling, was hired in an extension/research position. Toni’s assignment also changed over time, as he assumed a greater role in teaching and a minimal role in extension. In 1993, Toni received the ADSA Merck Ag Vet Dairy Management Award for his modeling research.

Mike Thonney, another Minnesota-trained man, was recruited for the position in beef cattle extension and research vacated by Danny Fox. His experience and interest were principally in livestock production and his special bent was in quantitative aspects of livestock growth. In time, as it turned out, Mike’s temperament and computer interests and skills seemed more in line with classroom than extension activities. His responsibilities were modified accordingly, as other staffing changes permitted. For many years now he has taught the beef cattle production course as well as a part of the practicum (Ezra’s Farm) in the course Biology of Domestic Animals. Mike would later add molecular biology techniques to his repertoire of research skills and use these to further his interests in mechanisms of animal growth.

Following Nate Smith’s departure, Larry Chase joined the dairy cattle extension group, with responsibility for applied nutrition and feeding. In his graduate work at Penn State he had developed an interest in factors affecting control of feed intake and hoped to pursue research in that area in support of his extension activities. As in most successful extension efforts, however, field problems soon demanded a broader research interest than perhaps initially anticipated, and in time Larry gained a reputation for his ability to pull together information on all sorts of practical feeds and feeding management topics. His library of reprints grew accordingly. Like many of his colleagues before him, his extension activities eventually earned him recognition by ADSA, which honored him in 2000 with its Alfa Laval Agri Dairy Extension Award. Much of his research dealt with the preservation and feeding value of silages and by-product feeds.

In 1975, as the department was about to finalize its recruiting effort for a lactation physiologist, state budget problems suggested a looming freeze on all vacancies. With the field of candidates reduced to a close decision between two finalists and with several vacant or soon to be vacant positions, a decision was made to hire both. Thus, Ron Gorewit and Ron Butler arrived, the former with responsibility for lactation physiology, the latter to add to the effort in reproductive physiology. Ron



Richard Quaas



Pascal Oltenacu



Michael Thonney

Gorewit had received his graduate training at Michigan State with one of the top lactation physiologists in the country. Ron Butler's mentor at Purdue, Paul Malven, was a Cornell-trained (Hansel) man who had developed an outstanding reputation as a reproductive physiologist. Both candidates had strong credentials and recommendations and came with ideas and enthusiasm. Butler's attention to and interest in the lives of his students led to his selection in 1997 by the CALS Alumni Association for its Outstanding Alumni Award. These two promising young men were the last to be added during Tom Reid's tenure as chairman.

In many respects it was not the ideal time to be launching a career in the department. Most of the new additions were fresh from graduate school and had little experience in academic matters. They arrived during a time of turmoil and division. Looking to the chairman for guidance and enjoying some measure of reciprocated loyalty, as might be expected, they were bound occasionally to find themselves at odds with some other faculty. Department politics has no legitimate place in important academic decisions, and I am convinced that none was involved here. This was, however, not the most conducive climate in which to demonstrate one's excellence during the critical high-pressure years preceding tenure decisions.

Retirements and Other Departures

On a cold and sad day in 1972, a few months after Tom Reid became chairman, several of us gathered at the Ithaca airport to see Sandy Meek off on his final journey to Scotland. Sandy, who had been diagnosed with liver cancer a few weeks previously, wanted to die in Scotland. He had only a little time left and the time had come for a difficult trip. Among others on hand that day was Willard Visek, who had arranged with those accompanying Sandy for the morphine shots that would be necessary en route. Hearts were heavy as we left the airport to resume our duties. Sandy had been an important part of the department and of our lives in the previous 10 years. We would miss his generosity, good judgment, warm personality, and Scottish brogue as well as his many contributions to the work of the department. He died in Edinburgh on March 16, 1972.

In 1974 three pillars of the department officially retired: Ken Turk, Jack Loosli, and George Trimberger. Together, these three had contributed over 100 years of distinguished service to Cornell. No attempt will be made here to summarize their many contributions in their respective areas, a lot of which can be found in the Turk history. (See also *J. Animal Science* 77:1611–1613, 1999). A word is in order, however, about what each has done since retirement.

Upon Ken Turk's retirement from his position as the first director of international agriculture at Cornell, he and his wife, Bernice, remained in Ithaca. Ken retained an office in Morrison Hall, where he regularly spent part of his time until his death in 1990. A substantial amount of that time was devoted to work on a long-time history project that culminated in publication in 1988 of his *Animal*



Larry Chase



Ronald Gorewit



Ronald Butler

Husbandry at Cornell University: A History and Record of Development from 1868 to 1963. Ken enjoyed again being associated with his old department and often attended seminars and talked with graduate students. As long as he was able to do so he also attended the annual meetings of ADSA and sometimes ASAS. In 1986 the seminar room in Morrison Hall was named the “Kenneth L. Turk Seminar Room” in his honor. To the surprise of many, he took up golf for the first time following retirement and became a very avid golfer. A long-time sports fan, Ken was still attending hockey games a few days before his death. He and Bernice, who died in 1988, left most of their estate to endow the Kenneth L. and Bernice F. Turk Assistantship Fund, the income from which supports stipends for department graduate students interested in becoming involved in developing countries. Ken was honored posthumously in 1999 when the National Dairy Shrine selected him for its Pioneer Award.

Jack Loosli, who had spent two years as a visiting professor at the University of Ibadan in Nigeria just before his retirement, moved with his wife, Rhea, to Gainesville, Florida. He became affiliated with the Department of Animal Science there, and it was not long before he was filling in as an acting department chairman and acting director of research for the college. For a number of years he served as editor of the *Journal of Nutrition*. Rhea died in 1988. Jack remarried, but his second wife, Lillian, died in 1999. Jack, at 91, is still (summer 2000) residing in his home in Gainesville, with a granddaughter who helps care for him.

After retirement George and Eleanor Trimberger continued to live in Ithaca. Unlike some of his colleagues, upon retirement George did not keep a desk in Morrison Hall. With his reputation as the “winningest” coach of the dairy cattle judging team well established and the dairy management program already largely in other hands, he was content to withdraw from active involvement in the department and take up new interests involving senior citizens. Always cheerful and active in the face of declining health, in 1997 he and Eleanor moved to North Carolina to be closer to their son. Eleanor died in 1998.

Also departing in the middle of Tom’s term were Nate Smith, Danny Fox, and Glen Schmidt. Nate took a position on the faculty at the University of California (Davis) for a few years before spending the rest of his career with Purina Mills in St. Louis. Danny, after less than two years at Cornell, accepted an offer in the Animal Science Department at Michigan State. As explained in chapter 3, however, he returned to Cornell three years later. Glen, who had for some time expressed an interest in getting into administrative work, was selected as chairman of the Department of Dairy Science at Ohio State, where he remained in several capacities until his retirement.

A year or so later Ellis Pierce, well known for his swine and meats extension programs over a period of some 20 years, took early retirement and assumed a position with FAO in Rome. He died there unexpectedly in 1978, while on this assignment.

That same year Willard Visek left to assume a position heading up a new nutrition program at the University of Illinois College of Medicine in Urbana. There he continued his distinguished career, pursuing his research interests in nutrition and cancer and serving the American Institute of Nutrition in several capacities, including editorship of the *Journal of Nutrition*.

In 1976, two more long-term faculty, Charles (Chuck) Henderson and John (J. I.) Miller, retired. Chuck did so somewhat under protest, having achieved the age of mandatory retirement while at the peak of his distinguished career. He was clearly still looked to nationally and internationally for advice and counsel on the mathematical solutions to problems in population genetics. Following retirement, Chuck continued his work in the department as though no change had occurred, although he did complain during coffee breaks that he was now unpaid. Invitations from other universities in the United States and abroad soon flooded in, and for the remainder of his life Chuck spent a good bit of his time as a visiting professor, usually for periods of a few months, at one institution or another; Illinois and Guelph were prominent among them. It was during this time that, adding to his previously copious list of research awards, he was elected to the National Academy of Sciences, one of the very few in agriculture to have achieved this honor. A lifelong sports fan and a person who seemed to need little sleep, he would seldom go to bed before 1:00 a.m. and was always up at the crack of dawn. Not one to pay much attention to his own health, in retirement he did suffer a few consequences. He appeared, however, not to let this interfere with his professional activities. Unfortunately, he died unexpectedly from a pulmonary embolism while hospitalized for a relatively minor problem in 1989.

J. I. Miller had been on the faculty here for 43 years. He had earned a reputation as a quiet but very solid authority on meat animal husbandry and as an advocate for the livestock industries of New York State, especially the beef cattle industry. His contributions included many years as a successful coach of the Cornell livestock judging teams, a lifetime of teaching livestock production courses and training graduate students, and a large number of practical feeding experiments designed to answer questions applicable to New York conditions. He was an active member and fellow of the American Society of Animal Science, at one time serving as its president. John and his wife, Viola, remained in the Ithaca area following his retirement. He died in 1980.

Facilities

One of the things that Tom Reid was heavily involved with throughout his term as chairman was the planning and construction of animal facilities. Construction of

the new dairy facility at Harford, already under way in Jack Loosli's time, was completed about one year after Reid took the helm and this unit was, therefore, stocked and in use late in 1972. However, the beef cattle, sheep, and swine units, as well as the headquarters building, were all in various planning stages for a number of years. The headquarters building, attached to the dairy unit, was finally completed in 1975 and the beef and sheep units completed and stocked in 1976–77.



Entrance to the new Teaching and Research Center near Harford, N.Y.

Moves to the new facilities meant closing out the old ones, which were eventually assigned to other departments, put to other uses, or torn down. It also meant consolidating, to the extent possible, the crews from the old units. The department had expected and budgeted at least some new state positions to come with the new facilities and made a considerable effort as the buildings were scheduled for completion to justify these additional budget items. At one point dairy and livestock producers and other leaders on the department advisory council assisted in lobbying for badly needed state budget support. These efforts were largely futile, and tightening budgets and state budget cuts involving loss of state positions soon became an almost annual affair. The department thereafter was forced to modify drastically its dreams about state support of research on practical dairy and livestock problems at the T&R Center.

In the meantime, on July 4, 1973, another fire had destroyed the old barn at the Reed Farm, which was then being used as a research unit by the reproductive physiologists. The cause was apparently spontaneous combustion of hay that had been put in with too high a moisture content. This facility, which was not owned by the state, was insured by the university. Hence insurance proceeds facilitated the construction of a modest new barn to house nonlactating cattle there in 1974.

Another (almost annual) attempt to obtain state support for the on-campus large animal research facility referred to in chapter 1 was made around 1974. The department's frustration over the time spent and the repeated failure to achieve positive results is reflected in a comment made by Tom Reid in material prepared for one of his budget conferences with the college administration at about that time:

“Faculty committee on planning of Large Animal Research Laboratory adapted previous plans to a 2-floor structure and refined the architectural program which was submitted on August 30, 1974; the planning funds (\$309,000) included in the State FY 1974–75 Budget were not released; this project, conceived in the Spring, 1949 has since transformed a more complex metamorphosis and seems to be subject to incredibly more forms of extinction, than an insect.”

In subsequent years we would try again, hoping for a better alignment of the stars.



The dairy unit and headquarters building at the Teaching and Research Center in 1978



Closeup of the headquarters building at the Teaching and Research Center

Academic Highlights

The heavy turnover of faculty and the relatively short time period involved might imply limited new accomplishments during this period in the department's history. It is true that research programs launched by new faculty hired during Reid's chairmanship had barely enough time to blossom before he was replaced. The evidence, however, indicates that as a group the faculty continued to be highly productive in their teaching, research, and extension efforts. A few highlights of activities at that time will serve to illustrate this.

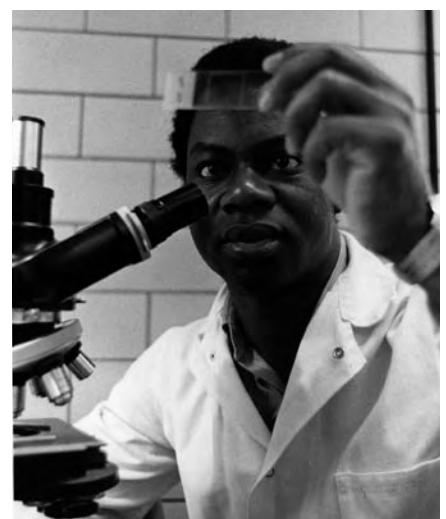
With more than 500 undergraduate advisees in animal science and only a handful of students with a real interest in poultry science, discussions were held with the Poultry Science Department about the possibility of unifying and coordinating the undergraduate curriculum between the two departments. The outcome was a decision to list all courses from both departments as Animal Science courses and to share the advising load among almost all of the faculty in both departments, and it soon led to a single major in Animal Science and a new recruiting brochure reflecting this change. It also resulted in a more equitable distribution of advisees and teaching loads.

Another significant change in curricular matters was the growing recognition that we must do more for those in the undergraduate student body who had animal interests other than the usual farm animals. Pets and laboratory and zoo animals played a prominent role here. In order to begin to better accommodate some of these interests, a new 1-credit course on the nutrition of companion animals (emphasis on dogs and cats) was added to the program. This course, taught by Skip Hintz, proved to be very popular. Over the years since then, several other courses of this nature (e.g., nutrition of exotic animals, exotic avian husbandry and propagation, equine genetics) have become a part of the undergraduate offering. It was also about this time that several professors in the department began using outstanding undergraduates as assistants in their courses. Usually they worked along with graduate students in carrying out their responsibilities. In most cases the undergraduates were highly motivated and did a superb job, gaining valuable skills and insight. This led to the addition of a course titled Undergraduate Teaching, through which academic credit was given to students who participated in this way.

In the middle of Tom Reid's term, the Graduate Field of Nutrition underwent another change that coincided approximately with a change in the organization of the Graduate School of Nutrition. The latter became the intercollege Division of Nutritional Sciences, with Malden Nesheim, a professor in the Department of Poultry and Avian Sciences, as the director. The Graduate Field of Human Nutrition and Food was then incorporated into the Graduate Field of Nutrition. The result of this and other changes was a much larger group of graduate faculty with



Throughout its history the department has made extensive use of laboratory rats and a variety of other laboratory species, in addition to large farm animals.



Graduate students of international origin have always contributed significantly to the culture and diversity of the department and to its reputation in foreign countries.

even greater diversity of interest in nutrition, as defined in the broadest sense. As indicated in chapter 1, these changes contributed to a decline in unity of purpose and soon to a growing tendency for graduate students with an interest in animal (and especially ruminant) nutrition to apply through the Graduate Field of Animal Science rather than that of Nutrition. A similar pattern of change has taken place in the Graduate Field of Animal Physiology.

Willard Visek's departure led to a jurisdictional squabble over rights to his position. Since (because of his M.D. degree) he had been coordinating and teaching part of the mammalian physiology course (although apparently only 16 percent of his time was devoted to this), the Division of Biological Sciences wanted the position in order to refill it with a cardiovascular physiologist. We thought that unfair, since it had been, without question, our position in nutrition up to that point, and in our planning we had nutritional metabolism and growth in mind. Furthermore, the division wanted a voice in decisions related to refilling other animal science positions where incumbents had joint appointments there.

From the mix of resignations, hires, budget freezes, and cutbacks that were soon to occur, it is difficult now to determine whether the department retained or lost the Visek state line. At any rate, that line was not made available for refill in Animal Science at the time. On the second question, the department took the position that, while we wanted to be helpful and cooperative with the division, we could not afford to lose final determination and control of staffing of any of our future vacancies. In the case of some of the physiology positions involved (e.g., Hansel's and Foote's) we had a long-standing commitment to New York farmers, who had successfully lobbied for their creation and funding. And, as Tom Reid argued eloquently, "We feel that departments such as ours need fundamental scientists in various subjects to serve as departmental mitochondria." History indicates that the department won that one.

The first Dairy Days represented an innovation in extension activities in 1973. This program, which drew an audience of farmers, farm leaders, and agribusiness personnel from New York State and surrounding areas, featured on-campus presentations on new research and other topics of current interest to leading dairy producers. Although it usually attracted only 250 to 450 outside registrants, Dairy Days was received enthusiastically and continued on an annual basis for several years. To some degree it was an attempt to encourage producers to visit the campus again as they had done in earlier days during Farm and Home Week. Eventually, however, it was dropped in favor of offering this type of program in several more convenient sites around the state.

Research activities during these years continued to represent a great diversity of interests. Henderson, who had written about his best linear unbiased prediction (BLUP) methods as early as 1948, was now applying BLUP to the prediction of multiple traits, using all relationships among



For many years a large mainframe computer in the basement of Morrison Hall was the center of activity for research by the animal breeding group.

animals, which increased the accuracy of sire evaluation. Since then the use of this method has spread around the globe, and BLUP appears in almost every foreign language article dealing with prediction methods. He developed a rapid method of computing the inverse of a relationship matrix, thus greatly enhancing computer speed in tackling such problems. In the meantime Van Vleck continued his dairy cattle selection work, while venturing into some equine activities. Dick Quaas launched studies of genetic trends in performance-tested beef herds and the efficacy of performance testing to increase weaning weights and other economically important traits. Everett devoted much of his time to the application of Henderson's latest theories to sire selection methods, examining such questions as the biases related to the use of natural service sires and the relationships among type, production, and longevity in dairy cattle. Bob McDowell, with cooperating colleagues in a number of tropical and subtropical locations, was accumulating data and studying the productive and reproductive performance of various types and breeds of cattle under these more adverse conditions.

Among the many research activities in nutrition, Tom Reid continued his studies of energetic efficiency, using the comparative slaughter technique, and examined various questions related to compensatory growth and efficiency of the metabolism of acetic acid. Pond was much involved with studies of mineral requirements and interactions in swine, including the effect of high- and low-calcium diets, with or without inoculation with *Bordetella bronchiseptica*, on turbinate morphology. Much of this work was done with the collaboration of Lennart Krook, a professor of veterinary pathology. The results helped clarify the question whether a condition in swine, referred to as atrophic rhinitis, was primarily caused by infection or by diet. This was a time when Van Soest began accumulating what was to become a vast library of data on the chemical composition and in vitro digestibility of tropical forages. He was also studying heat damage artifacts in analytical methods and developing equations to predict digestibility from chemical composition. Among Visek's findings during that period was the discovery that the growing dog requires dietary arginine, a deficiency of which increases orotic acid excretion in the urine. Hintz continued his investigations of mineral and other nutrient requirements of, and metabolism in, the equid, often using the pony as a model. I conducted quantitative studies on the effect of diet and other factors on vitamin B12 synthesis in the rumen and its absorption from the digestive tract. Warner focused on the impact of nutrition and management on development and growth of calves, while Hogue developed a variety of sheep management models and examined the nutritional efficiency of intensive sheep management systems. At that time we still had an active program in mink nutrition, and Hugh Travis (USDA employee assigned to Animal Science) was in the process of establishing the dietary protein requirement for mink from birth to six weeks of age at 24 to 27 percent. Hugh also worked on the requirements of mink for several B-vitamins.



Graduate student using cell culture in his research in the mid-1970s.

In the physiology group, Bob Foote was engaged in study of embryo development, using the rabbit model; developing appropriate media for culturing oocytes in vitro; and relating sperm output in bulls to testicular size. Bill Hansel devoted much of his effort to the nature, role, and regulation of the bovine corpus luteum and to the role and effects of arachidonic acid on prostaglandin synthesis in ovarian tissues. At the same time the use of progesterone in milk as a means of monitoring the estrous cycle and detecting heat was under active study.

Other research in the department during the Reid era included Stouffer's demonstration that certain carcass muscles resulted in more tender cuts when the normal rigor occurring in a chilled carcass was prevented by a tensioning device; and Natzke's mastitis prevention field trials demonstrating the effectiveness of teat dipping and of treating cows with antibiotics when dried off.

New Chairperson Sought

As the end of Tom Reid's five-year term of office was approaching, Dean Keith Kennedy struggled with the question whether reappointment was in order. He finally concluded that there was simply too much dissension in the ranks to allow Tom to be effective in a second term, and began discussion with the faculty about selection of a new chairperson. The faculty in turn did some straw polling and found fairly strong support for two department faculty members. The dean, expressing the view that, given the difficulties of the past five years, an outsider was the only solution he would approve, asked the faculty to consider Robert J. Young, who was the chairman of the Department of Poultry and Avian Sciences. The faculty then requested that their two internal possibilities be included in the discussions for comparison. The dean approved this arrangement. One of the internals refused while the other, urged by the faculty to do so, somewhat reluctantly agreed to participate. As expected, Dean Kennedy's final decision favored the stronger administrative experience of Bob Young, who was viewed as a departmental "outsider" with no axes to grind, while at the same time a Cornell "insider" with first-hand knowledge and experience of the administrative system.

Chapter 3 (1976–1983)

Robert J. Young Appointed Chairman

Bob Young moved from Rice Hall to Morrison Hall to assume his new responsibilities in Animal Science effective November 1, 1976. Trained in poultry nutrition, Bob had already devoted a large part of his professional career to administrative responsibilities and was considered to be a very successful department chairman. His move to Animal Science, which was considerably larger and more complex than Poultry and Avian Sciences, gave him both added responsibility and the challenge to unite a divided department. It was made emphatically clear from the beginning that Bob's move to Animal Science would not be associated with any thoughts of combining the two departments, a step that neither department would have favored at that stage.



Robert Young

Although some of the faculty, especially those in nutrition, had interacted with the new chairman for many years, others were not as well acquainted. So there was an initial period during which Bob was largely occupied with getting up to speed on the accomplishments and needs of the faculty in their various assignments, as well as the budgeting and management of the extensive livestock and farm dimensions of the department. Perhaps wisely, he set up a broad advisory group of faculty to help guide him in some of his early decisions.

With the new chairman came a new management style. Inevitably, his experience in another department, where the culture and philosophy differed in some respects from ours, initially colored his style and raised some anxiety among his new colleagues. Occasionally, for example, Bob would admonish the faculty in tones that to some seemed “preachy.” This sometimes resulted in good-humored responses and sometimes irritated those who interpreted it as patronizing. In general, however, he was not one to hold grudges, even if strongly rebuked, and he was willing to listen to those who disagreed with him. When presented with a well-supported idea, he was known on occasion to reverse his previous position and move aggressively with the alternative. Decisions got made and, although there was occasionally widespread disagreement with his final stance on difficult tenure decisions, over the course of Bob's administration it must be said that the department, in most other respects, became much more organized and cohesive. Given the difficult situation he had inherited, it is generally agreed that Bob did an excellent job of repairing the morale of the faculty.

One of the issues raised during the interview process was the question of budgets for individual faculty members. Up to that point, budgets had been handled on a divisional basis, or in some cases out of the front office strictly on an immediate

needs basis. The result was that many individuals did not really know what they had to work with, other than grant money they had obtained. This made it difficult for them to recruit graduate students, plan future studies or new approaches to courses, and reserve animals and facilities. This was a very important issue with many. Bob quickly established a system whereby each year faculty members (as well as those responsible for animal or farm units) were asked to submit budget requests, outlining their grants and other resources and their additional needs for support for teaching, extension, and research. Exercising some judgment, and within the limits of departmental resources, the department chairman could then approve an annual allocation, within which each individual could plan and proceed with expenditures. Each farm enterprise now had an estimate of costs as well as expected income and, within the department, transfers of feed or other resources were appropriately charged or credited. A few years later a system of day charges for research animals at the T&R Center, the Reed Farm, and the Forage Laboratory (later LARTU) was instituted. While not a perfect system for all, these innovations helped considerably in providing accountability and room for planning.

New Faculty Appointments

Like his predecessor, Bob Young had an opportunity to reshape the department, with nearly one-third of the faculty replaced during his term. This was a consequence not only of retirements but also of one unexpected death, several departures, and some reshuffling of responsibilities. The first position filled was in beef cattle extension and research, with Danny Fox being enticed to return to Cornell from Michigan State. Danny was clearly considered the best candidate available for the position and many, especially in extension, still felt that we should not have lost him three years earlier. With responsibilities somewhat redefined and an extension associate to be added to the team, and with strong encouragement from the beef cattle industry, Danny rejoined the faculty in summer 1977. Soon thereafter, he was the recipient of the Northeast Branch ASAS/ADSA Young Scientist Award. Later honors included the New York Farmers' Award and the Award of Excellence of the New York Forage and Grasslands Council.

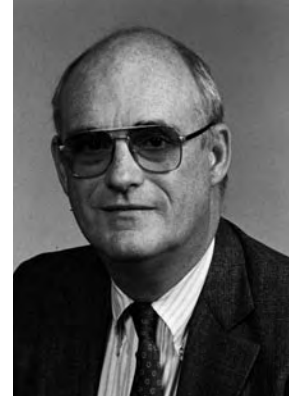
Another important extension position was filled later that summer. For some years the need for a specialist in reproductive physiology had been recognized. Dairymen were experiencing increasing problems with reproductive efficiency in high-producing herds. While many had long considered this to be the domain of the local veterinarian, it had become clear that research in semen preservation and thawing, heat detection, estrus synchronization, timing of insemination, endocrinology, nutrition, and other factors had relevance. Often veterinary practitioners were not well informed about the latest research in these areas. The challenge was to find a well-qualified person who would be respected by dairymen and practitioners alike and who would be able to educate both groups and mount a cooperative effort to improve reproduction in dairy herds. R. David Smith was the candidate selected. Dave had a dairy background, having managed a farm for several years after his graduation from Cornell, and could therefore “speak the farmer’s language.” His Ph.D. degree, with Bill Hansel, prepared him broadly in reproductive physiology, and he had subsequently done postdoc-



David Smith

toral studies in the Department of Physiology at the Wayne State University School of Medicine and in the Department of Biochemistry at the University of Rochester Medical Center. In addition to these strong credentials, Dave's personality and interests appeared to be a good match for the responsibilities of the position.

Following Coppock's departure in 1977, a third extension/research position was advertised, this one in dairy cattle nutrition. Charles Sniffen joined us in 1978, leaving a position at the University of Maine. Charlie had a particular interest in protein nutrition and had begun work on the solubility of various feed proteins in the rumen. It was felt that the amino acid requirements of the high-producing cow might be better served if the diet was manipulated to optimize the use of soluble protein nitrogen and urea by rumen microorganisms and the passage of more insoluble protein for breakdown to amino acids in the gut. This also opened up the possibility of supplementing diets with synthetic "protected" amino acids, such as methionine and lysine, which might be limiting. His work had already gained some credence within the feed industry and it was an area that he was to pursue with gusto at Cornell, eventually receiving the ADSA American Feed Industry Association Award in 1986. While Charlie's innate enthusiasm may sometimes have exceeded the limits of both his data and his time, his popularity with both extension and research audiences was unquestioned. Indeed, he was able to fire up leading dairymen on this and other subjects to a point where they were just waiting for his next suggestion, and he was always in the forefront nationally and even internationally when protein nutrition of dairy cattle was the topic of discussion.



Charles Sniffen

Two others hired in 1978 were Donald Beermann and W. Bruce Currie. A vacancy in the meats section created by George Wellington's retirement resulted in a search for a person trained in muscle biology, who would also be in a position to teach courses in meats processing. Don Beermann, who had received his Ph.D. in muscle biology from Wisconsin, and who had a meat animal background and an interest in animal growth, was the candidate selected. His versatility was quickly demonstrated when he volunteered during his first year on the job to teach the swine production course on an interim basis. Subsequently, Don focused his teaching in the meats area, helped develop and teach an animal growth course, and developed a research reputation in the area of muscle growth and protein accretion. In 1996 he was the recipient of the American Meat Science Association's Distinguished Research Award.



Donald Beermann

Bruce Currie, a native of New Zealand, filled a position created by Bill Hansel's move to the Veterinary College to join the Department (and Section) of Physiology there. Bruce received his Ph.D. degree from Macquarie University in Australia. He had done postdoctoral work in Canada and the United States and, immediately before coming to Cornell, was a research assistant professor in the Department of Obstetrics and Gynecology at Washington University School of Medicine in St. Louis. In his early years at Cornell, he developed and taught a general physiology course for animal science students and a physiology laboratory course in the Section of Physiology

for biology majors. As will be seen in the next chapter, Bruce later assumed different teaching responsibilities. His initial research interests in reproductive physiology and endocrinology at the level of the animal or organ were also destined to shift toward a focus on cell biology at the most fundamental level. His broad knowledge, analytical mind, quick wit, and helpful attitude soon made Bruce a popular mentor of both graduate and undergraduate students, his own as well as others. He took a personal interest in their goals and has often brought objectivity and rigor to their thinking. He has also become one of the most able and willing among the faculty in Animal Science to objectively assess and articulate departmental problems, needs, and possible strategies to achieve change.



Bruce Currie

What was perceived by some as a critical need for additional strength in nutrition and metabolism was addressed early in the Young administration. I had argued for a number of years that we should try to recruit a person with some experience. With administrative pressure to fill vacancies with assistant professors and some disagreement at the department level about priorities, however, my arguments had not prevailed. In 1978 the department solicited candidates for a position in teaching and research in nutrition. While attending the FASEB meetings in Atlantic City that year, I had the opportunity for an extended talk with Dale Bauman of Illinois. In the course of our conversation it became clear to me that under the right circumstances he might be attracted to Cornell. Since I had previously used Dale as an example of the type of person we needed in nutrition, I came home excited. Acquiring Dale's curriculum vitae and a few reprints, and with moral support from a couple of colleagues, Bob Young was approached to see whether the administration might be persuaded to try to attract a more senior scientist. Bob was unacquainted with Dale but, at our urging, agreed to discuss the question with Dean David Call who, when he saw the impressive credentials, wondered why we hadn't already hired him! The CSRS team that reviewed our department programs in May of that year strongly concurred with such a move. The position had to be rewritten and readvertised, but the rest is history. Dale Bauman joined our faculty in January 1979 as an associate professor with tenure. It was a move that was to have a very large impact on the future of what we later came to call the "metabolism group" in the department. An outstanding scientist, prodigious worker, and exponent of cooperation and mentoring, Dale brought recognition and honor to the department as well as the university.



Dale Bauman

Later that year two additional new faculty members came aboard, Elizabeth Oltenacu and Dean Boyd. Elizabeth, a native of England who had received her Ph.D. in animal breeding at the University of Minnesota in 1974, had since been working in the physiology section of the department as a research associate and later as a part-time lecturer in animal breeding. She joined the extension faculty following Dennis Hartman's departure, with a heavy commitment to youth extension and a small commitment to research. Not long thereafter, the youth of New York State were



Elizabeth Oltenacu

being introduced to the principles of elementary genetics and to the utility of the computer in this and other youth projects. Dean Boyd, a highly recommended young man with a Ph.D. from the University of Nebraska, was selected as the swine nutritionist to follow Wilson Pond. Dean was an aggressive and meticulous researcher and a good learner and he profited professionally from a wise and early decision to cooperate closely with Dale Bauman's group and others in much of his work, including that on porcine growth hormone. In 1989 he was honored by the Northeast Branch of ADSA/ASAS as the recipient of its Young Scientist Award.

In 1980 the department advertised a position in animal breeding. The introductory course in animal breeding was considered one of the more difficult courses to teach in a fashion that would really interest students. A major responsibility of the successful candidate was to teach this course, hopefully creating enthusiasm among students for animal breeding subject matter. John Pollak, an experienced teacher at California (Davis), was selected. John had been one of our own undergraduates who had done his graduate work at Iowa State and had been on the faculty at U.C. Davis for about five years before joining us. While on leave here at an earlier date he had worked with Dick Quaas, and upon joining the faculty the two became collaborators on much of their subsequent research. John was soon to become one of a group of four or five faculty members (others in the group as of 2000: Hintz, Galton, Currie, Bell) in the department who are widely recognized as being in particularly close touch with our undergraduate students. He was recently (1998) the recipient of the ADSA Purina Mills Award for Teaching, the third member (others were Elliot and Galton) of the department to be so honored. He was also winner of the SUNY Chancellor's Award for Excellence in Teaching.

Following the retirement of Ellis Pierce, who had handled meats as well as swine extension, there was the perception that swine extension as well as the small slaughter and meat plant industry in New York were being neglected. An extension associate position, under Dean Boyd's general supervision, was created and filled in 1978 to cover swine extension. The incumbent resigned, however, about three years later. The second person to occupy this position (Tro Bui), was a former graduate student and more recent refugee from Vietnam, who was already working in the department in a research capacity. In 1983 Tro assumed responsibility for both adult and youth swine extension activities and he has continued in this capacity to the present time. The dean eventually gave permission to advertise for a faculty member with responsibility for meats extension and applied research. Terence Dockerty, a congenial young man with a lot of practical experience in meat science, a flair for teaching, and a Ph.D. from Purdue, was selected. For several years following his appointment in 1980, Terry worked effectively in both youth and adult education and responded to the needs of the meats industry.

The last new faculty member recruited during Young's term as chairman was David Galton, in 1981. A native upstate New Yorker, Dave spent his first two years of college at SUNY Alfred. He received the rest of his training in dairy science, both



Dean Boyd



John Pollak

undergraduate and graduate, at the Ohio State University. He had taken a position in dairy management at Louisiana State University where he had quickly demonstrated his ability as an enthusiastic teacher and effective student adviser. The position at Cornell was to involve reorganizing and teaching dairy management courses, including the handling (with an assistant) of the dairy cattle judging team, and research in the dairy management area. As will be seen in subsequent chapters, Dave, in his indefatigable manner, was soon to establish an innovative dairy fellows program that would be widely recognized and to some extent copied around the country.

It is worthy of note that in 1981 the department also provided laboratory space for, and acquired the services of, James B. Russell, a USDA employee whose specialty was rumen microbiology. A native New Yorker who was raised on a dairy farm, graduated from Cornell, and whose graduate training was at California, Jim was given a courtesy appointment and he taught a course in rumen microbiology, conducted research, and trained graduate students in this area. He was a productive and talented scientist who contributed significantly to the department's program and became nationally and internationally known as one of the top people in his field. After a 10-year association, Jim requested a move to the Microbiology Department at Cornell but continues to cooperate with faculty and graduate students in Animal Science. His presence on the Cornell campus has filled an important gap in our subject matter coverage for both undergraduate and graduate students. The arrangement became possible because of some political maneuvering that occurred at the time the federal government established the U.S. Dairy Forage Research Center in Madison, Wisconsin. In order to get the critical votes necessary to enact the enabling bill, it was agreed that several "cluster" centers, each supporting related work, would be set up in a few other states. One of these was to be in New York and the obvious location would be Cornell.



David Galton

Retirements and Other Departures

Soon after Bob Young assumed the chairmanship, Sedgwick Smith, Robert Spalding, and George Wellington retired, each with 30 or more years of service. Sedg in earlier years (see Turk history) had made very significant contributions to the then evolving understanding of the relationship of cobalt to vitamin B12 in the ruminant and to the definition of the cobalt requirement. More recently his research had been focused on the requirements for macrominerals such as calcium and phosphorus. For many years he had taught the undergraduate livestock nutrition course, with Dick Warner usually covering alternate terms. Sedg had carried many other departmental assignments, including many years as graduate faculty representative and chairman of the graduate admissions committee. He was the one who was given the responsibility of working on behalf of the department with the State Construction Fund representatives, architects, and contractors who planned and built Morrison Hall. He scheduled his time carefully and predictably and was a "regular" at coffee breaks. An avid fly-tying fisherman and competitive gardener, Sedg stayed in Ithaca following his retirement. He died on February 11, 1990, following heart surgery.

Bob Spalding had devoted most of his time in the department to extension work, where he specialized in reproductive problems in dairy cattle, although for some time before his retirement he was called upon to focus on farm labor problems. As mentioned earlier, dairy cattle reproduction represents a particularly sensitive area for nonveterinary extension specialists. Thus, while Bob made a valiant effort to educate dairymen on ways of improving their reproductive efficiency through better heat detection and worked closely with artificial insemination technicians to improve insemination techniques, he had virtually no control over or input into the veterinary component of the equation. Low reproductive efficiency continued to be a major problem in high-producing dairy herds. Bob lived for some time in Ithaca following retirement, often wintering in Florida. Following the death of his wife, Margaret, he was seen less and less in Ithaca and, at some time after his second marriage, moved to Florida.

George Wellington had long been the leader of the meats section. He had responsibility for several meats processing courses and had a very successful teaching and research career behind him. His research activities had at one time or another included the effect of steroid hormones on meat production and quality, humane slaughter of animals, estimation of carcass composition of living animals, and tenderness and acceptability of meat products. George was well known, respected, and active professionally, having been chairman of the founding committee of the American Meat Science Association, a charter member of the annual Reciprocal Meat Conference, and president of both organizations. Upon retirement he undertook a few international consulting assignments, pursued his hobbies—golf, bowling, and travel—and enjoyed many good years in Ithaca. In 1998 he and Gladys, who was in failing health, moved to a retirement community in Texas, where he is still (2000) playing golf.

The following year (1978) Robert Bratton, another long-timer, retired. Bob had figured prominently in the early work on semen collection, extenders, and preservation, which contributed significantly to, and continued after, the successful introduction of artificial insemination into the dairy industry. He was also involved with studies of the nutritional requirements of bulls in artificial service. Bob had taught the beginning course in genetics and reproduction of farm animals for over 10 years before he developed and taught a popular course in livestock improvement through artificial breeding from 1962 until his retirement. For several years before retiring he had undertaken extension work in swine production and management in order to fill a gap left by Ellis Pierce's departure in 1975. Much of the pioneering research for which Bob was known was done during the early part of his academic career, and he later came under considerable criticism within the department for an alleged drop in research productivity. Upon his retirement some members of the faculty apparently chose to make an example of him by voting unfavorably on the question of emeritus status, which was ultimately not granted to him. This may have been unfair, because Bob had already been penalized in terms of promotion in academic rank (and, no doubt, salary), and because others with arguably no greater overall contributions have been granted emeritus status both before and since. Some years after retiring Bob moved to his native Indiana, where he still (2000) resides.

Another retiree during the Young era was Warren Brannon, the sheep extension specialist, who in 1979 after 23 years on the faculty, decided to devote his efforts to

a family slaughter business. Warren had worked effectively with many of the sheep breeders and lamb feeders of the state, providing them with what he considered to be the best educational information relating to their problems. He was especially effective in organizing lamb and wool marketing pools and in emphasizing carcass measurements and relating them to market value. In “retirement” he has continued to be actively involved in the slaughter business. Warren and his wife, Marian, still live in the Ithaca area.

In 1980, Sam Slack, for almost 30 years one of the pillars of our dairy extension program, retired. A nutritionist by training, Sam was a critical part of much of the dairy forage research over the years, had worked closely with the dairy show at State Fair, and during his later years in the department had overseen the operation of the T&R Center. He was widely known and respected by dairymen and agricultural leaders around the state for his extension activities in dairy cattle feeding. For a number of years before the arrival of Dave Galton he had coached the dairy cattle judging team. Following his retirement, Sam and Mayrene remained in Ithaca except for brief winter stints in Florida. Sam died on February 28, 2000, following a stroke.

Coincidental with Bob Young’s retirement, Harry Ainslie, with 33 years to his credit, took advantage of an early retirement opportunity in 1983. Harry, widely known and respected by dairymen throughout the state and especially revered by those closely associated with DHIA, had also gained a national reputation for his innovative ideas and leadership in organizing effective teamwork and methods to obtain and make use of production and management records. Among Harry’s honors was the ADSA Alfa Laval Agri Dairy Extension Award. The New York Dairy Herd Improvement Cooperative was instrumental in establishing an endowed fund to provide the Harry R. Ainslie DHI Leadership Award to help fund graduate students with interest in extension careers. Unfortunately, following his retirement, Harry’s deteriorating health curtailed some of the activities he no doubt had planned. He and Virginia moved into Kendal at Ithaca shortly after it opened. He died on May 1, 2000.

The retirement in 1980 of Hugh Travis should also be noted. Hugh was a USDA employee who had long had a courtesy appointment in Animal Science. He had been responsible for many years for research in fur animal nutrition and was one of a very small number of U.S. experts in mink nutrition. Hugh worked closely with Dick Warner and others in the department and was generally treated as a regular member of our faculty. In his later years here, when USDA closed down its efforts in mink nutrition, he assumed responsibilities for some of the work with sheep. He and his wife, Dorothea, reside at Longview in Ithaca.

Early in Bob Young’s term of office Carl Coppock left to head up the dairy program in the Department of Animal Science at Texas A&M. In his time at Cornell, Carl had gained an excellent reputation in extension and research as a dairy nutritionist. Some of us remember him as a highly organized “hustler” who usually moved around Morrison Hall so rapidly that it appeared that his feet hardly touched the floor. We urged him to stay, feeling that in the long run New York had much more to offer someone interested in dairy cattle than did Texas. But Carl was ambitious and restless. In retrospect, we may have been right. After some years at Texas, Carl was known to be seeking a position that would allow him more room for growth, and he eventually left A&M and set up a consulting business.

At about the same time Dennis Hartman, who for over 20 years had handled the dairy (as well as, in later years, the dog) youth extension programs at Cornell, decided to accept a similar position at Virginia Polytechnic Institute and State University (VPI). Dennis's very successful, low-key, and traditional programs emphasizing dairy cattle management and showring competition had been well received over the years by both youth and parents. However, there was some pressure from within the department to put more science in our youth programs and to move away from the heavy dependence on showring competition as a means of attracting and training young people. Knowing Dennis, whether this was a factor in his decision to move on is questionable. It seems more likely that a new challenge and the opportunity for a Missouri native to enjoy more moderate winters was the deciding factor.

The following year (1978) Wilson Pond, another long-timer, left Cornell to accept a research administrative position with the U.S. Meat Animal Research Center, USDA, at Clay Center, Nebraska. Wilson had been in charge of swine research and teaching for more than 20 years and was recognized widely for his expertise and for his prolific publication record in swine nutrition and management. The ASAS had honored him with its American Feed Manufacturer's Award and he was later to serve as president of ASAS and to receive its highest research award. While his work was at times primarily focused on mineral requirements and interactions, as indicated earlier, it was much broader than that, including studies of amino acid requirements and of the effects of undernutrition on learning ability. His departure, therefore, left a big gap in our coverage of both monogastric and mineral nutrition as well as swine production and management.

That same year (1978) William (Bill) Hansel moved his primary appointment from the College of Agriculture and Life Sciences to the College of Veterinary Medicine, joining the Physiology section of the Division of Biological Sciences as its chairman. Housed in the Department of Physiology, he continued his research program there, retaining use of much of the equipment and animal facilities he had used in Animal Science. Since the Division of Biological Sciences was an inter-college entity, he now had to deal with three deans (Arts, Ag., and Vet.), a problem that no doubt contributed to the eventual demise of the division. Bill served his five-year term as chairman and then stepped down to continue his research and teaching until his retirement in 1989. A major and distinguished player in the Animal Science Department for many years, his move to another department left a particularly large void in our departmental program in reproductive physiology. Bill had won many prestigious research awards, including the Borden (ADSA), Morrison (ASAS), and Carl G. Hartman (SSR). We were to miss his cheerful, upbeat, optimistic, and competitive presence. However, because his research interests did not change with the move and because Cornell strongly favors interdepartmental and intercollege cooperation, in many ways it simply represented a rearrangement of location and responsibility. Bill began another career in research after his retirement from Cornell by accepting an attractive senior-level appointment at Louisiana State University in Baton Rouge, where he is still (2000) active.

In 1981, after about 15 years at Cornell, Roger Natzke left to become head of the Department of Dairy Science at the University of Florida in Gainesville. Roger's extension activities, especially his excellent mastitis field trials, have already been discussed. Before his departure he had assumed teaching responsibilities in dairy

cattle management and had also gained administrative experience as part-time associate director of instruction in the college. Roger had for some time made known his desire to lead a department, and his varied experiences here had in many ways prepared him for such a change. Hence his departure was viewed as inevitable.

Tom Reid's untimely and unexpected death in 1979 left a major gap in the nutrition faculty. Following his term as chairman, Tom had actively resumed his research and writing. Widely respected around the world, he had trained a large number of international students in his day and had an excellent reputation for his extensive and effective use of the comparative slaughter technique in studying various facets of energy metabolism in the ruminant. Tom was a master at reviewing the literature on a subject and synthesizing broad hypotheses or concepts such as the relationship of the digestibility of forages to their date of cutting. He would then design experiments and meticulously collect data (sometimes well beyond what some of us thought adequate) to test the validity of these hypotheses. He was still planning to build and install open-circuit calorimetry chambers in his forage laboratory, a plan that had been delayed when he assumed the department chairmanship. He had for some years been teaching a graduate-level course in energetics. His sudden death seemed a cruel blow for someone who had so recently suffered the disappointment referred to in the last chapter. Some of his colleagues thought the latter probably contributed to this sad outcome.

Facilities

The new animal facilities at the Teaching and Research Center and the Swine Farm, many of which were in use or nearing completion during Tom Reid's administration, were finally all occupied in 1977–78. The original plans had anticipated building the swine unit along with the others at the T&R Center in Harford. In the end, however, it was built as a confinement facility adjacent to the site of the old swine unit and, like the old unit, it was connected to the Ithaca sewer system. Approval of this continuing arrangement for waste disposal was a crucial factor in its siting, which was strongly favored by those involved with swine research because of its near-campus location.

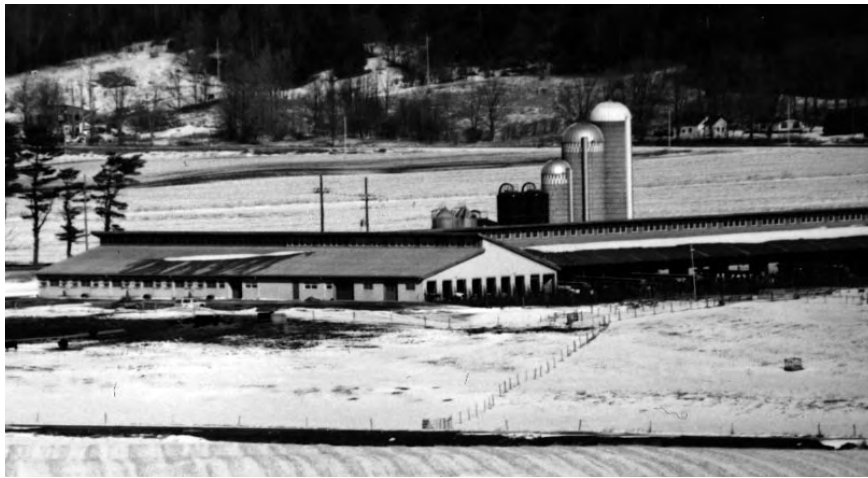
Another very important project that came to fruition late in Bob Young's



The swine unit on Pine Tree Road nearing completion in 1977

administration was the construction of the on-campus Large Animal Teaching and Research Unit (LARTU). As already pointed out, attempts to obtain state funding for such a unit had been a continuing frustration for many years. Bob was not spared this frustration as he assumed leadership and attempted to get a commitment from the administration to support a request in Albany. With several new faculty the need had become critical since they were simply unable to do the types of research that would keep them on the cutting edge. A number of us feared that we would lose some of our best young faculty members or perhaps be unable to attract the best to fill upcoming vacancies unless we could promise such facilities.

Under continuing pressure from faculty, Bob finally indicated that he had been unable to convince the administration that our needs were an overriding priority, even though the plans had been considerably downsized from the original. He suggested, however, that if a small group of us wanted to try convincing the dean, he would not stand in our way. Accordingly, Dale Bauman, Bruce Currie, Bob



The beef cattle unit at the Teaching and Research Center



When the beef cattle facilities on campus were torn down, this part of the old beef unit (originally a draft horse facility) was retained and remodeled at the Teaching Barn, where animals could be temporarily housed in campus for use in various classes.

Young, and I met with Dean David Call and Associate Dean Joan Egner to discuss our predicament. By this time we were at the point of emphasizing our minimal needs and had considered remodeling Tom Reid's forage laboratory (now that Tom had died) as a possibility in lieu of a new building. To make a long story short, before that meeting had ended, the dean, convinced of the need, had made a commitment to provide funding in the low six-figure range, out of college resources. Bruce Currie and Dale Bauman took the initiative in developing the project. After plans were drawn for renovations and an addition to the forage laboratory, and cost estimates had been obtained, the dean ultimately provided in excess of one million dollars (partly borrowed) for the project, which resulted in a first-class facility. This, in my opinion, was an excellent example of the positive outlook and decision-making ability that characterized Dave Call as dean. He told me later that this was one of his best decisions, even though it cost him considerably more than he had initially reckoned.

One other building project that took place during the Young era involved construction of a new barn at the Reed Farm to facilitate superovulation and embryo studies and the relocation of the large animal surgical facilities from Morrison



The sheep unit at the Teaching and Research Center



The Large Animal Research and Teaching Unit (LARTU) showing the newer construction (left), which has been attached across the north end of older barn-type buildings that constituted the Forage Lab or Green Barn of earlier days.



One of the laboratories immediately adjacent to monitor rooms in LARTU



A monitor room in LARTU in use during an experiment that involved close sampling and monitoring attention of a surgically prepared animal

Hall to the Reed Farm. The latter was an attempt to eliminate the problems of transport of animals between the two facilities and the lack of facilities in Morrison for housing animals recuperating from surgery. Because a large part of the traffic through the surgical suite was at that time being generated at the Reed Farm by Bill Hansel and his group, this seemed like a logical solution. Dean Call provided most of the funding for this project as well, with his understanding that it would be repaid over a period of years through charges to the research grants of those using the facilities. Unfortunately, it later turned out that the dean of the Veterinary College had not interpreted the understanding in the same way, and the money was never repaid. It was well known in college circles that, for a variety of reasons, there was little love lost between these two deans. This “misunderstanding” did not help alleviate the situation.

Another item worth noting was the closing of the Dog Farm. This facility, next to the Laboratory of Ornithology on Sapsucker Woods Road, had for many years served as housing for the breeding laboratory rat colony as well as for the beagles used by McCay, Visek, and others in their research. Following that it was used

temporarily by Hansel for dog housing. Eventually it was to become a victim of the new regulations on animal care, which would have required extensive renovation. In the end its use was turned over to Ornithology.

Closing of the Meat Shop

For many years, even predating the move to Morrison Hall, the department had maintained a retail meat market through which to dispose of meat resulting from teaching and research activities. This was popular with the clientele that had been built up over the years and it was undoubtedly continued well beyond the point where it returned any financial benefit to the department. The time eventually came, however, when faced with budget reductions that eliminated state-supported positions, a decision was made to close the retail shop on May 6, 1983. The plan was that we would continue to slaughter some animals for teaching and research purposes, but the resulting carcasses and cuts would be wholesaled to local merchants. Researchers would be charged for costs of slaughter and disposal. Two meat cutters, whose jobs were on the line, had recently gained union bargaining status. When faced with layoffs, they contested the decision on grounds that meat cutters would still be required in spite of the closing of the shop. The matter went to arbitration and the result was that the junior one of the pair was laid off and the other remained on the payroll. Interestingly, meat shop patrons from the community, some of whom had shopped there for over 35 years (and one for 50 years) and loved the special service they and their families received, were very distressed about the decision to close the shop. In fact, Bob Young found himself writing letters of apology and explanation to the wives of professors of history, economics, hotel administration, and others who wrote, pleading for a reversal of the decision.

Budget Cuts

A budget squeeze or freeze in a partially state-supported college was not a new phenomenon in the Young administration. All chairmen had faced one or more such problem. However, by the late 1970s and early 1980s budget tightening had become almost an annual event and, once the easy cuts had been accommodated, some difficult decisions involving personnel had to be made. Vacancies (in both faculty and support staff) were often frozen as a first step. Our department had greater flexibility than many, because of our income from the sale of milk and animals. Sometimes a person on a state line that was given up in a budget cut could be picked up temporarily on income funds, with the hope that next year would be better. Eventually, however, with continuing cuts, the piper had to be paid. My first personal encounter with layoffs occurred in 1981, when Bob Young selected the three or four secretarial and three or four farm support positions that would be cut, then went on vacation, leaving me (as acting chairman) to advise the individuals involved that their jobs were being eliminated. It was not a pleasant duty, even though we had been able to find other college openings for many of them. This was by no means to be the last of the major cuts we would have to face as state support of the statutory colleges at Cornell continued to erode, periodically, for many years.

Unionization of Farm Support Staff

Although the trades and maintenance people at Cornell had been unionized for some time, Animal Science had not had to deal directly with any category of unionized employee until the farmworkers were organized under the United Auto Workers (UAW) in 1981. Attempts to organize secretarial and technical employees had failed, and the one other union employee (meat cutter) mentioned earlier retired and was not replaced. Having another category of workers added grievances, arbitration, strike threats, and a brief strike (with the attending complications) to the administrative burden. Not all affected employees favored the union and there was disagreement as to whether it really benefited the individual worker.

In some respects a union, which occasionally pits the employee against the supervisor, does not seem consistent with the collegiality and common purpose usually associated with a research or teaching team at a university. For the most part, however, the business of the department has seen few serious interruptions or problems arising from this change in employer/employee bargaining. On the one occasion, a few years after the original contract was negotiated, when there was in fact a brief strike, supervisors and professors milked cows and performed other necessary chores in order to maintain the integrity of experiments in progress. Most of the problems have been of the nuisance variety: petty complaints or disagreements that have taken time to resolve and often added to the ever-increasing paperwork load.

Academic Highlights

Among reproductive physiologists it was a time of intense activity in developing the necessary techniques and then measuring hormonal patterns related to various physiological states. Hormones of interest, some measured in circulating blood, some in milk, included estradiol, progesterone, cortisol, placental lactogen, and oxytocin. Hormone receptor methods were coming into use and uterine steroid receptor changes associated with endocrine changes were under study. The ever-increasing availability of such endocrine data facilitated the understanding of the control of body functions, the interpretation of experimental findings, and the design of techniques through which such knowledge could be applied in the field. One example of the latter was the use of milk progesterone levels as an aid in improving on-the-farm reproductive management. Studies on the cryopreservation of spermatozoa, embryo preservation, and the use of electronic probes for estrus detection were continuing. Individual faculty were reporting on subject matter ranging from the induction of parturition with relaxin and PGF₂-alpha to the electromyographic analysis of equine myometrium during pregnancy.

Bauman and Currie, both new faculty members, enunciated a novel concept, which they called “homeorhesis,” to describe their idea of a mechanism permitting long-term regulation of body functions, distinct from homeostatic regulation. Bauman and his group, continuing their investigation of some of the key endocrine candidates for such homeorhetic control, began their studies on growth hormone and prolactin. It was an exciting time, since these early studies predated the availability of recombinant bovine somatotropin, and required the use of a large part of the natural purified bovine growth hormone available in the United States. This represented a value of perhaps one million dollars and it was donated to Cornell for the studies. I remember Dale commenting on the sense of responsibility he felt

as he decided on the solvent he would use and the dilution necessary for that first batch! A mistake would have been costly, indeed. The response in milk production, however, suggested that he was in the ballpark and marked the beginning of a series of experiments that would eventually bring both fame to the group and controversy to the dairy industry.

In the meantime, other nutritionists were examining ways of stimulating gluconeogenesis in the neonatal pig to enhance survival; milk fat depression, propionate metabolism, and vitamin B12 status; mineral uptake, interactions, and metabolism in horses; the use of bamboo by the giant panda; factors influencing microbial efficiency in the rumen; the solubility of various protein fractions in the rumen; methods of estimating protein escaping degradation in the rumen; the growth and feed efficiency of cattle of different mature sizes; serum immunoglobulin levels as related to the incidence of respiratory diseases in calves; and the cation exchange capacity of dietary fibers.

These examples by no means reflect the full range of the ongoing nutrition research. Van Soest, for example, was heavily involved at this time in work with condensed tannins as limiting factors in the use of tropical forages; the use of chromium, cerium, and cobalt as digesta markers; comparative digestibility of fiber by different species; rate of passage of digesta; the nutrient quality of ammonia-treated forages and the effects of dietary fiber source on human intestinal transit and stool output. I had begun preparing cows surgically with chronic catheters in the portal, hepatic, and mesenteric veins to allow quantitative measurement of the net uptake of nutrients from the gut and the net output of glucose and other metabolites by the liver. Butler, looking for the causes of low fertility in high-producing cows, was examining the relationship of energy balance and postpartum ovarian function in early lactation.

The animal breeding group, still focused on the development of selection programs to maximize efficiency of production, developed the maternal grandsire model for sire selection and examined relationships between milk and fat production, type, and “stayability” in dairy cattle. Pollak and Quaas worked on a number of methods, including mixed-model methods for farm and ranch beef cattle testing programs. Other research activities included measurement of selection bias in multiple-trait evaluations and of relationships among total merit and various management and production traits. Elizabeth Oltenacu, one of the new members of the group, engaged in studies of canine behavioral genetics and computer-simulated inheritance as a teaching aid.

Beermann began studies of cellular aspects of skeletal muscle growth and its regulation. Stouffer continued his evaluation of live animal merit using ultrasound, tested carcass tensioning devices as a means of preventing rigor mortis and improving meat tenderness, and began work on a slaughterhouse online ultra-



Blood samples being taken simultaneously from catheters in the hepatic vein, hepatic portal vein, and carotid artery of a lactating cow during infusion of a marker into a mesenteric vein.

sound system for evaluating carcasses. The latter is now widely used in slaughter plants.

In the management arena, Toni Oltenacu was developing his dairy cattle reproductive management model, Galton began a study of the effects of premilking udder hygiene on milk quality, and Merrill was engaged in milking management experiments.

In 1980 the department hosted the seventy-second annual meeting of the American Society of Animal Science. Total attendance, including families, was about 2,100. For the first time, on a trial basis, poster sessions were scheduled. All told, 741 abstracts and 11 invited papers were accepted for presentation in oral and poster sessions. The faculty and staff, most of whom had spent many hours during the preceding months on committee activities associated with this successful meeting, were happy to see it over and hoped our turn to host this society would not come up again for some time.

The arrival of new faculty, as already indicated, resulted in course revisions and new teaching approaches in several areas. The introduction of a rigorous sophomore-level animal physiology course initiated a significant change in the undergraduate program and was, over the next several years, accepted by students with widely varying degrees of enthusiasm, depending on their career goals. With Sedg Smith's retirement, Doug Hogue began teaching the introductory livestock nutrition course, which he handled for a few years. Later Dick Warner gave up teaching the more advanced animal nutrition course and again assumed responsibility for the introductory one. After Bob Bratton retired, Bob Foote developed and taught an intensive course in artificial insemination, while John Parks, who was at that time a research associate and part-time instructor, assumed responsibility for some parts of the sophomore/junior-level course in reproduction.

Extension, increasingly under pressure to reduce travel and devote more time

to applied research, made moves to capitalize on opportunities to train and use multiplier groups in the field. Thus, programs for veterinarians, feed dealers, and other agribusiness leaders were developed to complement those offered to county agents. An attempt was also made (in part by providing financial support) to encourage personnel in the Diagnostic Lab (NYSCVM) to participate and cooperate in extension activities, especially in resolving farm problems in the dairy, beef, and swine industries. With some dairymen now owning and using computers, this was a time when attention was increasingly being given to development of programs for least-cost rations and for ration balancing.

It was during Bob Young's administration that the North Country coop-



Doug Hogue (left) and Brian Magee (manager of sheep unit) and a research subject enjoy their new facilities.

erative research/extension/demonstration dairy project, which the department had developed during the Loosli era, with the Miner Institute at Chazy, N.Y., was closed out. The jointly owned research herd was sold at that time. This change was largely a consequence of difficulties encountered in pursuing credible research/demonstration trials at that location, where oversight by Cornell faculty was of necessity minimal.

Administrative Changes

Well along in Bob Young's term as chairman, Barth Mapes was placed in charge of farm and livestock operations at the T&R Center, assuming many of the responsibilities Sam Slack had been assigned sometime during Tom Reid's tenure as chairman. A new administrative assistant position was then added to the Morrison Hall staff, with a broad mandate to assist the chairman in carrying out his duties. A young man with business as well as chemistry training filled this position.

Young Takes Sabbatical Leave

Although department heads and chairmen were, like all faculty, eligible to request sabbatical leave, it had been some time since this had occurred in Animal Science when, in summer 1981, Bob Young decided to take advantage of an opportunity to spend a leave at USDA. He asked me to serve as acting chairman during his leave and, having frequently served in this capacity for short periods before, I agreed to this. However, it rather abruptly complicated some of my plans. I had already requested sabbatical leave myself, for the six-month period following Bob's, in spring 1982, and was expecting to teach my course and tidy up some research activities that fall before leaving for England in late January. Serving as chairman in a department as large and complicated as Animal Science is considered by some a full-time job so, with my course and other activities to deal with as well, I found myself very busy right up to my departure date. Thus, although I enjoyed the problem-solving role that my new responsibilities imposed on me, my leave was more than welcome when it came!

Young Takes Early Retirement

In spring 1983, in conjunction with budget cutbacks, the state offered an early retirement incentive program, one of the first of what would become many such offers in ensuing years. Among those who chose to take advantage of this program was Bob Young. Retiring in July of that year, Bob thus ended more than 17 years of service as a department chairman, over six of them in Animal Science. His retirement announcement had come up rather suddenly, only a couple of months earlier, and seemed to surprise many in the department. The dean had quickly set in motion procedures for selection of a successor.

Chapter 4 (1983–1991)

J. Murray Elliot Appointed Chairman

The procedure routinely used by the dean at that time to select a new chairman involved an invitation to all faculty members in the department to suggest confidentially to him the names of those deemed to have the necessary qualifications. With this information in hand, the dean (David Call) then scheduled an interview with each faculty member to explore his or her feelings about the merits of each of the potential candidates. Following this, he simply made his decision and approached the individual selected to determine whether he or she would be willing to assume the chairmanship.

I did not “run” for the position and I certainly did not campaign for it. Indeed, when the offer was made, I had some very serious thinking to do. I had just begun an exciting new research project that I had been itching to start for several years. Through the cooperation and help of Dr. H. W. Symonds of the UK and Dr. D. F. Smith of the NYSCVM, we had prepared the first lactating cows in North America with both chronic hepatic and portal liver as well as mesenteric cannulae and were starting to accumulate a few quantitative data on absorption of metabolites from the gut and of gluconeogenesis by the liver. I still enjoyed teaching my introductory course each fall. Why give all this up to become chairman? Dave Call could be very convincing! He assured me that I had the very strong support of the faculty and was willing to negotiate postdoctoral assistance to help finish up ongoing research. I finally rationalized my decision somewhat in this manner: “Cornell has been very good to me...perhaps after teaching the same course for over 20 years it would be an exciting challenge to try my hand at administration...if I don’t like it I can give it up after three years...maybe I can also get my kicks out of helping other people be successful.” In the final analysis, I would be less than honest if I didn’t admit that the honor and challenge associated with being selected as the leader of a department usually ranked first in the nation had an influence on me.

Dave Call had asked for a decision before I left town to attend the annual meeting of the American Dairy Science Association. I gave it to him just before leaving and was surprised when, upon arrival at the meeting, almost everyone there seemed already to know about it. That was almost scary! For the first several months after my official appointment began on July 21, 1983, I often found myself inadvertently heading toward my old office on the second floor when I arrived at Morrison Hall in the morning. Frequently, for an even longer time, I found it somewhat difficult to believe that I had really agreed to this change!

On the evening before I became chairman, I received a call from Cornell Safety (now Police), advising me that some pigs had broken through a fence and were on



Murray Elliot

Pine Tree Road. Unable to locate the swine farm manager or several other alternative contacts, the patrol had been directed to me. I proceeded to the swine unit to get that problem resolved. In retrospect, I guess this was an early alert to the numerous little details for which the department chairman in Animal Science is ultimately held responsible, although they do not appear in the job description. Fortunately, most of my duties were of a more substantive nature.

Unlike many new chairpersons, I had the benefit of having served informally as acting chairman for short periods as far back as the Loosli era and, as already indicated, for a six-month period in 1981–82, when I had been formally appointed to the position. So I was somewhat familiar with many of the administrative procedures as well as most of the players in the dean's office.

No doubt when I became chairman some observed a change in administrative style, but I do not suggest that this represented either an improvement over or a step down from that of my predecessors. I will simply say that I tried, while tending to my leadership responsibilities, to continue to reflect my own personality and values, focusing on fairness, integrity, openness and, where possible, informality.

As I settled into my new office, one of the first things accomplished was to move our business office (which by then had grown to four full-time people plus some part-time help) across the hall, in order to correct an overcrowding problem and make possible the rearrangement of those in the front office. At the same time Lynn Polan, a loyal and dedicated employee with whom I had worked for about 15 years, was asked to move to the front office to assume the role of administrative aide. This move resulted in a small secretarial shuffle that, however, left Katie Simmons as the second support person in the front office. Both long outlasted my tenure there.

Another change in the administrative team occurred about a year later. As indicated earlier, late in his term Bob Young had added an assistant to help him with his duties. This seemed to me, in the face of declining budgets, to represent overkill. We already had Ruth Teeter, a long-term employee, in charge of the business office, and Barth Mapes was still spending part of his time dealing with maintenance and other problems on campus. Not wishing to make snap judgments, however, I decided to postpone a decision on this matter for a time, while I gained some experience. After a few months it also became clear that our administrative styles were not fully compatible and it was decided that we would close the position by the end of the first year. Shortly thereafter the incumbent, a capable and well-trained individual, accepted a position in another department. Later during my term several other significant changes in the administrative group occurred, following retirements. These will be described elsewhere in this chronicle.

I found the chairmanship to be a role that could and often did occupy my mind during most of my waking hours, seven days a week. Even if I awoke during the night, it was often to ponder a problem or think about something I would soon need to do. Perhaps because of my inefficiencies in some of the tasks that faced me on a daily basis, there never seemed to be enough time to take care of some of the niceties that might have brightened someone's day. Many of the problems a chairman faces are "people" problems. Sometimes I thought that I would have been better prepared had my training been in psychology! Nevertheless, from my perspective my "seat of the pants" approach to dealing with such problems seemed for the most part to work, and I am proud of the fact that morale stayed high.

Some decisions were made with input from my “war council,” a small group consisting of those who were asked to serve as division leaders. Standing committees, long a part of the department *modus operandi*, continued to deal with many day-to-day matters. On one occasion about midway through my term a faculty retreat was held to encourage faculty to vent their frustrations and to brainstorm ideas, directions, and priorities for the future. At least two of my predecessors had held similar retreats. While the long-standing arrangement of department divisions was retained during my administration, the responsibility of the division leader was primarily to serve as spokesman for that group or discipline when input on problems or plans was needed. Individual faculty were not expected to answer to the division leader on academic or other matters. In point of fact, I made a deliberate effort to “fuzz” the divisional borders and promote interdisciplinary cooperation and interaction. The informal “metabolism” group as well as the “animal growth” group that sprang up and flourished, with membership from nutrition, physiology, meats, animal breeding, and production divisions, are examples of progress in interdisciplinary activity. It seemed to me that it was about this time that many of the faculty began, within their disciplines, more consciously to view the research mission of the department as one of seeking to better understand the biology of domestic animals. Clearly, a number of faculty members had long held that view, but the general realization that the big breakthroughs leading to future applications in the animal industries would likely result from exploitation of such understanding was a more recent reality.

In my opinion it is important that a chairperson, as a part of his or her leadership and managerial responsibilities, keep abreast of the activities and progress of each of the faculty members. I tried to do this insofar as possible in an informal way throughout the year, by chatting over coffee or dropping by the lab, in addition to holding periodic formal meetings.

New Faculty Appointments

My earliest opportunity to hire a new faculty member arose during my first year, when the freeze on an extension position we had been about to fill was lifted. For a number of years the department had discussed the need for a person who would integrate dairy production and economic principles into a herd management systems approach, making use of the DHI records database. Few people with appropriate training were available, but we knew of at least one young man, Terry Smith, who appeared to fill the bill. Terry had received his Ph.D. at Michigan State University in a well-known program in dairy management that combined agricultural economics and dairy production. He was employed at Ohio State University. To make a long story short, we were able to attract Terry to our new extension/research position in 1984. A very capable person and excellent spokesman, Terry quickly gained the acceptance of his colleagues in Agricultural Economics, some of whom had looked askance at the idea of having expertise in economic management in the Animal Science Department. He settled into his extension work and was soon named codirector of the new state-funded Pro-Dairy extension program. The adjustment was perhaps more difficult for the other faculty members in Animal Science, few of whom initially felt that they were in a good position to understand or evaluate his accomplishments, since we had never had anyone in such a discipline before and because his interest in research seemed second-

ary to that in extension. Nonetheless, after the tenure review, he was about to be promoted in early 1989 when he decided to accept a position at the University of Wisconsin as director of a similar new dairy extension program there.

With my move to the front office and some temporary state budget relief, the dean agreed to let us fill an assistant professor position in nutrition research and teaching. We wanted to strengthen the critical mass in metabolism. Dale Bauman had brought strong expertise in the biochemistry dimension. This time we hoped to add expertise in nutritional physiology, if possible. When the position was advertised, among other candidates we became aware of the interest of a very well-qualified young Australian from La Trobe University who was at that time just completing a study leave in perinatal medicine at the University of Colorado Medical Center. His Ph.D. was from the University of Glasgow. The problem was, as an experienced senior lecturer at La Trobe, he was clearly overqualified for a position as assistant professor. The dean would not yield on the question of beginning rank. In the end, this candidate was persuaded to apply anyway, was selected as the top candidate, and was hired as an assistant professor, with the understanding that as soon as he felt comfortable doing so, we would entertain a move on his part to seek promotion to associate professor with tenure. There followed a lot of paperwork and what seemed like a long wait for immigration clearance but eventually, late in 1985, Alan Bell and his family arrived in Ithaca. His expertise in fetal surgery facilitated an initial research focus on factors affecting fetal and placental growth, using the sheep model. Later he conducted other work, including that on the nutrition of the periparturient or “transition” cow. Upon Dick Warner’s retirement, Alan was asked to teach the introductory animal nutrition course in addition to the contributions he was already



Alan Bell

making in advanced nutrition and growth courses. The introductory course is considered one of our key undergraduate courses, and it has been the policy of most of the chairmen in this department to assign these courses to our best teachers. Alan was promoted to tenure in 1988, to full professor in 1995, and became chairman of the department in 1997. In 1998 he was the recipient of the ASAS Animal Growth and Development Award.

Following Bob McDowell’s retirement, and after review by the college’s Committee on International Agriculture, we were given permission to retain that “international” line in Animal Science and proceed to advertise for a new faculty member. Robert Blake, an associate professor at Texas A&M, who

had received his training in animal breeding at North Carolina State University, was selected. Bob had a strong reputation in applied dairy cattle breeding, was considered a very capable teacher, spoke fluent Spanish, and had international experience (including Peace Corps) and interest, especially in Latin America. He joined us in summer 1986, quickly taking on the teaching and advising com-



Alan Bell uses the surgical facilities in LARTU to place a blood-sampling catheter in a fetal lamb in utero.

mitments Bob McDowell had vacated, and establishing research projects involving economic, nutritional, and genetic management issues in farming systems in Latin America and Africa. Bob Blake's international program was recognized by ADSA in 1999, when he was the winner of the International Dairy Production Award.

In the middle of my term as chairman, two of our faculty moved to Roberts Hall to take up administrative positions in the college. Dave Smith became associate director of extension and Elizabeth Oltenacu associate director of instruction (later Academic Programs). This left two vacancies in extension that we were authorized to fill. In filling the Smith vacancy we were fortunate to be able to attract James Ferguson, who at that time was in a “soft money” position in the Veterinary College at the University of Pennsylvania. Jim, who had a master's degree in bioengineering and a veterinary degree, had practiced veterinary medicine for several years before joining UPenn. A prodigious worker and a bright, cheerful, cooperative, outgoing individual, Jim was accepted immediately by dairymen as well as agribusiness personnel and other veterinarians. A departure for the department, in the sense that we had not hired a faculty member without a Ph.D. for many years, he was nonetheless considered to be an almost perfect fit for this extension/research position and gave us the added potential benefit of a smooth liaison with some of our colleagues in the Veterinary College. Jim was experienced in theriogenology as well as nutrition and computer technology and quickly and effectively started applied research projects that combined these interests. Unfortunately, our good luck in adding him to what was becoming a very strong dairy extension team was to be short-lived. In a sense some of his strengths were to be our undoing. His drive and popularity kept him on the go mornings, nights, and weekends, to an extent where it began to have repercussions on his family. Previously accustomed to a situation where the family could take the kids to visit their grandparents on weekends, after about three years in the Ithaca community his spouse felt isolated with young children in their country home, and was eager again to be located where they could enjoy more interaction with family. The University of Pennsylvania was happy to capitalize on this situation. Knowing that, from a professional standpoint, Jim really would have preferred to remain here, we attempted to persuade him not to act too hastily, but realistically there was no way we could, and morally no way we should, win this one.

The other position, in youth extension, was filled by a young woman who had just completed her Ph.D. degree with Bill Ellis at Texas A&M. Mary Jean (M. J.) Wylie had a strong interest and some experience in working with youth, seemed to have innovative ideas for such programs, and was enthusiastic about the position. Her initial interest in research was related to rate of passage of digesta in cattle. The position was considered a difficult one to fill satisfactorily because the diversity of the extension audience and consequent demands placed on the incumbent's time left little time for much else. Our expectations for research were minimal. However, we did insist that all of our faculty devote at least some time to research, even if it meant curtailing the extension effort to make this possible. Most new Ph.D.s insisted on positions that would allow much more time for research. Hence we were enthusiastic and hopeful that we had found a good match for the position when



Robert Blake

M. J. accepted our offer. Unexpected difficulties surfaced later. In many respects youth extension programming in New York was at that time entrenched in tradition, some of which was not serving the clientele particularly well. M. J.'s attempts to initiate new ideas, and particularly, perhaps, the manner in which she attempted to do it, were not readily accepted by some of the field personnel and volunteers. M. J., on the other hand, was ambitious and determined. The net result was what eventually amounted to a small rebellion on the part of some county-level personnel, and a divided audience. Attempts to resolve the difficulties were not totally successful. It was clear that there were valid arguments on both sides of the issue. In this type of climate, however, extension efforts, even if they represent appropriate program changes, do not usually blossom; nor was such a climate conducive to the development of her research program. The three-year reappointment deadline, therefore, presented both the department and the college with a dilemma. In the end the college overrode our carefully considered and painful decision, thus postponing resolution of the matter until tenure decision time, during the next administration.

In 1987 we were given an opportunity to fill a teaching/research position in reproductive physiology. Considering that Bob Foote was nearing retirement age, and in the interest of retaining balance in the physiology section, it was decided that we would advertise for someone with expertise and interest in gamete physiology. We were all aware that we had a strong internal candidate in John Parks. John, a zoology graduate of the University of North Carolina, had received his Ph.D. degree in reproductive physiology at VPI, had done postdoctoral work in biochemistry at Penn State, and had been in our department in a research associate/instructor capacity for a few years. His interests lay in gamete physiology and cryobiology and he was at that time engaged in work on sperm membrane phospholipids. John was judged the top candidate for the position and was officially appointed in early 1988. Since then he has assumed responsibility for the basic course in reproduction in domestic animals, as well as a more advanced course in gamete physiology and fertilization, and he co-teaches a course in exotic avian husbandry. His research program continues to be focused largely on gamete physiology.



John Parks

One of John's hobbies, an interest in hawks and other raptors, eventually led him to start the Cornell Raptor Program, a volunteer effort that rehabilitates injured birds of prey that have been brought to the College of Veterinary Medicine for treatment. They are subsequently used in the breeding program and offspring are released into the wild. Now that our undergraduate student body includes many who have interests in wild and exotic species, this type of effort is really appreciated, and the husbandry course mentioned above came about as a natural consequence of student interest.

When Terry Smith moved to Wisconsin we attempted once more to recruit someone with an interest in using dairy records as a basis for a systems approach to dairy cattle management. The successful candidate was Lawrence (Larry) Jones, who had received his advanced training at the University of Illinois in nutrition (M.S.) and dairy management (Ph.D.). Larry was a bright young man who was adept at computer technology and he quickly gained visibility both within the state

and nationally. One of his assignments was to serve as liaison with the NYDHIC. Unfortunately, at that time there was a subtle ongoing power struggle between the cooperative and personnel associated with Cornell's Dairy Records Processing Laboratory. In this situation it was almost impossible for a liaison person not to get caught in the crossfire, and Larry's role was not an easy one. In my opinion, once he had familiarized himself with NYDHIC, he handled those responsibilities objectively and capably. His stance on some matters, however, was not always in accord with that of some of his colleagues in the department. There was also, perhaps not unexpectedly, some disagreement among the faculty about his research and extension directions and methods. In the next administration the tenure recommendation, no doubt reflecting these differences, was turned down at the college level. It is perhaps noteworthy that the department appears not to have tried for the third time to recruit someone with similar training.

With the departure of Terry Dockerty, a new search for an extension/research person in meat science was proposed. We were by then again suffering budget cuts and position freezes. It had been the policy of the dean, however, that if a department failed to grant tenure to an individual, the position would not be taken from that department. This was policy obviously instituted to ensure that departments would not be tempted to grant tenure in questionable cases simply to retain positions. In any event, after an unsuccessful search and a decision by Jim Stouffer that he would retire earlier than expected, it was decided to put a priority on recruiting a person in a research/teaching position who had training in muscle biology and physiology or biochemistry.

As it turned out, we were fortunate to attract the interest of an outstanding young man who was just completing his Ph.D. at the University of Illinois and whose qualifications seemed made to order for this opening. He was trained in muscle biology and physiology and had used molecular biology techniques in studying muscle growth. He had planned to do postdoctoral work before seeking an academic position, but I was able to negotiate an initial one-year period during which he would be on our payroll but could spend almost all of his time working in a "postdoctoral" capacity in the laboratory of Professor Mariana Wolfner in the Department of Genetics and Development at Cornell. This arrangement was unusual but was agreed to by the dean, and seemed to me fully justified as we were trying to move the department into the biotechnology age in the face of crumbling promises of new positions in molecular biology. We viewed this young man as our first foot in the door, so to speak. My rationale in the first-year plan was that not only would he learn additional techniques but hopefully he would also forge some collaborative ties with the Division of Biological Sciences that would be helpful in the years ahead. Unfortunately, not many months had gone by when we became aware that personal problems were developing, as he and his wife, who also held a position at Cornell, were divorced. He returned to Illinois to put his life back together, while we had to settle for a good idea that simply did not work out.

This finally sealed the long-term fate of the Meats Division. Only Don Beermann remained. He did a remarkable job of handling the teaching and research with minimal help. At this point he was devoting much of his research effort to aspects of animal (muscle) growth. We had never had a large group and now had little hope of ever again having a critical mass of expertise devoted to meats research. The time seemed opportune to devote our dwindling resources in meats, insofar

as teaching commitments would permit, largely to growth and development. An informal group of nutritionists, physiologists, geneticists, and others interested in various aspects of animal growth and development had already formed. We would leave meats research to other universities that had programs large enough to hope that they might make useful contributions in that area.

The last faculty position filled during my term was another vacancy in extension created by the departure of Charlie Sniffen. While the dean was at that time cutting positions from departments to satisfy severe budget cuts, he considered dairy extension to be a high priority. Thus, while he would not agree to release positions we thought we had negotiated for teaching/research in molecular biology, he did allow a search for an extension dairy nutritionist. This type of decision-making by the dean, although it was certainly his prerogative, aggravated some of our faculty, who felt we should be masters of our own ship. However, it was clearly a question of accepting his offer or not having the position, and I deemed it important to proceed. The successful candidate, who was hired as an associate professor, was Alice Pell, who held a research/teaching position at the University of Vermont (UVM), where she had just been granted tenure. Alice had a somewhat unusual background, having graduated from Harvard with a degree in architecture. She subsequently earned a degree in education and, after Peace Corps experience in Africa, had changed directions and earned her Ph.D. in ruminant nutrition at UVM.

Alice arrived in the fall of 1990 with a large trailerload of laboratory equipment that she had obtained on research grants while at UVM. This turned out to be a substantial help in equipping her laboratory here. Her areas of interest were largely centered on digestion kinetics and aspects of rumen microbiology. Within a few years, with the retirement of Peter Van Soest, Alice's responsibilities were switched to teaching and research, at which time she assumed some of Pete's teaching responsibilities. Some years later, in 2000, her work with students was recognized when she received the College's Donald C. Burgett Distinguished Advisor Award.

One other recruiting effort should be mentioned here. After 1988, when Dale Van Vleck retired from Cornell we had, for a time, an opportunity to fill another position. Department discussion led to agreement that we should seek another population geneticist with excellent teaching skills, since Dale had carried a fairly heavy teaching and advising load and since the animal breeding group wanted to rearrange some teaching assignments. My personal opinion was that it was time to begin thinking about a new direction in animal breeding, and I would have favored a move to hire a person trained in molecular genetics. However, the animal breeding group argued successfully in our faculty deliberations that they had an outstanding history as the leading population genetics group in the United States, if not the world, and that they represented one of only about two strong groups in North America. Furthermore, they felt that a molecular geneticist would not really fit with their group and would probably not be comfortable or able to make much progress alone. Why not continue to strongly staff the area in which they felt they could continue to represent excellence? The faculty as a body agreed. I proceeded to try to sell this to the administration. After some initial objections and a rewrite of the position requirements to include at least some training and interest in molecu-



Alice Pell

lar aspects, we were given a green light. The search turned up one or two individuals with strong traditional population genetics training, but in most respects they would have brought little new to the group. We, therefore, did not make an offer. Subsequent budget problems prevented us from conducting another search.

As will be noted later, we acquired four additional faculty members by transfer from another department when the Department of Poultry and Avian Sciences was disbanded in 1990.

Retirements and Other Departures

As mentioned earlier, Bob Young retired shortly before I became chairman, in 1983. Subsequently, he took on a part-time assignment in the CALS Research Office and later, during Dean Call's leave of absence, he was acting associate dean of CALS. After these short-term experiences he was fully retired, and he and Greta remained in the Ithaca community, except for their extensive travel schedule. They now reside at Kendal at Ithaca.

Noland VanDemark, who spent some time in the department after stepping down as director of research in CALS, retired from Cornell in 1983 and moved to North Carolina. Although Noland had earned his Ph.D. in reproductive physiology here in 1948, had a notable research and teaching career at several other universities, and was appointed in the department when he came to the campus as director, he had not been directly involved in our department except for the brief period before retirement.

In 1986, Bob McDowell, after about 20 years as our first "international" professor, elected to retire in North Carolina. Bob's unique contributions, as we sought to internationalize our teaching and research efforts, were discussed earlier in this volume. It is, however, worth noting here that he has continued to devote much of his time since then to voluntary efforts in the Department of Animal Science and in international programs at North Carolina State University. Nonetheless, his continuing loyalty to Cornell is illustrated by his recent generous endowment, the income from which will support an assistant in the International Agriculture 602 course. Bob's wife, Dorothy, died a few years following his retirement.

After 26 years on our faculty, Dale Van Vleck elected to retire in 1988, and he and Dee moved to Lincoln, Nebraska, where he assumed a position in beef cattle genetics with USDA. He was stationed at the University of Nebraska, where he was given a courtesy appointment in the Animal Science Department. Dale had been a dedicated teacher, a popular adviser, a section leader, and a very productive dairy genetics researcher in this department. His quiet, soft-spoken demeanor belied the energy, drive, and accomplishments of a much-respected and honored star. Honors while at Cornell included the Lush Award (ADSA), Animal Breeding and Genetics Award (ASAS), and National Association of Animal Breeders Award (ADSA), as well as an honorary doctor of science degree from the University of Nebraska. His early departure to his native Nebraska left a large gap in our dairy breeding group.

Another long-timer to retire in 1988 was Jim Stouffer. Jim had been a key part of the teaching program in meats for over 30 years and was an internationally respected pioneer in the development and use of ultrasonic equipment and methods to evaluate the composition of live animals. Among his honors were both teaching and service awards from the American Meat Science Association. Upon retirement, he formed his own company, featuring the use and sale of ultra-

sonic equipment for live animal and carcass evaluation. He and Wanda continue to reside in Ithaca.

A year later Dick Warner retired, following 38 years on the faculty. Dick's contributions to the undergraduate and graduate programs in nutrition were legion. He was especially innovative and effective in teaching the beginning nutrition (feeds and feeding) course, which he handled for many years. His effectiveness as a teacher and adviser is reflected in the several prestigious awards he received. These included both national (ASAS Distinguished Teacher) and college (Professor of Merit and Edgerton Career Teaching Award) honors. Noted for his early work on rumen development, he had devoted much of his research in later years to calf nutrition and management. He had also, during the early 1970s, served part-time as an assistant director of research in CALS. Dick and Barbara (Bibs) now spend winters in California but the majority of their time in Ithaca.

Although he was no longer in Animal Science, it should be recorded that Bill Hansel, after 40 years of service to Cornell, officially retired from the Veterinary College in 1989. Bill's long and distinguished presence in this department and his move to a position in Louisiana have been discussed elsewhere.

At the very end of my years as chairman, Sam Sabin opted for an early retirement incentive program, bringing to an end some 27 years of youth extension work, primarily with horses. The last of our faculty to have no research component in his responsibilities, he had tackled a difficult and sometimes frustrating assignment with energy and innovative ideas. His success is perhaps best measured in terms of the thousands of youth who completed projects and came back for more, and in the fact that much of his innovative equine program is still in place at this time. Often frustrated by administrative mandates and State Fair bureaucrats, Sam occasionally ruffled some feathers, but he was a dedicated teacher and he had a positive influence on the lives and future accomplishments of many young people in New York. Sam and Joan now headquarter in Ithaca but spend much of their time traveling the country.

Other faculty leaving during my term as chairman included Terry Smith and Jim Ferguson, whose departures to accept other positions have already been discussed. Terry Dockerty, following a negative tenure decision, also accepted a position in the meats industry, where his interests and many talents would serve him well. A fourth faculty member in extension, Charlie Sniffen, who had been with us for about 11 years, was lured to Michigan State University to fill a named chair and take charge of the dairy program in the department there. Charlie was a popular figure in our dairy nutrition program, and we made a special effort to keep him at Cornell. With the dean's help we were able to meet essentially all of the conditions that he said might keep him here. In the end, however, the generous salary offer and the endowed funds available for research at Michigan State were probably the deciding factors. Charlie was growing weary of the grantsmanship battle and looked with relief at the prospects of spending less time at that. Interestingly, it was only a few years before he was back in New York, this time as president of the Miner Institute at Chazy. With a courtesy appointment in our department, Charlie was, at least partially, back in the Cornell fold.

Facilities

Several improvements in facilities occurred during my administration. In January 1985, an early-morning fire, probably started by faulty wiring associated with an elevator used to move hay bales, totally destroyed the Mount Pleasant heifer barn. The use of this barn by the department for heifer raising had been discontinued a few years earlier in a move to increase the efficiency of our animal operations. It was still in use by Agronomy for hay storage, and another department had been allowed to use it for animals on a short-term basis. Since the barn was insured by the university, \$100,000 in insurance was made available to the Agronomy and Animal Science departments. While Agronomy chose to use its money for a hay storage barn, we opted to construct a new heifer facility and a small boar test station at the T&R Center. Both were basically Agway structures that were modified slightly to suit our needs. The new heifer barn, a freestall pole unit sited so that it could be added to at a later date, allowed us to close down some old and obsolete facilities previously in use at the T&R Center, thereby inching us closer to compliance with the emerging university, state, and federal regulations for care of experimental animals. The boar test station likewise moved us a step up from

older makeshift facilities that had been used temporarily to establish a small extension project in cooperation with New York swine producers.

A new equine research facility (the Pony Barn) was built on campus by Agway at a cost of nearly \$200,000 in 1986–87, with most of the cost assumed by the dean. This facility was the end result of extensive discussions about, and negotiations on, how best to provide Skip Hintz and his colleagues with animal space appropriate for intensive metabolism studies on small numbers of horses or ponies.

Another substantial construction project (ca. \$200,000) also funded largely by the dean was the Mt. Pleasant Sheep Unit, put into use in 1988. Over a period of years Doug Hogue and Brian Magee (sheep farm manager) had selected sheep and developed an intensive management system to accommodate multiple lambing on a year-round basis. At the time, there was increasing interest in the identification and development of small profitable alternative enterprises that might be adopted by some of those New York dairymen who could no longer compete in the rapidly changing dairy business. Highly productive sheep, with an attractive niche market for lamb, were seen as one possibility. Our need was a unit in which we



The Mount Pleasant sheep unit



This high-producing Dorset ewe (B314), managed on the Cornell STAR system, produced 24 lambs in 12 lambings (2 singles, 8 sets of twins, and 2 sets of triplets) over a period of about 7.5 years.

could demonstrate the possibilities. The new unit was constructed on the site of the old heifer barn at Mt. Pleasant. Stocked with some 450 to 500 ewes of Dorset/Finnsheep breeding, on an accelerated lambing (STAR) program, within a few years data were collected showing that it was possible to produce 2.8 to 3.0 lambs per ewe per year. This contrasted with the average for U.S. sheep producers of about one lamb per ewe per year. Although, unfortunately, lamb prices suffered a big drop during this time period, seriously affecting profitability, the demonstration was a unique contribution to the potential survival of the U.S. sheep industry. Many progressive producers in this country and abroad have adopted this technology, to their advantage.

Among renovation activities, improvement of the fume hoods in Morrison Hall represented a substantial state-funded ventilation project involving changes in air intake and exhaust systems and aimed at making the hoods in each laboratory work effectively and independently. This work involved cleaning and repair of the hoods, removal of asbestos, extensive reworking of the air ducts, repair of the roof, and installation of special air removal fans. We ended up with what appeared like a multitude of rockets on the roof! As part of a university effort to bring all Cornell animal facilities up to minimal standards before application for AAALAC accreditation, several of our units underwent renovations. Others such as the Blair Barn were closed down. The Mitchell Barn was destined to be torn down but was turned over to the Veterinary College, which had a sponsor to renovate it for use in equine research. Installation of a cage washer and other improvements in our small animal facilities in Morrison Hall were made possible through a special NIH grant, which also funded improvements to facilities at the Reed Farm and elsewhere.

As more faculty had begun using small computers in classroom exercises, several CALS computer laboratories were funded and opened up for use by students in all departments. The ones nearest Morrison Hall were located in the Agricultural Engineering and Agricultural Economics buildings. Since it was difficult to schedule such facilities for class use, there was soon pressure to have our own facility. It was CALS policy not to support such units for individual departments. We were able, however, with department funds, to set up a small facility in Morrison 346 with about 15 modern PCs for our exclusive use with laboratory sections. This was the humble beginning of what subsequently proved to be a revolution, as both faculty and students became more computer literate. It was not long before additional, larger computer classrooms were being established, periodically updated, and heavily used.

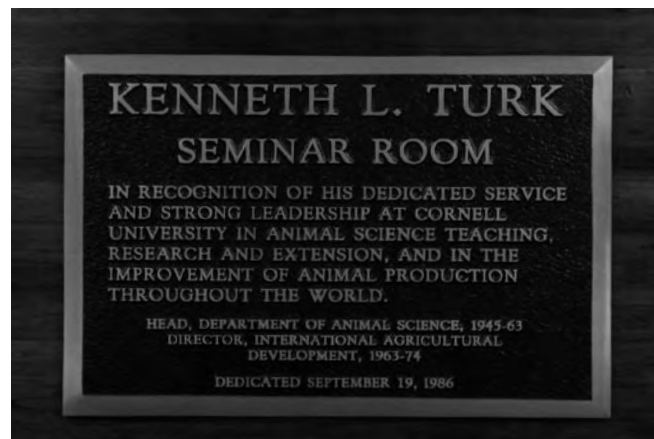
Occasionally, college funding could be obtained to paint or otherwise update a classroom. We were successful in getting our largest lecture hall (room 146) modestly updated with video projector and dedicated computer and repainted for the first time in about 25 years. Over time a few other classrooms and other areas were similarly redone. It had been the custom to repaint offices almost only when a new faculty member was hired. Some of the offices had become really shabby. A decision to use department funds to cover the old green paint on the walls of all faculty offices that had not already seen such treatment was, therefore, seen by many as a morale booster.

By the time I became chairman it was clear that any attempt to secure state funding for construction of new facilities or replacement of major equipment was often likely to be futile. As already indicated, Dean Call was generous in trying to

meet our highest construction priorities in innovative ways, sometimes even borrowing the money and paying off the loan over a period of time. Each year state funding might bring us one new item of major equipment, and occasionally on an unexpected basis state funding was available for a few renovation projects, such as painting or remodeling a teaching or research barn. Some college help was provided to rebuild the milking parlor at the T&R Center. As a department we felt a responsibility also to try to deal with some of our own needs. One year, for example, in an attempt to compensate partially for our aging laboratory equipment inventory, I decided to invest \$200,000 of our department reserve funds in replacement of large laboratory equipment items. We also invested the remaining reserve in the university investment pool and used the annual income as a continuing contingency fund for high-priority equipment purchases. Another way in which we began meeting our own needs was by asking our very capable T&R maintenance crew to undertake small construction and renovation jobs. At small cost and without the hassle of state or even university oversight, for example, they constructed at the T&R a calf research barn to house small groups of experimental calves after they were moved from hutches. Likewise several additional horizontal silos were built. These successful moves were the beginning of what turned out to be a string of larger projects, including a major expansion of heifer facilities, during subsequent administrations.

Seminar Room Named for Kenneth L. Turk

In recognition of Ken Turk's many contributions to the department, in 1985–86 administrative permission was sought and secured to name our seminar room the Kenneth L. Turk Seminar Room. A committee headed by Dick Warner and Bob Foote was appointed to plan an appropriate dedication program and plaque to commemorate the occasion. Thus, on September 19, 1986, representatives of the administration, friends, and colleagues, including some former department Advisory Council members and at least one former commissioner of Agriculture and Markets, joined Ken and Bernice for a brief ceremony in the Turk Seminar Room, which had been spruced up for the occasion.



The picture and plaque in the Kenneth L. Turk Seminar Room

Research Highlights

A vigorous research program depends heavily on the ability and efforts of individual research faculty to obtain at least some outside grants. A number of our faculty were persistent and successful in obtaining very substantial competitive grants from NIH, NSF, USDA, and the Cornell Biotechnology program. Many others were awarded by industries, cooperatives, and other sources. At times the “gift” category total was almost as large as that for grants because in many instances the company or cooperative involved wished to avoid the substantial overhead costs that were charged against grants. As this practice became common, however, the administration soon partially closed that loophole by assessing an overhead charge against many gifts as well.

Certainly one of the overriding themes that characterized this period was the excitement and activity associated with Dale Bauman’s work on bovine growth hormone or somatotropin. Once developments in biotechnology had made the recombinant hormone available in quantities that were needed for cattle experiments, early, promising short-term observations made with the natural hormone were quickly extended. It was soon evident that unprecedented increases in milk production and production efficiency would be possible if a suitable means of administering the synthetic product could be found. One of the features that was particularly appealing was that it represented only a minor modification of a natural peptide and had none of the potentially harmful attributes of steroids, which had long since stirred fear in the hearts of some consumers. Bauman’s group was recognized nationally and internationally for being at the center of this new development, which soon attracted the active attention of many others, because the potential impact on the dairy industry seemed large. While Dale’s group explored not only the effects on milk production and composition but the mechanism of action at organ, cellular, and molecular levels, and the safety of its use, others elsewhere repeated and confirmed many of the earlier experiments.

An important feature of much of Bauman’s research was the extensive collaboration he fostered at department, college, state, national, and international levels. At a time when our college administration was advocating such interdisciplinary and interdepartmental efforts and occasionally suggesting that we were deficient in this respect, it was overlooking the fact that, to a substantial degree, the Animal Science Department had long been involved in just such activities. Dale, who over a period of time had as many as 35 active collaborating scientists in academia and industry, represented the epitome of such efforts, but many other faculty also cultivated effective collaboration.

As the likelihood of the use of a recombinant product in the production of milk increased, a network of people and organizations opposed to biotechnology was

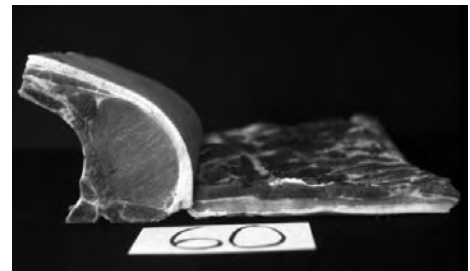
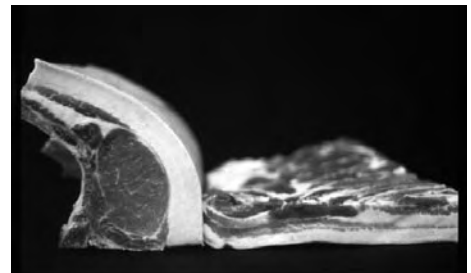


Dale Bauman and Henry Tyrrell cooperate in a study of the effects of bovine somatotropin (bST) on energy metabolism at the Energy Laboratory at ARS-USDA at Beltsville, Maryland.

organized to stop any such application. The campaign of falsehoods, character assassination, and innuendo they orchestrated was unbelievable. Bauman was made the target of much of this mischief and for several years was forced to devote inordinate energy and hours in marshalling material to respond to this propaganda war. No doubt the well-funded opposition was successful in slowing down approval of the Monsanto product, which was the first such recombinant material finally to be available for use in the dairy industry in 1994. The furor has not died down yet (1999). Political (as opposed to scientific) considerations have led some countries to ban the use of such products, and the antitechnology interests in the United States are still jumping at every opportunity to try to have U.S. Food and Drug Administration approval rescinded. Among his many honors, in 1985 Bauman received the prestigious Alexander von Humboldt Award for research considered to be the most significant to U.S. agriculture for the previous five-year period. Three years later he was elected to the National Academy of Sciences, and for several years he served as chairman of the Board on Agriculture. ADSA, ASAS, CAST, and other organizations have also recognized Dale's outstanding contributions with some of their most coveted awards.

Others in the “metabolism” and “growth” groups pursued the effects of growth hormones and beta-agonists on growth and carcass composition of meat animals. The dramatic dose-response effects of porcine growth hormone in reducing fat accretion were among the important results of this work. Likewise, it was shown that feeding cimaterol could have dramatic effects on muscle growth in lambs. In the meantime, other members of this group were examining questions such as the effects of heat stress on prenatal development in sheep, the effects of nutrient infusion into fetal sheep on growth and fat deposition, glucose and glycerol kinetics, effects of energy balance and excess degradable protein and postpartum reproductive performance in dairy cattle, and the control of skeletal growth at the growth plate chondrocyte level. Heavily involved in various aspects of these studies were Bauman, Beermann, Bell, Boyd, and Butler, a subset in metabolism that I sometimes referred to (and bragged about) as the “Five Bs.” Mike Thonney was the one with the skeletal growth interest.

For the most part, the other faculty with nutrition interests (Chase, Fox, Hintz, Hogue, Pell, Sniffen, Russell, Van Soest) were generally considered to be associated with the “gut” group, although it should be pointed out that there was a lot of overlap and at best any grouping was totally informal and arbitrary. Hintz continued his work on such topics as mineral and vitamin E nutrition of horses and on the effects of exercise on lactate accumulation. Hogue pursued the nutrition and management of highly productive sheep. The others, through their important contributions to the literature on animal performance, analytical methods, rates of passage, rumen microbiology and protein solubility, also contributed significantly



The administration of exogenous porcine somatotropin causes a dramatic reduction in the lipid content of pork.

to the development of the Cornell Net Carbohydrate Protein Model. This computer model was an attempt to build a dynamic program that would accurately assess the degree to which energy and protein requirements of cattle (either beef or dairy) were being met under various dietary and ambient temperature conditions. It was initiated as the joint effort of a group of our faculty at Cornell and has gone through many revisions, with input from scientists elsewhere. It is still a work in progress. In the meantime it has become widely recognized in the United States as well as some other countries as a useful means of assessing deficiencies or excesses of nutrients and has been used as the basis of the latest edition of NRC nutrient recommendations for beef cattle.

Reproductive physiologists meanwhile were purifying and characterizing caprine placental lactogen and developing defined media capable of culturing ova and embryos *in vitro*. Indeed, one of the real breakthroughs at this time was the discovery that a highly purified growth factor, PDGF, when added to an otherwise ineffective medium containing bovine serum albumin, allowed the successful passage of the embryo through the 8-cell stage. Previously no one had characterized the reason for 8-cell “block.” This was part of Currie’s exploratory work on fundamental growth factors affecting the cell cycle and thus early embryonic development, which had potential implications ranging from an understanding of early embryonic death to cloning methods. This was also a time when the cloning of rabbit and bovine embryos was being tried and perfected by micromanipulation of ova, with enucleation and subsequent insertion of totipotent cleavage cells isolated from 4 to 32 cell embryos. Other studies developed and examined procedures for *in vitro* fertilization and for low-temperature storage of gametes and embryos and for separation of X- and Y-bearing spermatozoa; examined control of myometrial protein synthesis as it relates to the initiation of labor; elucidated the chemical makeup, biochemistry, and dynamics of sperm membranes under various conditions; and probed the relationship of energy balance and protein nutrition to postpartum reproductive performance, and many other interesting aspects of the biology of reproduction in farm animals. Other areas of physiology under study at that time included oxytocin and vasopressin binding sites in bovine mammary tissue and the effects of stray voltage on milk production, the latter a question still plaguing utilities as dairymen affected by this problem bring lawsuits against their power companies.

The animal breeding group (specifically Pollak and Quaas) forged an agreement with the American Simmental Association in which Cornell would set up a system to process performance data, the results of which would be provided to them. This growing database was then used to generate parameter estimates for growth and carcass traits in beef cattle and for other beef breeding research purposes, much in the way the DHIC database was being used in dairy breeding research. Thus Cornell soon became a recognized center of genetic research in beef cattle. Quaas continued his work on methods, publishing on such esoteric subjects as multiple



A researcher operates a micromanipulator used in embryo cloning and related research involving transfer of DNA among cells.

trait prediction for a model with heterogeneous genetic and residual covariance structures, and transformed mixed-model equations: a recursive algorithm to eliminate A^{-1} . Everett developed a “test day” model for use in dairy sire selection, the latest in a long series of increasingly sophisticated procedures for adjusting records to reduce environmental effects and thus better reflect genetic differences. This model was also to become the standard for use in evaluating the real effect on milk production of changing a management practice, such as the introduction of bST technology. In the meantime, Blake focused on the performance and profitability of various breeds and strains in Latin American settings.

Examples of other research during those years included the effects of prepartum milking on production and health, effects of daily injections of exogenous oxytocin on milk yield and composition, the development of protocols for evaluating the efficiency of postmilking teat dips, and the responses of cows in commercial herds to bST.

In the late 1980s and early 1990s the department benefited considerably from an unusual donation of corn by the Commodity Credit Corporation (CCC) of USDA for research purposes. Having learned that a university in the Midwest had obtained such a grant, with the help of Norm Scott (director of research in CALS) we were able to establish contact in Washington, D. C. The result was a request from Animal Science, based on research projects being conducted by Fox, Bauman, Boyd, Hogue, and others, which was eventually to bring us more than 180,000 bushels of corn over a three-year period. This was allocated to the dairy, beef, sheep, and swine units on the basis of their relevant research needs and in lieu of dollars for feed, thus saving scarce feed research dollars for other purposes. It represented a great boon to the department at a time when budgets were tight but was apparently a rare type of agreement at the CCC. At the end of the time period all such agreements were ended.

In cooperation with our colleagues in the Veterinary College we helped plan and host several conferences, including two international ones: Comparative Aspects of the Physiology of Digestion in Ruminants (a satellite meeting of the Thirtieth International Congress of the International Union of Physiologists) in 1986, and the Seventh International Conference on Production Diseases in 1989. Bill Hansel and Bob Foote were largely responsible for organizing and hosting the Second Symposium of Genetic Engineering of Animals, which was held at Cornell in June 1989.

Teaching

On my second day as chairman, Dave Galton and I met with George Conneman, director of instruction in CALS, to seek financial support for a new initiative that Dave was proposing: a Dairy Fellows program in which selected students with interests in production agriculture would be exposed to intensive special practical management and leadership training. It has since become a prominent and highly successful feature of our undergraduate program and one that has attracted students from many states. We came away with modest support to supplement department dollars for the first year and the suggestion that for future years industry be canvassed for contributions. This suggestion was followed and the industry has been exceptionally supportive of the growing program ever since. The incorporation of the Fellows program into the curriculum resulted in some reshuffling and

modifications of several dairy management courses. Extension as well as resident teaching and research faculty became involved in the teaching program, which I perceived as a very positive change. Any resultant dilution of extension resources was more than made up by the contributions of the resident staff to extension programs.

Because I was faced with the need to divest myself of some of my former duties, including the teaching of Animal Science 100 (which I had taught for some 21 years), during my first year as chairman it was handled by a small group of faculty under Dale Bauman's leadership. I was delighted when Bruce Currie subsequently volunteered to take on the course. He developed a rigorous course in domestic animal biology, wrote a textbook, and extended the course to cover two semesters. My feeling is that this became the most rigorous beginning course in animal science in the country and it is highly rated by the students. Bruce, until recently with the assistance of Mike Thonney for the practical laboratory (Ezra's Farm), is still handling the course in the fall term, while Ron Butler covers the second semester.

With Dick Warner's retirement, responsibility for the beginning nutrition course was assumed by Alan Bell, who brought to it a similar dedication and a new and appealing format. It was now offered as a sophomore-level course.

Of all the faculties in the College of Agriculture and Life Sciences perhaps none devoted more time and attention to courses and advising of undergraduate students than the faculty in our department. This had been true historically and it has continued to this day. One could sense the rapport that this attention engendered. It was, therefore, in the natural order of events that we convened a mini-retreat focused on our undergraduate curriculum with the aim of critically looking for ways in which it could be improved. One of the items addressed was the need for revisions in upperclass offerings to avoid too much overlap now that the nature of several of the beginning classes had been changed. As a consequence several changes were made. For example, the lower-level reproductive physiology course, by then taught by John Parks, became a junior-level course that no longer had to cover aspects of physiology now being taught in the freshman course. Several production management courses were also altered to acknowledge the material already being presented in the lower-level nutrition and animal biology courses. Other changes during my term included the addition of an undergraduate course (AS 392) in animal growth biology (Beermann), a graduate-level course (AS 630) in nutritional physiology and metabolism (Bauman and Bell), an undergraduate course (AS 305) in farm animal behavior (Elizabeth Oltenacu and Kathy Houpt), an applied nutrition course (AS 312) offered by Boyd and Fox, and a 1-credit module (AS 214) on the nutrition of exotic animals (Hintz).

The department has for many years been blessed with a continuing stream of outstanding freshman matriculants. Although at one point during my tenure as chairman we were concerned about a downward trend in numbers, experience since then suggests that it



An undergraduate student avails herself of an opportunity in the Student Livestock Show for hands-on experience with animals.

was temporary, and probably largely due to changes in admissions philosophy in the Veterinary College, admission to which remains the chief goal of many of our beginning undergraduates. We long have and still do also admit transfer students, some of whom have a hard time competing with those admitted as freshmen, and many of whom have some difficulty in scheduling important advanced electives while still making up lower-level requirements. Attempts were made with some of the major sources of these transfers to coordinate curricula in order to alleviate such problems, but this has been largely ineffective. Most students at an agriculture and technical college who are interested in animal science are unlikely to want to spend their first two years studying English, mathematics, and psychology. In many of our classes we have, therefore, had to face the challenge of training students of diverse ability and background, ranging from the barely competitive to the Rhodes Scholar (Wesley Sand) and the dairy cattle judging team member with GRE scores of 800/800 (known fondly as “Egghead”) to whom we could proudly point around 1990.

Extension

Three department extension leaders served for various periods during my term of office: R. David Smith, Robert Everett, and David Galton. As the department sought ways to compensate for the gradual erosion of extension positions at both department and county levels, greater use was made of other multiplier groups in extending information to producers. Functions such as the annual Cornell Nutrition Conference for Feed Manufacturers continued to be important and popular methods of keeping the people we served informed of cutting-edge research. We had long depended on the AI and feed industries to help in this regard, but now special workshops and schools were also designed for veterinarians, consultants, and other agribusiness personnel who interacted with producers. Staffing in the field was moving in the direction of more regional specialists rather than county generalists. The Pro-Dairy Program, a multidepartment effort (Animal Science and Agricultural Economics were most heavily involved and the program office was in Morrison Hall) funded through the N.Y. Department of Agriculture and Markets, was introduced with initial emphasis on training dairymen to be better business and people managers. As weak links in their enterprises were identified they could then go on to enroll in specialized courses in milking management, nutrition, field crops, and so forth.

A special educational program to prepare dairy farmers for the introduction of bST was prepared and widely used in the state long before a commercial product was approved. The department was sometimes criticized for doing this, as some interpreted our program to be a promotional one. As it turned out, however, New York farmers were much better informed about the subject and, when the product did finally become available to them, the evidence indicates that they adopted this new technology more quickly than farmers in other states.

During this time the old Dairy Days program was dropped in favor of both regional winter dairy management schools featuring the latest research and specialized conferences held elsewhere. Examples were conferences on large herd management, raising heifers, and bST. We also began cooperating where possible with personnel from surrounding states in sponsoring conferences in order to make more efficient use of expertise in the region. Other changes included the

development of an expert videotape, titled *Proper Milking Procedures*, which was widely sought and distributed, both in and out of state. A technological advance made the DHI records in the Dairy Records Processing Laboratory available electronically to individual dairymen, who could now download their herd records and produce summaries, lists, and reminders of their own design.

For a number of years the previously close association of our animal breeding group with Eastern Artificial Insemination Cooperative (which had originated through department nurture) had been deteriorating as management and objectives changed and the advice of our faculty was less often sought or welcomed. The failure of Eastern to satisfy the needs of some of the most progressive dairy farmers in the region was soon to lead to some changes in Cornell's genetics extension program. In the meantime, the physiology group, including in particular Bob Foote and John Parks, continued to work quite closely with the cooperative.

Largely at the request of a scientist (Dr. Kazuo Ataku) who spent two years with us, we signed a departmental agreement with a small and progressive dairy and veterinary university (Rakuno Gakuen) in Hokkaido, Japan, which encouraged cooperation and sharing of information between our departments. This would subsequently lead to additional exchanges of scientists and other short term visitors. Dr. Ataku, who at the time was a member of the faculty in dairy science, has since become the president of Rakuno Gakuen.

In the meat animal area, reference has already been made to the demonstration "STAR" program in sheep, which was a special focus of sheep extension during those years. Brian Magee, manager of the sheep unit at the T&R Center, was assigned some time for extension activities and, in addition to a number of speaking engagements at sheep events, introduced a series of popular weekend sheep "clinics" designed to deal with seasonal management practices. The Annual Beef Cattle Short Course, which had a long history, was replaced by other meeting formats, including for example, symposia on Holstein beef production and cow-calf management and clinics on such subjects as health or summer management. Successful swine production schools were introduced as a feature of the swine extension program, which was boosted substantially by the arrival in the Diagnostic Lab at NYSVM of a swine veterinarian with an extension appointment. The absence of such expertise had been a constant complaint of producers. Dr. Barbara Straw's appointment in the Veterinary College (with a joint appointment in Animal Science) almost instantaneously took care of that and gave us an excellent opportunity for a cooperative extension effort.

New Business Manager Appointed

When I began my term, the department business office was headed by Ruth Teeter, who had served in this capacity under three previous chairmen/heads and who had worked as secretary to Professor Turk before that. Ruth was an excellent and truly dedicated keeper of the department's financial resources. She was especially vigilant and had a keen memory of the history of the many funds and accounts with which she worked. She also made it a point to keep the chairman aware of significant transactions and policy changes and sought his input and approval on anything that was not routine. Ruth delegated authority sparingly and only when there was essentially no alternative. At that time the department accounts were kept on the in-house central computer in DRPL, using a homemade program,

which allowed summaries (in a fixed format) to be made for distribution when desired. One of the difficulties was that these detailed electronic accounts were not in any way electronically integrated with the accounts in the college business office. We were in effect entering all data twice, once to the college and once to our own more detailed system of individual accounts. This was not the fault of anyone in particular, it was simply a reflection of changing times. Indeed, most departments in CALS still did not even have their accounts in electronic format, and the college had made no concerted effort at that point to encourage them to make this move. The personal computer revolution was just beginning, and I was anxious to get our personnel trained in computer use and eventually to get our system modernized and integrated with central CALS records to a point where accounts could hopefully be kept current and individual research and other account balances be made available to professors on demand. For a time it was a frustrating and difficult journey. Ruth, nearing her retirement, had a natural reluctance to accept changes, in part because she did not fully understand the technology and was not in a position to lead or oversee such a drastic conversion in methods. Nor was the college in a position to offer a solution. Meanwhile the faculty disdained the old system, which was cumbersome and never produced fully up-to-date reports; moreover, some of the newly hired assistants in the business office were yearning to become computer literate. A sudden decision by Ruth Teeter to retire in 1987, therefore, had a somewhat fortuitous effect on the timing and direction of the transformation of our business office. To my knowledge Ruth had not planned on retiring at that time, but recurring health problems and job pressures had taken their toll. She had more than earned her right to a more leisurely lifestyle.

The successful applicant for the position was Timm Lathwell, who had a degree in business, extensive experience in the statutory college system, computer training and experience, and a good reputation in the college. Timm was in a position to be a leader as, in tandem with changes in CALS and university business systems, the department's accounting and communication methods were adapted to the personal computer, redesigned to meet our specific needs, and kept compatible with ever-changing extra-departmental systems and requirements. This was not accomplished overnight. It is a process that continues today. I find it interesting that the university, now several expensive years into its Project 2000 (aimed at computerizing business, student, and personnel records in a standardized system), recently announced that the project is so complicated that it is far behind schedule and may in fact have to modify or abandon some of its original goals.

New Plant Operations Chief Chosen

In 1988 Barth Mapes announced his retirement. Barth had begun his career in the department nearly 35 years before, as an assistant to the department head, Professor Turk. Although his responsibilities had changed somewhat over the years, he had faithfully continued to work for four additional heads/chairmen. With this long-term experience he had become very knowledgeable about department procedures and history and was looked to by faculty, students, and employees for all sorts of information and problem solving. During his last several years much of his time was spent coordinating and overseeing the day to day operation of the T&R Center and other animal research units. This was a key position in the department, involving a large field crops operation, dairy, beef, sheep, and swine units; several

other experimental units; many personnel; an annual budget between \$1 and \$2 million; and many problems and challenges. With Barth's retirement, therefore, we were faced with the problem of finding someone with the knowledge and experience to move successfully into this position, command the respect of the personnel, and introduce the changes necessary to cope with reduced resources.

We advertised the position, but initial responses to the search were less than hoped for. Informal discussion of the problem with a couple of faculty members one day led to the suggestion that maybe we could interest an experienced dairy farmer in the position. That evening I called Ronald Space, a very successful local dairyman, who was a Cornell graduate, had a history of civic activity, including chairmanship of the board of trustees of the local community college, and was known to us as an enthusiastic leader. I bluntly asked him if he had ever thought that it might be time to let his son and partner take over full responsibility for their farm, while he sought a new challenge. This caught him totally by surprise, but typically, he told me he would think about it and let me know within a week whether he would consider it. The rest is history. Ron soon joined us and for the most part quickly adjusted to the ways of academe, although he probably never agreed with the long-drawn-out procedures required for reprimanding or dismissing an employee. Within a short time he had negotiated a better price for our milk, tackled a lot of difficult labor problems, and increased the efficiency with which things got done. By the end of my term as chairman the rolling annual average production per cow for the dairy herd had increased from about 16,000 to about 20,000 pounds.

Continuing Budget Problems

State budget cutbacks or freezes continued to be almost annual events during this period and beyond. In the 20 years ending in 1991, SUNY faculty and staff positions in CALS had been reduced by more than 20 percent. As a department we had suffered at least our fair share of these, with the inevitable disruptions and short-term inequities that result from such cuts. While relinquishing technicians, secretaries, animal care workers, maintenance workers, and eventually faculty (usually by eliminating vacancies) from our core budget, we tried to protect the more than 20 state-supported graduate assistantships in our budget. These represented direct support of the research programs of individual faculty members and were seen as crucial, especially by new young faculty and by others with limited grant support. Interestingly, in spite of significant cutbacks, by and large salary programs during the 1980s were quite liberal and this, along with increased income from nonstate sources, kept the total department budget (which was in the \$8 to \$10 million range) fairly steady. It should not be implied, however, that this put us where we would have been without the cuts. Admittedly, there had been some slack in our secretarial and labor ranks that was simply absorbed in a more efficient, leaner and meaner aftermath. However, we still had fewer faculty attempting to do more with less technical and other support at their beck and call.

Endowments Established

Through the generosity of alumni, friends, and in some cases organizations, several endowments honoring individuals and in support of the following department activities or graduate student awards were established:

Sydney A. Asdell Lectureship

C. R. Henderson Lectureship

Robert Everingham, Jr. Award

Leonard A. Maynard Memorial Award

Harry R. Ainslie DHI Leadership Award

In addition, with Ken Turk's help, we were able to solicit additional funds to add to the endowment of the Morrison Fellowship Fund, originally endowed by F. B. Morrison.

Poultry and Avian Sciences Department Disbanded

In 1990 Dean Call made a decision to eliminate the Department of Poultry and Avian Sciences. This was a rather severe blow to the faculty and staff. Their department was the first poultry department in the country, with its beginnings in 1907, and it had a proud and illustrious history of contributions to poultry nutrition, genetics, and physiology. The faculty, with some support staff, were dispersed by mutual agreement in several directions. Two nutritionists chose to move to the Division of Nutritional Sciences. Three with interests in immunology/genetics opted to join departments in the Veterinary College. Two nutritionists, a physiologist, and a member with management interests joined Animal Science.

We welcomed these new colleagues, most of whom were already well known through our previous interactions in teaching and research, and integrated them into offices and laboratories in Morrison Hall in 1991. Richard (Dick) Austic was widely known for his work on amino acid requirements and interactions and had been honored by the American Poultry Science Association with its Poultry Science Research Award. He had been the chairman of the former department and brought to Animal Science broad expertise in the nutrition and management of monogastric species. A meticulous and productive researcher as well as a fine teacher, Dick's presence in Morrison nicely complemented some of our own strengths. Kavous Keshavarz, the other nutritionist, continued his applied research program, dealing largely with practical field nutrition problems, and almost single-handedly coped with poultry extension. Kavous is a tireless and enthusiastic worker whose critical thinking and sense of humor made him a popular addition to the group. Patricia (Pat) Johnson, a young assistant professor of reproductive physiology, brought familiarity with molecular biology methods as well as an avian dimension to our physiology group. Pat had been teaching the endocrinology course (AS 427) as part of our joint department teaching program before joining the department and has continued to do so. Her research program was focused on



Richard Austic



Kavous Keshavarz

the characterization and regulation of inhibin in the hen. Paul Aho, another young assistant professor, with responsibilities in management research and extension, added expertise in practical business management. Paul, however, at tenure time a few years later, left Cornell to accept a position in industry.

It is noteworthy that one of the emeritus faculty members from the Poultry and Avian Sciences Department, Ari Van Tienhoven, chose to join us as well. He was provided with an office and was soon to contribute significantly to the teaching program.



Patricia Johnson

Elliot Retires

People differ in their views of how long a person should hold a department chairmanship, and no doubt different factors should be considered in any given situation. My opinion from the beginning was that after 7 to 8 or at most 10 years a chairperson has had a chance to put his or her stamp on the department and that he or she should then move on. At the time of my review and reappointment after five years, Dean Call had asked me to consider another five-year term. Although I was thoroughly enjoying myself, I countered with the suggestion that it be a two- or three-year term. He in turn suggested three or four years. I responded that I didn't care as long as he understood that I might step out at any time after two or three. He thereupon reappointed me for five! I briefly considered taking a sabbatical leave when I would have been entitled to do so the following year, but for a number of reasons made a pact with myself that I would skip the sabbatic but retire at age 64 rather than the more traditional 65. That time was approaching (fall/winter 1991) rapidly when, in summer 1991, an attractive incentive retirement program, requiring almost immediate retirement, was announced by the state. I took it, effective at the end of August 1991, but not before giving up my own position (state line) in partial fulfillment of our budget cut for that year. I had been chairman for over eight years. I left the post with pride and with a feeling that the department was entering a more exciting time, in terms of research tools and potential breakthroughs, than I had seen at any other stage of my career. My greatest regret was that, because of CALS budget problems, I had (even with the strong support and help of players like Bauman and Currie) been unable to build the strength in molecular biology that we would soon need to capitalize fully on this opportunity.

Upon learning of my decision to retire, Dean Call quickly put in place plans for chats with each member of the faculty, and the process of identifying my successor was under way. At least two possibilities surfaced and the new chairman had been named by the time I moved out of the office.

Although I was officially retired, the dean asked me to stay on for three to four years, on a part-time basis, to undertake some tasks for the department. I agreed and am still at it even though long off the payroll.

Chapter 5 (1991–1997)

Harold F. Hintz Appointed Chairman

Harold (Skip) Hintz assumed the chairmanship on September 1, 1991. Skip had been a member of the Animal Science faculty since 1967. A lot of his time had been spent in the Veterinary College, however, because of his activities in the equine research program. He and his collaborators had their laboratories there, and Skip held a joint appointment in that college. As a result, some of the younger faculty in Animal Science did not feel that they knew him very well when he became chairman. From his perspective, this change in responsibilities was perhaps well timed, because the recent retirement of one of his collaborators and some subsequent shifts in emphasis and resources in the Veterinary College had in effect broken up the small group that had been investigating the nutrition and pathology of equine bone disorders since Skip had joined the faculty at Cornell. He was, therefore, facing a period of planning and readjustment, independent of any thoughts of administrative work.



Harold Hintz

Skip had a reputation as a popular and effective teacher and adviser. He would later receive the Edgerton Career Teaching Award, the Professor of Merit Award, and the CALS Distinguished Advisor Award. He also had an extensive record of publications, in both scien-



Some of the faculty in Animal Science early in the Hintz administration. First row (L–R): J. E. Parks, W. B. Currie, R. H. Foote, R. D. Boyd, H. F. Hintz, E. J. Pollak. Second row: K. Keshavarz, M. L. Thonney, R. L. Quaas, R. C. Gorewit, P. A. Johnson, A. W. Bell, W. R. Butler. Back row: W. G. Merrill, J. M. Elliot, L. E. Chase, D. E. Hogue. Not present: P. W. Aho, R. E. Austic, D. E. Bauman, D. H. Beermann, R. W. Blake, R. W. Everett, D. G. Fox, D. M. Galton, L. R. Jones, E. A. Oltenacu, P. A. Oltenacu, A. N. Pell, P. J. Van Soest, M. J. Wylie

tific and popular journals, on the nutrition and practical feeding and management of the horse. His work had affected the NRC standards for horses, and he had served on and later would chair the NRC committee on animal nutrition. He was respected and had received recognition by his peers in equine work and was in demand as a speaker at equine events around the globe. Skip also had an interest in nutrition of pets and exotic (zoo) species. His even temper, good humor, integrity, and sense of fairness were seen as favorable traits. Even if they did not know him well, everyone liked Skip as a person, so he began his term of office with the strong support and goodwill of the faculty.



Exercise physiology being conducted by a student in Skip Hintz's group, using a draft horse on the large treadmill in the New York State College of Veterinary Medicine

His administrative style suggested that Skip was one who favored a “laissez-faire” policy: let each do his or her thing; if it ain't broke, don't attempt to fix it. He was seldom confrontational and seemed averse to upsetting situations. By his own admission, Skip often found some of the personnel problems and administrative chores that he inevitably had to face as chairman to be burdensome and unappealing. He has indicated that he enjoyed many aspects of his department leadership responsibilities. There is little doubt that he did. A number of the faculty, however, felt that his heart was really more in his work with students and extension audiences. During his term as chairman, Skip continued his normal busy professional travel schedule, speaking largely on equine topics in various parts of the world. Some criticized him for this because they felt that too often it took his attention away from department matters and thus weakened his effectiveness as the key advocate for Animal Science. Be that as it may, important decisions were made under his leadership. He appeared to have the confidence and strong support of the deans and, in retrospect, many of the changes effected during his term have had undeniably favorable long-term effects on the department. Well before his fifth year as chairman was over, however, he had signalled his intention not to seek another term.

New Faculty Appointments

Certainly one of Skip's greatest accomplishments was the faculty he hired, especially the animal molecular biologists. In about the middle of his term a window of opportunity to hire several new faculty members opened. This was a consequence of retirements and other departures, a temporarily brighter budget picture, the college's need for a position for the spouse of a prospective candidate in another department, and the ultimate capitulation of the dean to the department's 10-year campaign to acquire faculty with training and experience in molecular biology.

The first to be hired was Dan Brown, filling the youth extension position vacated by M. J. Wylie. Dan, a native of California, had done his graduate work in this department and subsequently taken a position and gained tenure at the University of California at Davis. A bright young man and excellent teacher and researcher, he was married to Kathryn Boor, who completed her Ph.D. degree at U.C. Davis and was recruited by the Food Science Department at Cornell. The situation was viewed as an opportunity for us to fill the youth position with a leader who would bring a strong science flavor to the extension program. Dan was interested and joined our faculty in 1994 with an extension/research appointment. His research interests were in nutritional toxicology, which added a new dimension to the department's expertise in nutrition.

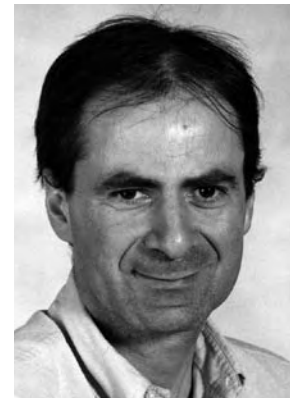


Dan Brown

The searches to fill two positions in animal molecular biology resulted in the hiring of Susan Quirk, a reproductive physiologist, and Yves Boisclair, a nutritionist from Canada. Both had earned their Ph.D. degrees at Cornell and both had postdoctoral training in molecular biology. Susan joined us from a position as research scientist at the New York State Department of Health in Albany, Yves from a postdoctoral associate position in molecular endocrinology at the NIH in Bethesda. Soon after their arrival they jointly developed a graduate-level course (AS 650) in cutting-edge molecular techniques applicable to research in animal biology, thus filling a gap in our graduate training program from which we had suffered for some years. Since then Susan has taken full responsibility for an undergraduate course in molecular biology in agriculture and medicine (AS 280), designed to introduce students to the applications in research, animal agriculture, industry, and medicine; to recombinant DNA techniques; and to mammalian cloning, transgenic animal production, gene therapy, and genetic screening. Her initial research efforts focused on ovarian follicle development and atresia, with particular emphasis on apoptosis as a mechanism of ovarian follicular atresia. Yves in turn soon took full responsibility for developing and teaching an undergraduate course (AS 341) in the biology of lactation, also filling a critical gap in our undergraduate program. His initial research program has dealt with the endocrine regulation of metabolism, growth, and lactation, with emphasis on the IGF and leptin systems. In 2000 he was the recipient of the Northeast ADSA/ASAS Young Scientist Award.



Susan Quirk



Yves Boisclair

Thus, in one lucky year, following a long wait, two legs of what the department had planned to be at least a three-legged animal molecular biology initiative were in place. Both Yves and Susan were quickly successful in securing external funding for their research projects. There remained the hope that a third position, this one with a genetics flavor, would eventually be added.

Dean Boyd's departure in 1994 led to a search for a nonruminant nutritionist. The position was filled late that year by Xingen Lei, a young man with Chinese roots, who had earned his Ph.D. in animal nutrition at Michigan State and had postdoctoral experience in molecular biology at the University of Missouri.

Xingen's interests in mineral nutrition and his experience with swine nicely complemented our existing expertise, and his training in molecular biology was seen as a strong plus in terms of research promise. An aggressive and relentless worker, he rapidly secured external funding and launched a program focused on selenium nutrition and biology and on phytase gene expression and phosphorus nutrition, using pigs and transgenic mice as experimental subjects. In 1999 the Northeast Branch of ADSA/ASAS selected him for its Young Scientist Award. Xingen's teaching responsibilities included a course in swine nutrition and management (AS 370) and part (with G. F. Combs, Jr.) of a graduate course in mineral nutrition: metabolic, health, and environmental aspects (AS/NS 603).



Xingen Lei

The last faculty appointment during the Hintz administration was made in the dairy management area. The upcoming retirements of Bill Merrill and Pete Van Soest, together with the earlier retirement of Dick Warner and losses of Charlie Sniffen and Jim Ferguson, left the department seriously short of a critical mass in applied dairy cattle nutrition. A decision was, therefore, made to seek someone with a strong dairy management interest focused on nutrition. The successful candidate was Michael Van Amburgh, a congenial and exceptionally hard-working young man, who was just completing his Ph.D. in the department at that time. Mike had an interest in calf and dairy replacement heifer growth, focused on understanding nutrient supply and post-absorptive nutrient use. A graduate of the Ohio State University, he had worked for four years as a highly successful district sales manager for an artificial insemination organization, and had served as an adjunct professor at the College of Agriculture and Technology at Cobleskill, N.Y., for a year before beginning his graduate studies at Cornell. His appointment, in 1995, was in research (50 percent) and teaching (50 percent). He assumed responsibility for an undergraduate course in applied cattle nutrition as well as graduate-level instruction in forage analysis. Mike's initial research program, an aggressive and well-funded one, continued to be centered on his interest in growth and development of the replacement heifer.



Michael Van Amburgh

One other change occurring during the Hintz years was the return of Elizabeth Oltenacu to an active role in the department, after an extended period in an essentially full-time position in the CALS administration.

Retirements and Other Departures

In 1992 and 1993 two untenured faculty, Paul Aho and Mary Jean Wylie, each on a terminal appointment, left Cornell to seek other positions. Between 1993 and 1995, four full professors, each of whom had made significant and long-term contributions to the department, retired.

The first of these was Robert Foote, who achieved mandatory retirement age in 1993, after 43 years of loyal and exemplary service in research and teaching. Bob, whose long hours, competitive drive, and success in obtaining outside grants were legendary, had compiled an outstanding record of research accomplishments in reproductive physiology. A record of his scientific journey over a 50-year period is

to be found in his recent book *Artificial Insemination to Cloning*. His contributions to teaching at both undergraduate and graduate levels were likewise strong, and he was the recipient of many prestigious awards for excellence in both research (ADSA Physiology and NAAB Awards: ASAS Casida, Animal Physiology and Endocrinology Awards; American Society of Andrology Outstanding Andrologist Award; SSR Carl Hartman Award) and teaching (Professor of Merit, Edgerton Career Teaching Award, and SUNY Chancellor's Award for Excellence in Teaching).

Upon retirement, Bob continued, at his usual pace, to complete work on several research grants and to travel, consult and write. He and his wife, Barbara, are currently living at Kendal, a retirement community in Ithaca.

William Merrill retired and moved to Tucson, Arizona, in 1994, after some 35 years on the faculty here. Bill is perhaps best remembered by many of us for his early work on Project M, a unique and extensive effort to improve milking techniques and mastitis control in New York herds; and for his later work in “importing” UK research and technology to test the effects of dry cow treatment and udder hygiene on mastitis incidence. His tendency toward meticulous review of available evidence on any extension question made him a very valuable member of the dairy extension team, although it occasionally rankled some of his more impatient colleagues. Bill had also contributed significantly to the applied research program in dairy management and nutrition, and between 1968 and 1974 had served part-time, first as an assistant director of research and later as an associate director of cooperative extension in CALS.

In 1995, Peter Van Soest, the quintessential brilliant, absent-minded professor, officially retired but has continued to spend some time in the department each year. Pete's many important contributions, especially in forage chemistry, and some of his endearing personal characteristics and quirks have been described earlier in this volume. He continues to be in demand as an international speaker and consultant, usually spending part of his year overseas. He has built a new home a few miles from Ithaca.

That same year, Douglas Hogue retired after some 38 years as a faculty member. To a considerable extent during that time (especially after the retirement of Warren Brannon) Doug was solely responsible for Cornell's efforts on behalf of the sheep industry in New York and elsewhere. In his characteristically analytical way he had identified the areas needing attention and then focused his research on innovative ways of addressing nutrition and management bottlenecks that were limiting production efficiency. Few of us in the department at the time will ever forget his “big buck” seminar or his practical demonstration of the potential of the ingenious “STAR” system to produce three lambs per ewe per year. He was clearly a national leader in devising production management schemes that could solve industry problems, but in many respects Doug was ahead of his time in an industry that was dying from its inability to adapt to changing times. Gifted in mathematical skills, Doug contributed a great deal in common sense to department discussions and was known on occasion to astonish new graduate students with his spur-of-the-moment mental calculations of solutions to problems they were struggling with on their computers. For many years he was asked by students to give one of his interpretive and practical seminars on statistics and design of experiments. For three years after retirement he continued to teach the sheep course, and he is still spending time in Morrison Hall.

Larry Jones moved on in 1996 to a consulting practice in Homer, N.Y.

Facilities

Among the improvements in facilities during the Hintz years was a major in-house project to enlarge the heifer barn. The maintenance crew at the T&R Center designed and built an excellent free-stall facility, some three to four times larger than the old unit, which was incorporated into the new design as planned when it was originally built in the mid-1980s. This move, which made it possible to vacate obsolete facilities, together with some remodeling and improvements in ventilation and other aspects of the other dairy units, helped to bring the dairy facilities into conformity with AAALAC requirements, a nagging problem with which the department had been faced for some time.

These same years saw an expansion of the student computer facilities in Morrison Hall, as more and more of the faculty began incorporating a need for them in their courses. Other projects included several classroom, office, and laboratory renovations and development of a well-equipped laboratory for teaching molecular methods in one of the fourth-floor rooms previously used to house rabbits. Renovating and appropriately equipping research laboratories had for many years been an important part of the package negotiated with the administration on behalf of new faculty being recruited. Equipment allowances of \$40,000 to \$80,000 were common in support of our appointees in the 1980s, but it was not unusual, in meeting the needs for a molecular biology laboratory in the college, to budget \$100,000 to \$200,000 or more for this purpose.

Dairy Records Processing Laboratory (DRPL) Closed

One of the responsibilities shared by most chairpersons was that of periodically negotiating a memorandum of understanding with the New York Dairy Herd Improvement Cooperative (NYDHIC) covering the arrangement whereby DRPL processed and stored the dairy records collected from farms served by NYDHIC. This arrangement, which had evolved as the department nursed the cooperative into existence, was generally considered to be a mutually beneficial one. The cooperative, in addition to the necessary computer services, gained the expertise and latest technology of the animal breeding group, which was constantly seeking better and faster methods of providing useful breeding and management data to farmers. The department in turn gained control of a large dairy database on which to do its research. The arrangement made it financially possible to maintain a large and up-to-the-minute mainframe computer in the department, a substantial benefit to the researchers. It certainly facilitated the link between Cornell researchers and Eastern Artificial Insemination Cooperative, where Cornell methods of sire selection were applied and sire ratings were regularly published.

As time went on, however, NYDHIC became more independent of its roots in the department. During the Young and Elliot administrations, there were signs that NYDHIC wanted greater control over computing operations than it had under what was essentially a contract with the department to provide record processing. Indeed, there was talk of the possibility that it might set up its own computing center, totally independent of Cornell, a move that many of us considered tantamount to a death wish on NYDHIC's part. NYDHIC was in no position to deal with the intricacies of the science and technology involved. At that time we had been successful in negotiating memoranda that made some concessions in the ownership of DRPL records and equipment as well as decision making. In the face of

some personality conflicts among key people associated with NYDHIC and DRPL, however, the issue was soon raised once more.

In the end, a decision was made to dissolve this long-standing relationship in 1995, a move that essentially eliminated DRPL and, after a series of fumbling moves by NYDHIC to get records processed elsewhere, ultimately led to the takeover of NYDHIC by a large milk-marketing cooperative, DairyLea. The loss of DRPL, including the mainframe computer and most of the staff, resulted in some major changes for the animal breeding group in the department. By this time, however, most research needs were no longer dependent on mainframes, and powerful supercomputer facilities on campus were available when needed to supplement very high performance microcomputer systems. Hence no permanent damage to programs resulted.

New Dean Appointed

David Call, popular dean of the College of Agriculture and Life Sciences, announced that, having served in that position for 17 years, he would not seek an additional term. Thus, in 1995, after a national search, Daryl Lund, a food scientist with administrative experience at Rutgers, was appointed. Interestingly, that same year Frank Rhodes, with a similar time in office, stepped down as president of the university and Robert Phemister stepped down as dean of the College of Veterinary Medicine. Lund's appointment marked not only a major change in the decision-making authority (most decisions were to be delegated to associate deans) but changes in many policies, with a distinct move toward centralization of control of positions and of many decisions that had been primarily department prerogatives. Some of these changes were not well received by departments. What seemed to faculty like endless internal studies of departments and priorities, which were mandated by the dean, consumed much faculty time and in the end did not seem to have much impact on CALS operations, further eroded support. As will be seen in the next chapter, his tenure was to be short-lived.

Teaching Program

Early in the Hintz years, with numbers of undergraduate animal science advisees at around 450, their interests increasingly broad, and (although somewhat depleted in numbers) a faculty still strongly committed to an outstanding curriculum and teaching program, another review was undertaken by the department.

Traditionally, the undergraduate curriculum in this department had been a very flexible one, aimed at satisfying the needs of a diverse group of students. Apart from the college's distribution requirements and any courses insisted upon by the adviser, a student and his or her adviser could tailor-make a program of courses to fit the individual student's interests and needs. External reviews of the department over the years had often revealed astonishment by colleagues from other universities that such a program, where each student of animal science might have a different curriculum, could be successful. Usually these examiners had become convinced by the time they left that in fact it was successful largely because of the quality of our students and the strong advising system. It is interesting to me that, as the years had gone by, many other departments across the country had begun to emulate our flexibility, at least to some degree, while we had begun to think that at least a little more structure in our program might be desirable.

Because many of our students had vocational interests that could be broadly categorized as veterinary medicine, research, agribusiness, or production agriculture, at one time our advisers and students were provided with example courses of study (still with great flexibility) for each of these categories. These had served only as guidelines. With increasing diversity of interests and goals, a student body now about two-thirds female, advisers with a wide variety of educational philosophies, and what appeared like an ever-increasing number of courses from which to select, the time was ripe for new and better guidelines. A “Focus on Teaching” workshop held in the department in 1992 served as the stimulus for the development of a series of eight “pathways of specialization” within animal science. Each pathway guide focuses initially on the departmental core curriculum that is common to all students. Students are then directed to sequential choices among courses in various subject matter areas, both within and outside the department, appropriate to their choice of pathway. Versions of the eight pathways (pre-veterinary, dairy cattle management, physiology, animal nutrition, genetics, growth and development, livestock/poultry management, international agriculture) current at the end of the century are provided in appendix 3. As can readily be seen, these guidelines account only for courses closely related to the major, leaving great opportunity to choose other courses in CALS as well as in other colleges, both to satisfy distribution requirements and as free electives. Thus the flexibility for which we are noted remains.

Among the more significant changes in animal science course offerings during this period was the addition of a new course in techniques in animal molecular biology, aimed primarily at the graduate level. One of the emeritus faculty members (Ari Van Tienhoven) undertook, with the help of Dick Warner and (later) a senior research associate (Debbie Cherney), to offer for the first time a course in ethics in animal science. Other new offerings included undergraduate-level courses in animal domestication, exotic avian husbandry, gamete physiology and fertilization, and (for a brief period) animal agriculture in society. Other courses were modified and the concept of exporting faculty expertise through distance learning was explored in a preliminary way. The Dairy Fellows program continued to grow and thrive under the able leadership of Dave Galton, now attracting increasing numbers of out-of-state students who were willing to pay the high tuition rates in order to participate. Galton was honored in 1995 for his “. . .sustained record of effective, inspiring and distinguished teaching of undergraduate students, and of contributions to undergraduate education,” when he was selected as one of Cornell’s Stephen H. Weiss Presidential Fellows.

Extension

Continuing public pressure for attention to environmental issues led CALS to focus some extension effort on “sustainable agriculture.” To some this term implied more focus on small farms, organic farming, and specialty niche farming. To oth-



Scene from Alan Bell's undergraduate class in animal nutrition

ers, more realistically, it implied the need for more responsible attention on the part of large modern producers to farming practices that are clearly not sustainable in the long term without undue harm to the environment. Danny Fox was asked to be the leader in a multidepartment sustainable agriculture extension/research effort. Danny and his colleagues thus began applying the Cornell Net Carbohydrate Protein model to a study of whole farm nutrient balance on dairy farms. The intention was to identify, measure and, through better nutrient management, hopefully reduce the accumulation of excess nitrogen, phosphorus, and other nutrients potentially harmful to the environment.

In a related area, a group of progressive dairy farmers (Northeast Dairy Producers Association), organized in 1993 through the efforts of Dave Galton and others, provided support for a person at Cornell to work in the Agricultural and Biological Engineering Department on waste management. This was stimulated by serious and costly waste management problems on several large dairy farms and by increasingly ominous and more stringent regulations by agencies such as the state Department of Environmental Conservation.

In the meantime, the Pro-Dairy program continued, with ongoing emphasis on improving management skills, but soon to be radically modified and directed by Dave Galton. Regional dairy management and other conferences and workshops, likewise continued. Several new extension associates took responsibility for programs. With the former Eastern Artificial Insemination Cooperative now amalgamated with two other out-of-state cooperatives and renamed Genex, the close and unique association it had once enjoyed with the department eroded even further and a group of dissatisfied progressive dairymen formed a cooperative called Advanced Dairy Genetics. Bob Everett's support and advice was sought in developing a progressive program of sire selection based on cutting-edge research, and this group became an important focus of a part of our extension effort in dairy genetics.

Sam Sabin's retirement and the continuing loss of faculty positions led to the creation of yet another nonfaculty extension position, this one to cover youth work in horses. Jean T. Griffiths, an enthusiastic Cornell alumna with extension experience, was hired to handle this assignment. She has continued to bring creativity and innovation to bear on programs in support of the development of youth through their interest in horses.

Research

Several new faculty brought with them new directions in research. Certainly, as has already been pointed out, the appointments in animal molecular biology represented a significant step in broadening the research continuum. It should be noted that by this time increasing numbers of other faculty, especially some of those hired in the previous 15 years, were also very comfortable using cellular and molecular biology techniques in their research. Thus, the balance of research with animals versus that at the level of organs, tissues, cells, and molecules was gradually shifting to a more fundamental level.



John Parks exhibits his interest and involvement in the Cornell Raptor Program.

The group of faculty who had moved to Animal Science from the now disbanded Poultry and Avian Sciences Department in 1991 brought with them complementary expertise in several research areas, notably nonruminant nutrition and reproductive physiology. Dick Austic, for example, pursued his interest in amino acid imbalances and their metabolic effects in chicks and rats. Kavous Keshavarz continued his pursuit of answers to practical poultry nutrition and management problems, focusing principally on dietary minerals, while Pat Johnson, an endocrinologist, engaged in studies of inhibin at molecular, tissue, and animal levels.

Early 1994 finally saw the market release by Monsanto of the first recombinant bovine growth hormone product (Posilac), amid continuing howls of protest from antitechnology groups and a few politicians. Bauman, who had by then become chairman of the National Research Council's Board on Agriculture, was still a prominent target of much contempt, mud-slinging, and innuendo as a result of his primary role in developing this technology. However, many of the progressive producers in the country, with New York dairymen in the forefront, were early adopters. It was clearly a well-researched, safe, and effective method of increasing milk production and production efficiency. Its use involved injections every two weeks. Although acceptance by the industry in general would not take place overnight, the economic advantage of field use in herds (both small and large) that were well managed was quickly demonstrated, to the benefit of those able and willing to use the product. It is of interest that, upon Posilac's release, the Smithsonian Institution's National Museum of American History acquired a syringe of the product to mark the significance of this development. The curator of Health Sciences reportedly indicated to Monsanto in 1995 that ". . . in terms of marketability, Posilac may, in fact, be the most successful agricultural product of all time."

It was exciting to me finally to witness the practical impact of more than 15 years of research and to contemplate the magnitude of this contribution to the dairy industries the world over. Meanwhile Dale and his colleagues were still leading the pack in elucidating the metabolic mechanisms and interactions through which somatotropin exerts its homeorhetic effects and demonstrating how enormous the potential for protein accretion really is when the appropriate metabolites are provided to the tissue. Using the hyperinsulinemic-euglycemic clamp technique, he also began exploring the role of insulin in the regulation of protein and fat synthesis in the mammary gland. Other new research centered on the effect of diet on the conjugated linoleic acid (CLA) content of milk, and work on the possible role of trans fatty acids in the etiology of the milk fat depression syndrome was initiated.

Alan Bell, whose research program was focused on nutritional physiology of pregnancy and growth, used a variety of experimental techniques, including surgical preparations, to study the metabolism of fetal and placental tissues in sheep, the uptake and metabolism of nutrients by the hindlimb of cattle and pigs treated with somatotropin and insulin, and the growth and accretion of energy and protein in the gravid uterus of dairy cows in late pregnancy. The results of the latter yielded data that were the basis for new calculations of energy and protein requirements for pregnancy in the dairy cow.

During the Hintz administration, Peter Van Soest's retirement led to some reshuffling of responsibilities, and Alice Pell was reassigned to a teaching/research responsibility. Her increasing research activities included the use of an auto-

mated *in vitro* gas production system as a method of studying the kinetics of digestion of a variety of forages and forage fractions, the isolation and characterization of an anaerobic tannin-degrading bacterium, and the development of a fluorescence-based hybridization technique for ecological studies with rumen bacteria.

In other significant new research directions, the efforts of Beermann and his students continued to move increasingly toward the physiology of growth, as they engaged in studies of factors affecting protein accretion in muscle tissue, using techniques such as close arterial infusion in the hindlimb of steers. Likewise, Currie shifted the emphasis of his work more in the direction of molecular cell cycle mechanisms regulating oocyte maturation and early cleavage divisions in cattle, and Everett, working with the Advanced Dairy Genetics cooperative, initiated a closed-herd multiple ovulation embryo transfer (MOET) system to study its potential to accelerate genetic progress. Most remaining research programs, including those of new faculty, continued in directions already outlined.

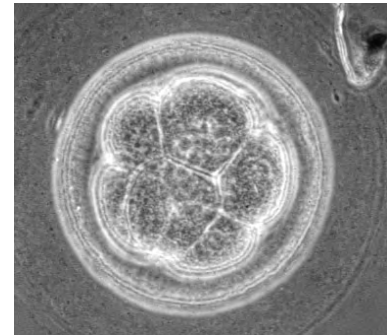
In 1995 the Animal Science Department and the Food Science Department hosted the annual meeting of the American Dairy Science Association. As usual, a great deal of time and energy were expended by people from both departments in preparing for and taking care of the many details, ranging from transportation, projectors, rooms, and snacks to programs and tours for spouses and children. Faculty, graduate students, secretaries, and other staff members as well as spouses contributed to this effort, demonstrating great team spirit. While judged a very successful meeting, unfortunately the weather was extremely warm and the lack of air conditioning in many of the meeting rooms created problems. No doubt this experience added fuel to the fire as proponents of convention centers rather than campuses as venues gained the upper hand in decision making.

Continuing Decline in State Support

During the Hintz years state support of the statutory colleges continued to decline. Six-figure departmental core budget reductions were common, usually resulting in the annual loss of more state-funded and other positions. Of perhaps even greater consequence, during about three of the five years, no faculty salary adjustments were provided in the state budget. This made it particularly difficult for some of the younger faculty who would normally have expected and received special attention and encouragement through salary increments. Although CALS salaries now lagged even further behind those in the endowed units at Cornell and those of



A glove box in use by one of Alice Pell's graduate students whose research involved aspects of rumen microbiology



*Regulation of the cell cycle at the molecular level and factors affecting the development of the early-stage embryo *in vitro* received the attention of physiologists Currie, Foote, and others during the 1980s and 1990s.*

colleagues elsewhere, strangely enough, morale in the department did not appear to be seriously affected. This could not be said of all departments and, I believe, is a credit to the dedication, generosity, and loyalty of our faculty who, for the most part, took this setback in stride. One example of the consequences of the loss of positions at this time was a change in the manner in which some departmental chores were handled. It had been traditional to have a small team headquartered on campus to deal with care of the Livestock Pavilion, assistance with teaching activities there, movement of livestock among all farms as well as to and from campus, handling of animal waste on campus, and general trucking needs for the various farms. This convenience had at first been eroded with the retirement of Dan Shattuck in an earlier era. It was finally lost during the Hintz years when Bernie Lamphere and Lloyd Quick took early retirement. Trucking then became a part-time responsibility of someone at the T&R Center, and other chores were either assigned to someone at the Large Animal Research and Teaching Unit (LARTU) or the service was simply no longer provided.

Hintz Steps Down

Although Skip had agreed at the end of his three-year appointment to continue for an additional two-year period, long before his time was up it was the feeling of many that he would likely return to teaching at the end of that time. When this became official, the new dean, Daryl Lund, initiated his process for finding the next chairperson. His method represented a big departure from that of the previous dean. In its early stages it developed into a badly handled “catfight” in which the department was allowed to identify two very different and, what proved to be, controversial internal candidates. A divided faculty then fought to a point where neither candidate could have garnered the support to be an effective leader. In the process, some intense campaigning was done, frank and “confidential” evaluations were leaked, feelings were hurt and egos bruised, and no one seemed to be in charge. Following this debacle, Alan Bell, a highly acceptable possibility, who had not originally wanted to be a candidate at this time, was persuaded to accept the position. Thus, in spite of a clumsy and damaging procedure and with a delay of about six months, during which Skip graciously continued to serve, an excellent outcome was ultimately salvaged from the mess.

Chapter 6 (1997–2000)

Alan W. Bell Appointed Chairman

Alan Bell assumed the chairmanship on March 24, 1997. Born and raised in Australia, he had joined our faculty in 1985 and had quickly moved through the ranks, with promotion to full professor in 1995. He had acquired a national and international reputation for his research on the nutritional physiology of animal growth, including fetal growth. He was beginning to develop an interest in the nutrition of the periparturient (transition) dairy cow. Alan also had a reputation as an excellent teacher. His major teaching assignment had been the beginning animal nutrition course (AS 212), one of the important core courses in the department.

Although initially reluctant at his age to set aside a promising research career in order to take on the chairmanship, once Alan decided to do so he easily made the transition. From my perspective, he was quick to grasp the information and subtleties needed to handle his responsibilities effectively, and he proved to be thoughtful and decisive in his actions. It is clear that he currently has the strong support of both the faculty and the college administration and that he is already considered one of the top chairpersons in CALS. His quick wit and amiable personality are great assets as he interacts with colleagues and stakeholders both on and off campus. In keeping with campus trends, Alan's dress code tends toward the casual and he is sometimes the subject of cajoling and teasing by his older colleagues on the special occasions when he wears a tie. Still (2000) handling the lectures for his course, he frequently finds himself overcommitted and up against deadlines. This seems to be the lot of most faculty and chairpersons nowadays.

Unlike previous chapters, this one will cover only the early part of the Bell administration, which is still a work in progress. As the century, millennium, and this story come to an end, however, it can be stated unequivocally that under Alan Bell's leadership the Animal Science Department is operating harmoniously, productively, and at the forefront of science and practice. In 1999 the department was once more reviewed comprehensively by an external team. While both this team and the department faculty recognize that we have a few programmatic weaknesses and an urgent need for renovation of some facilities, in most respects the reviewers were very complimentary and supportive of our programs and plans.

New and Returning Faculty

Still suffering from state budget problems, the college nonetheless authorized a search for a new assistant professor in extension/research, with dairy manage-



Alan Bell

ment and nutrition training and interests. This position was filled in 1998 by Thomas Overton, a New York native and Cornell graduate who had completed his Ph.D. work at the University of Illinois and who had been in a postdoctoral position in the department here at Cornell. Tom's research interests in the nutritional physiology of the periparturient dairy cow nicely complemented existing expertise in the metabolism group, filling a gap created when Alan Bell moved his attention largely to administrative matters. As this is written, Tom is in process of developing the details of what promise to be strong and innovative extension and research programs. Tom's appointment represented an excellent and timely move toward rebuilding the dairy extension program.



Thomas Overton

The department had an opportunity in 1999 to bid for a position with special university support under a new genomics initiative. The hope was that a person with molecular genetics interest could be recruited. A promising candidate was identified and interviewed. However, there was disagreement among some of the extra-departmental constituencies involved in the interview process and no offer was made. Hopefully, the department may yet benefit from this program, but the difficulties associated with this type of university-wide competition, where motives and expectations may differ widely, are sometimes discouraging.

During this period R. David (Dave) Smith, one of our faculty who had been serving as associate director of extension in CALS for a number of years, returned to the department with responsibility for a program in sustainable agriculture.

Retirements and Other Departures

In 1999 Don Beermann accepted a position as professor and head of the Department of Animal Science at the University of Nebraska in Lincoln. Don had received recognition for important contributions to the understanding of muscle growth and the potential for increasing protein accretion rates. Active in several professional societies, he was at that time the president-elect of the American Society of Animal Science. Thus he was widely known and respected and, having expressed an interest in becoming a department leader sometime in the future, it was perhaps inevitable that he would be offered the opportunity to do so. He was the only remaining member of our faculty with training and experience in the meats area. His departure at a time when positions were at a premium and other priorities had to be considered therefore created immediate problems in staffing the meats teaching program and forced the department into discussion of the long-range sustainability of this as well as some other parts of our undergraduate curriculum.

Late in 1998 Ronald Space, who for 10 years had been in charge of experimental animal and farm facilities and operations, retired. Ron had done a great job of increasing the efficiency of the animal and farm operations. His enthusiastic and effective manner of interacting with faculty, students, employees, and colleagues in other departments set a standard that would be difficult to replicate. During his time with us, he dealt with a number of labor problems and budget cutbacks that might have disheartened many. Ron considered them challenges and opportunities. While he was in charge, the running herd average for the dairy (300 to 350

cows) increased from about 16,000 to around 25,000 pounds. His successor was, therefore, very carefully chosen. It may be of interest that, under the modus operandi of the new college administration, the department had to justify the need for the position in Animal Science before even this important position vacancy could be refilled. In my view this once more exemplified a creeping and troublesome trend toward centralization of power by bureaucrats too far removed from knowledge of departmental activities. Following a national search, Tom Eddy was selected to replace Ron. Tom had acquired a lot of relevant experience in previous positions at USDA and Monsanto, and he joined us well equipped to deal with animal experimental as well as labor management issues.

At the beginning of the Bell administration, Dave Galton assumed leadership of the Pro-Dairy program, which soon underwent a reorganization. Additional state funding was obtained, old positions were rewritten, new ones developed, and new directions established. By late 1999, seven senior extension associates had been hired in subject matter disciplines ranging from dairy management, nutrition and herd health to field crops, facilities, human resource management, business management, and environmental education. While the program is administered by the Department of Animal Science, many of these extension associates are located in other CALS departments appropriate to their training and interests. This development represented another important step in strengthening the dairy extension program.

Facilities

Among the more significant changes in facilities during this period was the major (ca. \$500,000) renovation of a laboratory classroom (room 164), resulting in a state-of-the-art computer room with 60 modern computer stations. Funded largely by contributions from the dairy industry, this room is fully equipped for two-way real time communications so that it can accommodate classes that are being offered off-campus as well as on. Other changes in Morrison Hall involved the conversion of room 101 into a dry laboratory classroom to handle many of the classes previously assigned to room 164 and the development of additional computer laboratories in the basement.

The building skills of the maintenance crew at the Teaching and Research Center were once again put to good use in constructing a new “greenhouse” barn, which enhanced both the quality and capacity of facilities for rearing calves.

The Mount Pleasant sheep facility was closed in 1998 and subsequently used by the College of Veterinary Medicine as a research facility for housing sheep. This change was a slightly delayed consequence of the retirement of Doug Hogue and a move to reduce numbers and once more consolidate the sheep in one location for economic reasons. The Mount Pleasant unit had already achieved the original objective of demonstrating the merits of the STAR system.



Mike Van Amburgh conducts his class in a newly refurbished classroom equipped with state-of-the-art computer workstations and two-way real-time communications capabilities.

Research

As the century ended, exciting research was being done in the department. Many of the efforts highlighted in earlier chapters were continuing to evolve in an incremental fashion, as most research does. Department philosophy still encouraged a broad continuum of interests and projects ranging from fundamental discovery to farm application. A new flavor, however, introduced by new faculty and changing times, could easily be detected in the language, equipment, interests, and techniques of those stricken by the revolution in molecular biology. It was now possible to attack problems that would have been unthinkable only a few months or years before, and increasing numbers of the faculty were now in a position to understand and apply these new and powerful methodologies to their research interests, wherever on the continuum they lay. Examples of some active new research directions, each ultimately a part of attempts to solve practical on-farm problems, are featured below.

Among other activities, Yves Boisclair, using a mouse model, was examining the effects on growth rate of the targeted inactivation of a gene involved in the IGF binding complex. Susan Quirk was studying the expression and activity of a gene product (Fas antigen) in bovine granulosa and thecal cells during ovarian follicular development and atresia. Pat Johnson in the meantime conducted experiments on the expression pattern of mRNA for follistatin and the inhibin/activin subunits during follicular and testicular development in the chicken. Xingen Lei was cloning and sequencing an *E. coli* phosphatase/phytase gene isolated from pig colon. Xingen's use of transgenic mice to finally define the role of glutathione peroxidase closes the circle begun by Hogue's pioneering work on selenium nutrition some 40 years ago. John Parks was examining the possibility of manipulating the DNA in male germ cells by extraction, transfection, and replacement of spermatogonial cells in the testis; Bruce Currie was identifying and characterizing specific bovine genes involved in critical controls for early embryonic cell division; and even Bob Everett, a person trained primarily in statistics and population genetics, was actively investigating the development of an on-farm animal identification system based on unique differences in DNA.

Dale Bauman in this period was well along in an extensive investigation of conjugated linoleic acid (CLA), its production by ruminants, secretion in milk, and (through cooperation with scientists at Roswell Park) potential as a cancer inhibitor in animals and humans. His studies of the production of trans fatty acids during the biohydrogenation of unsaturated fatty acids in the rumen and their subsequent metabolism led him to an understanding of the biochemical mechanism causing milk fat depression, a syndrome associated with dairy cattle diets that had eluded researchers for more than 50 years.

Others, also tuned to recent developments in more basic science, were challenging well-entrenched conventional practices at the farm level. For example, Dave Galton was demonstrating that there are circumstances (e.g., with use of bST) where extended calving intervals may in fact be desirable; Mike Van Amburgh was reexamining the tissue requirements of growing calves for protein and energy and



The emphasis placed on understanding the biology of domestic animals has not eroded interest in and concern for the proper care, management, and welfare of animals.

attempting to sort out optimal feeding strategies to achieve accelerated growth in calves without damage to development of mammary secretory tissue; Ron Butler was working on relationships of nutrition and reproductive performance in high-producing cows, with special attention to possible deleterious effects of excess protein; Kavous Keshavarz was investigating the possibility that the protein, phosphorus, and calcium needs of laying hens might be reduced by manipulating the time of access to these nutrients; and Danny Fox, Alice Pell, and others were evaluating the Cornell Net Carbohydrate and Protein System model as a means of improving ration performance and efficiency on dairy and livestock farms, and extending use of this model to whole farm nutrient management systems.

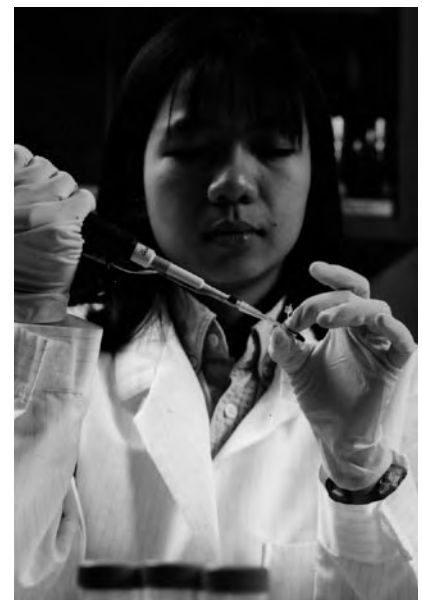
Some of the animal breeding faculty, in part to accommodate diverse student interests, were accumulating and examining small databases of genetic information on seeing-eye dogs and some zoo species.

Undergraduate Training

At the close of the century undergraduate applications to the Animal Science major were rising. With college constraints on numbers admitted, those enrolled were, therefore, becoming a more highly selected group, with average SAT scores in excess of 1300. The population of students with a major interest in Animal Science numbered in excess of 450, not significantly different from the numbers in the early 1960s. An additional 20 to 25 students in General Studies had advisers in Animal Science. More than two-thirds of our majors were female, in marked contrast with the situation when this story began in 1963, a time when very few females were enrolled in Animal Science and the College of Veterinary Medicine, likewise, accepted few if any females. Underrepresented minorities accounted for about 8 percent and Asian or unknown ethnicity for a further 7 percent of our recent enrollment. An effort is made to recruit students from rural upstate counties as well as from urban and suburban sources. Although those with a dairy farm background are still well represented, a large proportion of each class comes from nonfarm and often suburban sources. This has been the case for many years.

By 1999 the popular Dairy Fellows program was graduating as many as 50 per year, each with placement assured, mostly in the dairy industry and associated agribusiness sector. Some of these students and a majority of the others continued to be (at least initially) motivated by their interest in becoming veterinarians. Some 30 to 40 percent of our majors were pursuing graduate or professional degrees at Cornell or elsewhere. Backgrounds, interests, and lifestyles have, however, become increasingly diverse. It is not uncommon nowadays to have strict vegetarians among our majors, and the wide variety of careers graduates pursue is surprising.

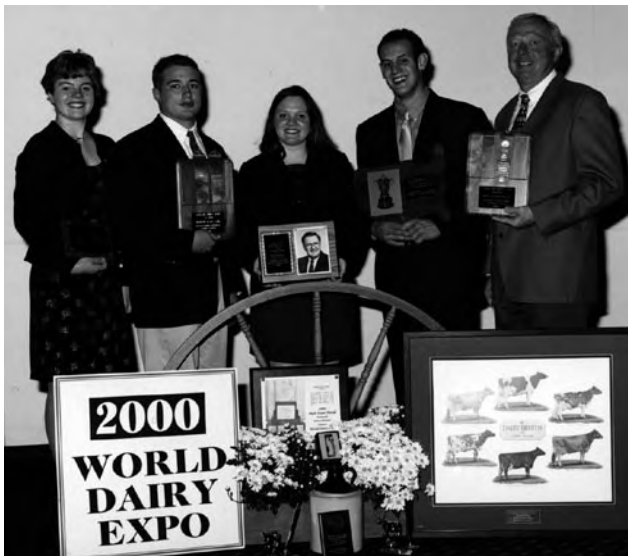
Over the years the program in Animal Science has always included opportunities for “hands-on” experience for those who needed or desired it. Such opportunities have ranged from practical animal management to



As the new millennium begins, molecular biology techniques are being employed by many of the Animal Science faculty in their research. Here a graduate student in Susan Quirk's group pursues her laboratory work.



The Dairy Fellows class of 1999 with David Galton (front row, right) and other faculty who work with the program



The latest winning dairy cattle judging team (2000), a Cornell tradition continued under the leadership of David Galton

laboratory research experience. Many students have benefited from this, and the college administration has strongly encouraged other departments to make such opportunities available to their undergraduates.

Extracurricular activities have also been important to our students. Over time such opportunities have become greater and more diversified both at university and department levels. Active student clubs associated with the department have, from 1963 to 2000, increased from one to at least four or five. While interest in individual clubs has at various times waxed and waned, there is currently substantial activity in all. The original Roundup Club still exists but is now

known as the Block and Bridle Club and is affiliated with the National Block and Bridle Club. Along the way, clubs catering to dairy cattle, horse, pre-veterinary, and even exotic animal interests have been added. The Cornell University Dairy Science Club (CUDS), with a current membership in excess of 100, is the largest of these. The annual Student Livestock Show has continued to attract participation, especially by students who have little experience with animals.

Graduate Student Admissions

Graduate student enrollment continues to be around 65. The proportion of females has gradually grown to exceed 40 percent, and at present students from foreign countries represent about 50 percent of the population. Most of our graduate students now enter through the Fields of Animal Science and Animal Breeding, in contrast with the situation when this story began. At that time many of those with interests in nutrition and physiology were still admitted through the Fields of Animal Nutrition and Animal Physiology.

Administrative Changes

As this chapter closes, a committee convened by Provost Randel to conduct a search for a new dean of the College of Agriculture and Life Sciences has completed its work. Our first female dean, Susan Henry, who had been dean of the Mellon College of Science at Carnegie Mellon University, assumed her duties here on July 1, 2000. The provost himself was recently appointed president of the University of Chicago, and the senior vice president and chief financial officer has moved on. We now have a new female provost, Biddy Martin. As new searches have cascaded I am reminded once more of the enormous amount of time devoted to recruiting personnel at all levels in a vibrant and competitive university like Cornell.

Future Directions

A strong department must spend much more time looking forward than looking back. While the future is not the purpose of this effort, I cannot refrain from making a few final comments about some of the relevant issues that will no doubt shape the immediate, if not longer-term, future of the Department of Animal Science at Cornell.

Perhaps a good place to start is with current perceptions of the department by both insiders and outsiders. Over a period of many years Cornell has been viewed as a leader by faculty in other departments of animal science across the country. Periodic external reviews, including the one in 1999, have supported this. We are often ranked overall as first among our U.S. peers. Other departments at Cornell have more diverse views. Some, especially those committed to fundamental aspects of biology, seem sometimes to view us as too traditional or too applied. A part of this simply reflects their ignorance of our mission, of much of what we do accomplish, and of the industries we serve as part of our land grant mission. Within the department there is also a healthy diversity of opinion, and all recognize that along with our strengths there are areas of weakness.

For example, there is no doubt that, as the department approaches the end of its first century, the program in animal nutrition and metabolism represents a major strength. Likewise, the program in biology of reproduction, although not seen as the overall national leader it once was, clearly excels in certain areas. The expertise and interest in developmental biology and growth represented by faculty in several areas of the department is also a resource upon which we might capitalize. Dairy management is another area in which we clearly excel. On the other hand, unless the direction of the program in animal breeding is changed to better reflect developments in molecular genetics, it will not be well positioned for future contributions; and livestock management is not one of our strong areas. Most

departments have what I might characterize as stars, rising stars, solid citizens, and occasional misfits among their faculty. Our department is not atypical in this respect. Although some may disagree, in my view a few additional stars and rising stars, with a concomitant reduction in the other categories, is an objective that must be given high priority in the coming years.

Even when there is agreement on directions and needs, progress toward goals can often be delayed and erratic because of a variety of constraints, both external and self-imposed. In the last 15 years, for example, an effort to hire more faculty with molecular biology training was delayed by funding problems and weakened by the concomitant effort to maintain strengths in other areas. Tenure policies that make it difficult to discipline or remove poor performers and the loss of mandatory retirement age requirements slow down the availability of new positions through which to bring about changes in research directions. To a greater degree than in many departments, the current faculty is strongly committed to maintaining both breadth and depth in the undergraduate teaching and the extension programs—a noble stance, but in the face of declining positions, necessarily another constraint to the strength and flexibility of the research effort. To a considerable degree it has become a zero-sum game.

To develop the will to slash old programs when new ones are added seems to be one of the most difficult decisions for faculty. I am convinced that the Department of Animal Science has been lax in this regard and that the future will demand such actions if it is to continue its leadership position. It is likely that service to the animal industries, and particularly the dairy industry, will long remain a driving force and thus a high priority of the department. A continuing strong demand for an undergraduate program serving students with diverse animal interests is expected. In order to service these needs, nothing less than innovative, cutting-edge programs in teaching, research, and extension will be the obvious goal. Realistically, this will require bold moves to build excellence in certain areas of research and to phase out others. What, specifically, will the department choose to emphasize and what will it give up in order to provide the resources? Among the more obvious questions that are likely to be debated are the following:

1. Considering their lesser importance and contributions to New York agriculture, can we afford to maintain personnel and animal research facilities for swine, poultry, sheep, and beef cattle? Recognizing that such diversity has advantages, should we nonetheless focus on dairy cattle and laboratory species and depend on other states to focus on meat animal species? Indeed, with the frontiers moving rapidly toward cellular and molecular levels, can we really justify the extensive dairy cattle facilities we have today?

2. If it becomes impossible to maintain or regain excellence in all disciplines currently represented in the department, which of them could logically be deemphasized, without destroying the overall mission? Meat science has already been dropped. Could others be? Perhaps a more realistic approach would be consideration of which areas of specialization within disciplines should be strengthened at the expense of others. My personal philosophy favors a program of building on current strengths but not at the expense of important new initiatives. It is worth remembering that our department's reputation as a leader was built on bold and innovative departures from tradition.

3. Which courses could be deleted from the current offerings in order to provide time for new offerings and keep total teaching commitments in line with the lesser number of faculty now available? Could the exchange of distance learning opportunities with other institutions help alleviate the crunch? At the least, which of our course offerings could be combined (e.g., beef cattle, sheep, and swine?) or offered every other year? These issues were in fact among those discussed at a faculty retreat in summer 2000.

4. Does the Department of Animal Science still fit best in the College of Agriculture and Life Sciences, or would there be advantages to having it be part of the College of Veterinary Medicine? In many respects our department has more in common with the latter than it does with many of the other departments in CALS, and it is often thought by outsiders (and even some Cornell constituencies) to be associated with the Veterinary College. Most of us can also think of disadvantages to such an affiliation, however.

5. How can we better organize on a regional basis to permit a logical division of research and extension efforts among colleges in neighboring states that would reduce duplication, allow specialization in different areas, and result in excellence at each institution?

Although many factors will influence the future directions of the department, the initiative and vision of the department faculty and administration will, as always, be crucial. My association with the department and college over the last 40 years gives me confidence that this challenge will be met.

Appendix 1. Organization of the Department

I. Organization of Department of Animal Husbandry 1963–1964

Head of department: J. K. Loosli

Administrative assistant: B. E. Mapes

A. Instruction and Research

General Livestock Production

J. I. Miller, professor (beef)

D. E. Hogue, associate professor (sheep)

W. G. Pond, associate professor (swine)

Dairy Cattle

K. L. Turk, professor (director of international agricultural development)

G. W. Trimberger, professor

J. M. Elliot, assistant professor

W. G. Merrill, assistant professor

G. H. Schmidt, assistant professor

A. Bensadoun, research nutritionist

Livestock Feeding

S. E. Smith, professor

Animal Nutrition and Physiology

J. T. Reid, professor

S. A. Asdell, professor

W. Hansel, professor

R. G. Warner, professor

D. A. Benton, associate professor

H. F. Travis, associate professor (USDA)

G. Sperling, research associate

K. Davison, research associate

A. M. Bowerman, research associate

Animal Breeding

C. R. Henderson, professor

R. H. Foote, professor

R. W. Bratton, associate professor

L. D. Van Vleck, assistant professor

E. Bradford, visiting assistant professor (University of California)

Meats

G. H. Wellington, professor
J. R. Stouffer, associate professor
G. C. Todd, federal meat inspector

B. Extension

R. Albrechtsen, professor and department extension leader

Dairy Cattle

J. D. Burke, professor
H. W. Carter, professor (part-time research)
R. W. Spalding, professor (part-time research)
S. T. Slack, professor (part-time research)
H. R. Ainslie, associate professor
A. M. Meek, assistant professor (part-time research)
J. B. Stone, assistant professor (part-time research)
L. H. Wadell, administrative supervisor of DRPL

General Livestock

M. D. Lacy, professor (beef cattle)
W. F. Brannon, associate professor (part-time research, sheep)
E. A. Pierce, associate professor (part-time research, meats and swine)

4-H Livestock and Dairy

H. A. Willman, professor
D. A. Hartman, associate professor (part-time research)

Emeritus professors

C. G. Bradt
S. J. Brownell
C. M. McCay
G. W. Tailby

II. Professorial Faculty and Their Major Academic Interests (1999)

Professor

R. E. Austic	Nutritional biochemistry, poultry nutrition
D. E. Bauman	Metabolic regulation, lactation growth
D. H. Beermann	Nutrition and growth, meat science
A. W. Bell	Nutritional physiology, pregnancy, growth
R. W. Blake	International livestock systems, breeding
W. R. Butler	Dairy cattle reproduction, ovarian function
W. B. Currie	Mammalian embryo development
R. W. Everett	Dairy cattle breeding, sire evaluation
D. G. Fox	Dairy and beef cattle nutrition, systems modeling
D. M. Galton	Dairy management
R. C. Gorewit	Mammary biology, lactation physiology
H. F. Hintz	Equine and companion animal nutrition
K. Keshavarz	Poultry nutrition

P. A. Oltenacu	Dairy systems modeling, breeding
A. N. Pell	Forage digestion, rumen microbiology, agroforestry
E. J. Pollak	Beef and dairy cattle breeding
R. L. Quaas	Quantitative genetic methodology, cattle breeding
M. L. Thonney	Nutrition, growth, sheep and beef management

Associate Professor

D. L. Brown	Nutritional toxicology, youth programs
L. E. Chase	Dairy cattle nutrition
P. A. Johnson	Avian reproduction, molecular endocrinology
E. A. Oltenacu	Animal breeding and behavior
J. E. Parks	Gamete biology, embryo biotechnology
R. D. Smith	Sustainable agricultural systems

Assistant Professor

Y. R. Boisclair	Molecular regulation, lactation, growth
X. Lei	Molecular regulation, mineral nutrition
T. R. Overton	Dairy nutrition and management
S. M. Quirk	Molecular regulation, ovarian function
M. E. Van Amburgh	Ruminant nutrition, growth, systems modeling

Emeritus Professor (active)

J. M. Elliot	Ruminant nutrition and metabolism
R. H. Foote	Gamete biology, reproductive biotechnology
D. E. Hogue	Sheep production and management
P. J. Van Soest	Forage digestion, feed chemistry
A. van Tienhoven	Comparative reproduction, ethics

Joint or Adjunct Professor

G. F. Combs, Jr.	Mineral and vitamin nutrition
E. S. Dierenfeld	Exotic animal nutrition
H. N. Erb	Epidemiology and population medicine
E. D. Harwood	Extension administration
R. E. Pitt	Biological engineering, nutritional modeling
C. J. Sniffen	Dairy cattle nutrition, protein nutrition
J. R. Thompson	Dairy cattle breeding, sire selection

The 29 members of the professional faculty (28.25 FTE) with primary appointments in the Department of Animal Science include four women (one professor, two associate professors, one assistant professor) and no underrepresented minorities. Their countries of origin, other than the United States, include Australia, Canada, Iran, New Zealand, People's Republic of China, Romania, and United Kingdom.

III. Informal Organization of Faculty and Academic Staff in Groups Representing Major Subject Areas and Effort Distribution Among the Major Functions, 1999

	Effort Distribution (FTE)		
	Instruction	Research	Extension
Animal Breeding and Genetics			
R. W. Blake (also International Animal Agriculture)		0.10	
R. W. Everett (also Production Management)	0.10	0.20	0.30
E. A. Oltenacu*	0.60	0.05	0.10
P. A. Oltenacu (also Production Management)	0.40	0.20	
E. J. Pollak	0.70	0.25	0.05
R. L. Quaas	0.50	0.50	
J. R. Thompson (Adjunct, Genex, Inc.)			
Total Faculty	2.30	1.30	0.45
Postdoctoral Associate			
Z. Zhang		1.00	
*Appointment is 0.75 FTE			
Animal Growth Biology (All faculty are co-members of Animal Nutrition and Metabolism)			
D. E. Bauman		0.10	
D. H. Beermann	0.50	0.30	0.10
A. W. Bell*		0.10	
Y. R. Boisclair	0.40	0.40	
M. L. Thonney (also Production Management)		0.20	
M. E. Van Amburgh		0.20	
Total Faculty	0.90	1.30	0.10
Postdoctoral Associates			
R. A. Ehrhardt		1.00	
J.-R. Wang	1.00		
*Administration 0.70 FTE			
Animal Nutrition and Metabolism			
R. E. Austic*	0.35	0.55	
D. E. Bauman (also Animal Growth Biology)	0.35	0.55	
D. H. Beermann (also Animal Growth Biology)		0.10	
A. W. Bell (also Animal Growth Biology)**	0.15	0.05	
Y. R. Boisclair (also Animal Growth Biology)		0.20	
D. L. Brown	0.20	0.30	0.50
L. E. Chase (also Production Management)	0.10	0.05	0.30
G. F. Combs, Jr. (Joint, Division of Nutritional Sciences)			
E. S. Dierenfeld (Adjunct, Bronx Zoo)			

	Effort Distribution (FTE)		
	Instruction	Research	Extension
D. G. Fox (also Production Management)	0.10	0.20	0.10
H. F. Hintz	0.70	0.30	
K. Keshavarz (also Production Management)		0.25	0.50
X. Lei	0.40	0.60	
T. R. Overton (also Production Management)		0.30	0.30
A. N. Pell (also International Animal Agriculture)	0.35	0.40	
R. E. Pitt (Joint, ABEN)			
W. G. Pond (Visiting)			
M. L. Thonney (also Animal Growth Biology)		0.20	
M. E. Van Amburgh (also Animal Growth Biology, Production Management)	0.50	0.30	
Total Faculty	3.20	4.35	1.70
Senior Research Associates			
D. J. Cherney	0.50	0.50	
P. Schofield		1.00	
Postdoctoral Associates			
X. Fu		1.00	
E. A. Matitashvili		1.00	
T. M. Mullins		1.00	
J. M. Porres Foulquie		1.00	
E. Rodriguez		1.00	
Visiting Fellow			
R. Solomon		1.00	
*Administration 0.10 FTE			
**Administration 0.70 FTE			
Animal Physiology			
W. B. Butler	0.50	0.50	
W. B. Currie	0.65	0.35	
R. C. Gorewit	0.20	0.80	
P. A. Johnson	0.35	0.65	
J. E. Parks	0.55	0.45	
S. M. Quirk	0.40	0.60	
Total Faculty	2.65	3.35	
Research Associate			
G. G. Ignatz		1.00	

	Effort Distribution (FTE)		
	Instruction	Research	Extension
International Animal Agriculture			
R. W. Blake (also Animal Breeding Genetics)	0.40	0.50	
D. G. Fox (also Animal Nutrition Metabolism, Production Management)		0.10	
P. A. Oltenacu (also Animal Breeding Genetics, Production Management)		0.10	
A. N. Pell (also Animal Nutrition Metabolism)	0.10	0.15	
Total Faculty	0.50	0.85	
Production and Management			
L. E. Chase (also Animal Nutrition Metabolism)		0.10	0.45
H. N. Erb (Joint, CVM)			
R. W. Everett (also Animal Breeding Genetics)		0.20	0.20
D. G. Fox (also Animal Nutrition Metabolism)	0.20	0.20	0.10
D. M. Galton	0.50	0.20	0.30
K. Keshavarz (also Animal Nutrition Metabolism)	0.05		0.20
P. A. Oltenacu (also Animal Breeding Genetics)		0.20	0.10
T. R. Overton (also Animal Nutrition Metabolism)		0.10	0.30
R. D. Smith*			0.50
C. J. Sniffen (Adjunct, Miner Institute)			
M. L. Thonney (also Animal Nutrition Metabolism)	0.50		0.10
Total Faculty	1.25	1.00	2.25
*Administration 0.50 FTE			
Senior Extension Associates			
J. F. Conway			1.00
K. Czymmek			1.00
C. C. Elrod			1.00
C. A. Gooch			1.00
D. C. Grusenmeyer			1.00
J. Karszes			1.00
W. C. Stone			1.00
S. W. Telega			1.00
Extension Associates			
M. J. Baker			1.00
T. V. Bui			1.00
Instructor			
T. L. Batchelder	0.50		0.50

IV. Faculty Appointments (at level of assistant professor or higher) and Terminations, 1963–2000**

Name	Appointment Date	Termination Date	Present Status (as of 07/01/00)
P. Aho	06/01/89 (Poultry)	09/02/92	Poultry Perspective (Conn.)
H. R. Ainslie	09/01/50	05/30/83	deceased
R. Albrechtsen	07/01/44	11/28/69	deceased
S. A. Asdell	03/01/30	06/30/65	deceased
R. E. Austic	05/01/70 (Poultry)		active
D. E. Bauman	01/01/79		active
D. H. Beermann	08/01/78	07/02/99	U. Nebraska
A. W. Bell	12/05/85		active
D. A. Benton	05/01/63	01/31/66	unknown
R. D. Boyd	08/01/79	09/15/94	P.I.C. (Ky.)
R. W. Blake	07/01/86		active
Y. R. Boisclair	12/19/94		active
W. F. Brannon	10/16/53	09/05/79	professor emeritus
R. W. Bratton	04/01/46	06/30/78	retired
D. L. Brown	07/18/94		active
J. D. Burke	04/01/46	12/30/70	professor emeritus
W. R. Butler	07/01/75		active
H. W. Carter	07/01/49	05/31/71	professor emeritus
L. E. Chase	01/30/75		active
C. E. Coppock	08/01/64	08/11/77	consultant (Texas)
W. B. Currie	11/01/78		active
T. R. Dockerty	10/01/80	06/30/87	USDA
J. M. Elliot	08/01/60	08/29/91	professor emeritus
R. W. Everett	09/01/68		active
J. D. Ferguson	11/01/87	07/31/90	U. Penn
R. H. Foote	08/01/50	06/30/93	professor emeritus
D. G. Fox	12/07/72	09/02/74	
D. G. Fox	07/01/77		active
D. M. Galton	04/20/81		active
R. C. Gorewit	07/01/75		active
W. Hansel	07/01/49	03/31/78 (to NYSCVM)	professor emeritus
D. A. Hartman	07/16/56	12/30/77	retired VPI
C. R. Henderson	09/16/48	06/30/76	deceased
H. F. Hintz	07/01/67		active

IV. Faculty Appointments, continued

Name	Appointment Date	Termination Date	Present Status (as of 07/01/00)
D. E. Hogue	10/01/57	08/30/95	professor emeritus
P. A. Johnson	12/01/87 (Poultry)		active
L. R. Jones	03/01/89	6/30/96	Applied Computer Tech. (N.Y.)
K. Keshavarz	09/01/81 (Poultry)		active
M. D. Lacy	02/01/46	05/31/71	deceased
L. L. Larson	07/01/70	07/26/72	U. Nebraska
X. Lei	12/03/94		active
J. K. Loosli	10/01/39	06/30/74	professor emeritus
R. E. McDowell	01/15/67	06/30/86	professor emeritus
A. M. Meek	09/01/61	02/22/72	deceased
W. G. Merrill	07/01/59	09/30/94	professor emeritus
J. I. Miller	07/01/38	10/31/76	deceased
P. D. Miller	11/01/67	12/31/71	National DHIA
R. P. Natzke	07/01/66	8/15/81	U. Florida
E. A. Oltenacu	05/03/79		active
P. A. Oltenacu	12/01/74		active
T. R. Overton	09/01/98		active
J. E. Parks	12/11/88		active
A. N. Pell	11/08/90		active
E. A. Pierce	09/01/55	07/30/75	deceased
E. J. Pollak	07/01/80		active
W. G. Pond	08/01/57	10/15/78	retired USDA
R. L. Quaas	12/01/73		active
S. M. Quirk	11/07/94		active
J. T. Reid	01/01/48	11/16/79	deceased
S. W. Sabin	09/01/64	08/29/91	professor emeritus
G. H. Schmidt	02/01/58	08/20/74	retired Ohio State
S. T. Slack	02/15/51	09/15/82	deceased
N. E. Smith	07/01/71	08/05/74	retired Purina Mills
R. D. Smith	09/01/77		active
S. E. Smith	09/01/46	01/31/77	deceased
T. R. Smith	06/01/84	11/10/88	Dairy Strategies (Wisc.)
C. J. Sniffen	01/01/78	06/09/89	Miner Institute (N.Y.)
R. W. Spalding	02/15/47	06/30/77	professor emeritus
J. B. Stone	09/01/62	02/28/66	retired U. Guelph
J. R. Stouffer	09/01/56	09/30/88	professor emeritus

Name	Appointment Date	Termination Date	Present Status (as of 07/01/00)
M. L. Thonney	07/15/75		active
G. W. Trimberger	07/01/45	12/31/74	professor emeritus
K. L. Turk	02/01/38	09/15/38	
K. L. Turk	04/01/44	06/30/74	deceased
H. F. Tyrrell	07/01/68	06/16/69	USDA
M. E. VanAmburgh	12/18/95		active
N. L. VanDemark	01/31/74	05/30/83	professor emeritus
P. J. Van Soest	08/01/68	08/30/95	professor emeritus
L. D. Van Vleck	09/01/62	07/06/88	professor emeritus
W. J. Visek	07/01/64	08/30/75	retired U. Illinois
R. G. Warner	10/01/51	12/30/89	professor emeritus
G. H. Wellington	01/01/47	12/30/77	professor emeritus
H. A. Willman	9/01/35 (?)	04/01/64	deceased
M. J. Wylie	12/01/87	11/30/93	U. Maryland
R. J. Young	02/01/60 (Poultry)	05/30/83	professor emeritus

** Includes those appointed during the period 1963 to 2000 as well as those appointed earlier who retired, died, or left during that period.

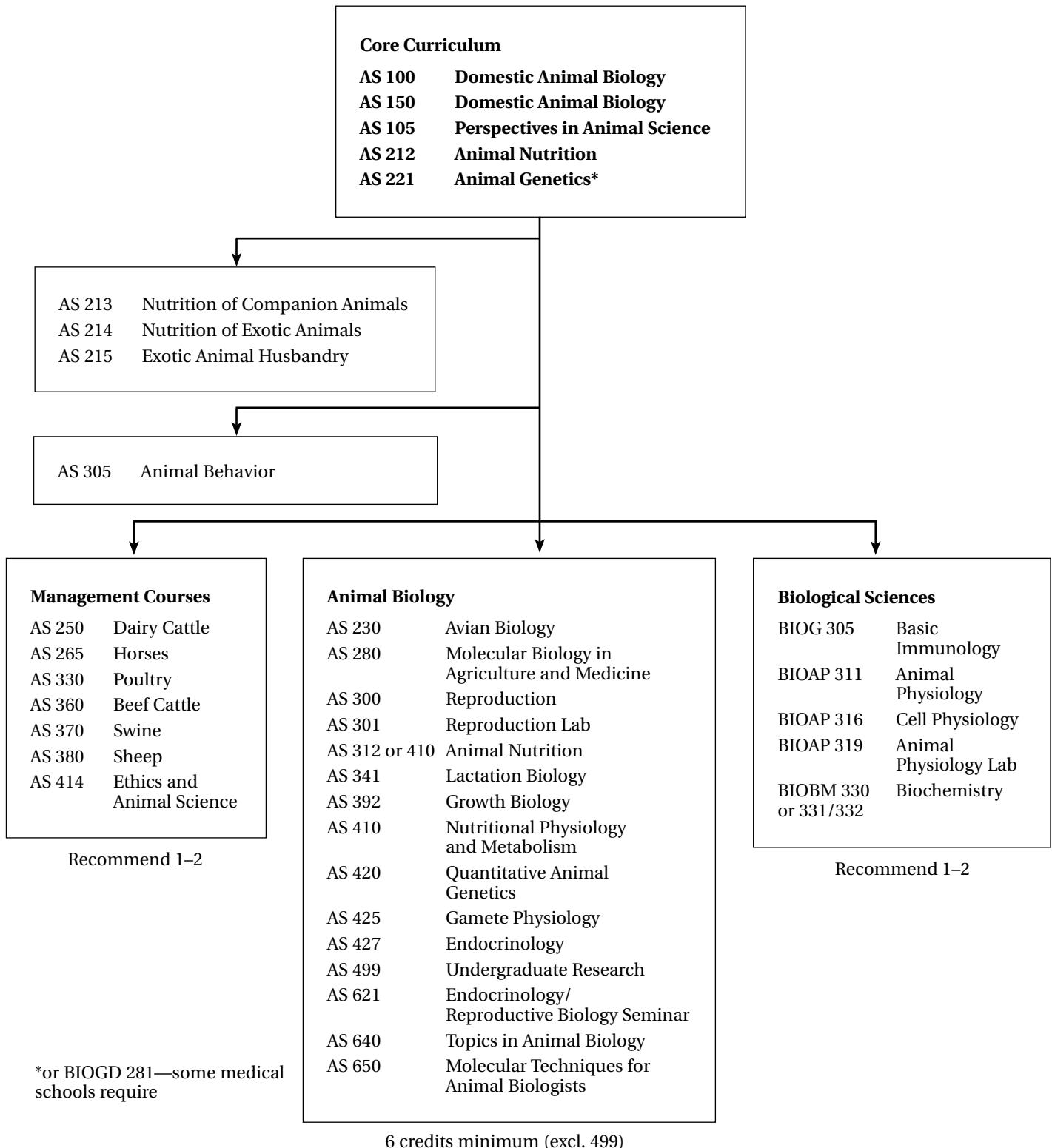
Appendix 2. Enrollment in Animal Science Courses Taught 1995–1999

Course No.	Course Name	Instructor	Enrollment/Year				
			95–96	96–97	97–98	98–99	99–00
100	Domestic Animal Biology I	Currie	158	149	149	132	135
105	Contemporary Perspectives in Animal Science	Gorewit/Cherney	75	78	82	56	83
120	FWS: Animal Domestication	Oltenacu, E.	—	17	16	17	16
150	Domestic Animal Biology II	Butler	132	125	124	100	112
212	Animal Nutrition	Bell/Cherney	132	159	147	138	142
213	Nutrition of Companion Animals/Nutrition of the Dog	Hintz	—	175	—	164	—
214	Nutrition of Exotic Animals	Hintz	114	—	132	—	153
215	Exotic Avian Husbandry	Parks/Muscarella	70	63	78	78	66
216	Nutrition of the Cat	Hintz	—	—	—	87	—
221	Introduction to Animal Genetics	Pollak	150	111	127	109	113
250	Dairy Cattle	Galton/Batchelder	69	93	59	65	60
251	Dairy Cattle Selection	Galton	37	44	—	45	35
265	Horses	Collyer/Hintz	73	72	45	73	89
280	Molecular Biology in Agriculture and Medicine	Quirk	—	—	—	7	45
290	Meat Science	Beermann/Shaw	18	23	23	19	23
300	Animal Reproduction and Development	Parks	88	84	91	97	72
301	Animal Reproduction and Development Lab	Parks	65	56	71	58	48
305	Farm Animal Behavior	Oltenacu, E./Haupt	55	57	54	78	65
321	Applied Animal Genetics Seminar	Oltenacu, P./Pollak	33	18	31	36	20
322	Applied Animal Genetics Lab	Oltenacu, P./Pollak	15	8	16	12	12
323	Equine Genetics	Oltenacu, P./Hintz/ Oltenacu, E.	—	—	19	20	20
330	Poultry Biology, Nutrition, and Management	Keshavarz	6	—	—	—	15
341	Biology of Lactation	Boisclair	—	—	15	—	39

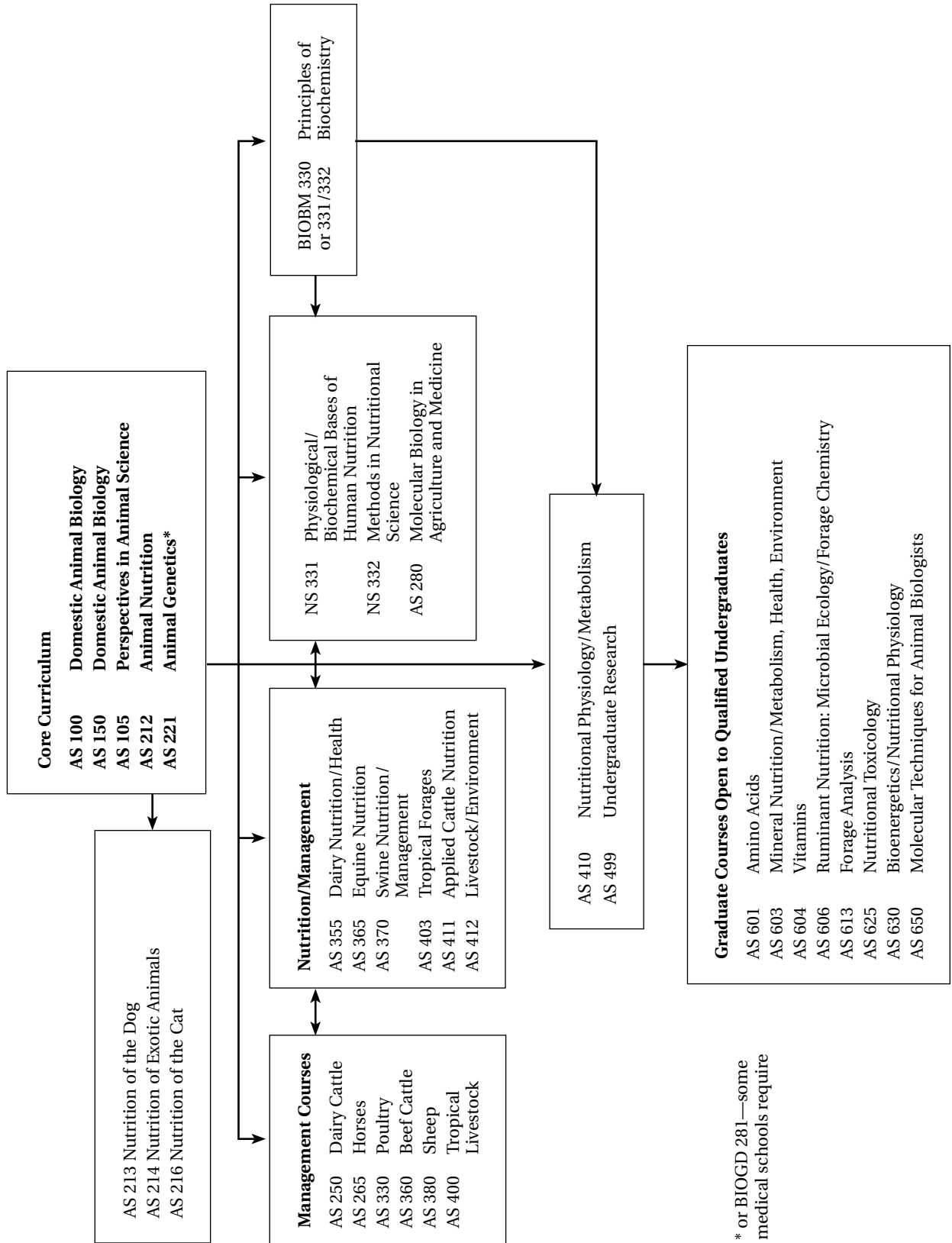
Course No.	Course Name	Instructor	Enrollment/Year				
			95–96	96–97	97–98	98–99	99–00
351	Dairy Herd Management	Galton/Batchelder	41	35	58	45	35
355	Dairy Nutrition and Health	Galton/Chase/Batchelder	37	38	36	40	45
360	Beef Cattle	Thonney	18	23	22	—	29
365	Equine Nutrition	Hintz	—	—	46	24	34
370	Swine Nutrition and Management	Lei	23	—	9	12	—
380	Sheep	Thonney (Hogue)	47	33	29	44	—
392	Animal Growth Biology	Beermann	23	25	18	18	—
400	Tropical Livestock Production	Blake	10	14	—	7	11
401	Dairy Production Seminar	Bauman/Overton	27	27	29	23	20
402	Seminar in Animal Sciences	Currie	17	24	18	18	9
403	Tropical Forages	Pell (Van Soest)	—	12	—	12	—
410	Nutritional Physiology and Metabolism	Austic/Bauman	28	28	29	27	25
411(312)	Applied Cattle Nutrition	Van Amburgh	28	41	33	55	38
412	Livestock and Environment	Fox	—	15	26	47	64
414	Ethics in Animal Science	Cherney (Van Tienhoven)	37	36	30	18	18
420	Quantitative Animal Genetics	Pollak	26	19	11	11	8
425	Gamete Physiology and Fertilization	Parks	31	—	24	17	—
427	Fundamentals of Endocrinology	Johnson	40	48	31	30	21
456	Dairy Management Fellowship	Galton/Batchelder	34	30	29	50	35
496	Introduction to Research	Currie	14	24	16	20	11
497	Individual Study in Animal Science	Staff	46	47	63	49	59
498	Undergraduate Teaching	Staff	67	60	57	73	63
499	Undergraduate Research	Staff	54	71	46	71	41
601	Amino Acids	Austic	—	—	11	—	—
603	Mineral Nutrition	Lei/Combs	—	17	—	15	—
604	Vitamins	Combs	8	2	2	—	—
606	Ruminant Nutrition	Pell	17	—	12	—	17
620	Seminar in Animal Breeding	Staff	9	10	11	—	—
621	Seminar: Endocrinology/Reproduction Biology	Staff	1	2	1	—	—
625	Nutritional Toxicology	Brown	15	11	12	9	7
630	Bioenergetics/Nutritional Physiology	Bell/Bauman	—	11	—	—	—
650	Molecular Techniques for Animal Biology	Boisclair/Quirk	12	11	11	—	16
720	Advanced Quantitative Genetics	Quaas	2	—	3	—	—

Appendix 3. Pathways Used in Advising Undergraduates

I. Pre-Veterinary Pathway

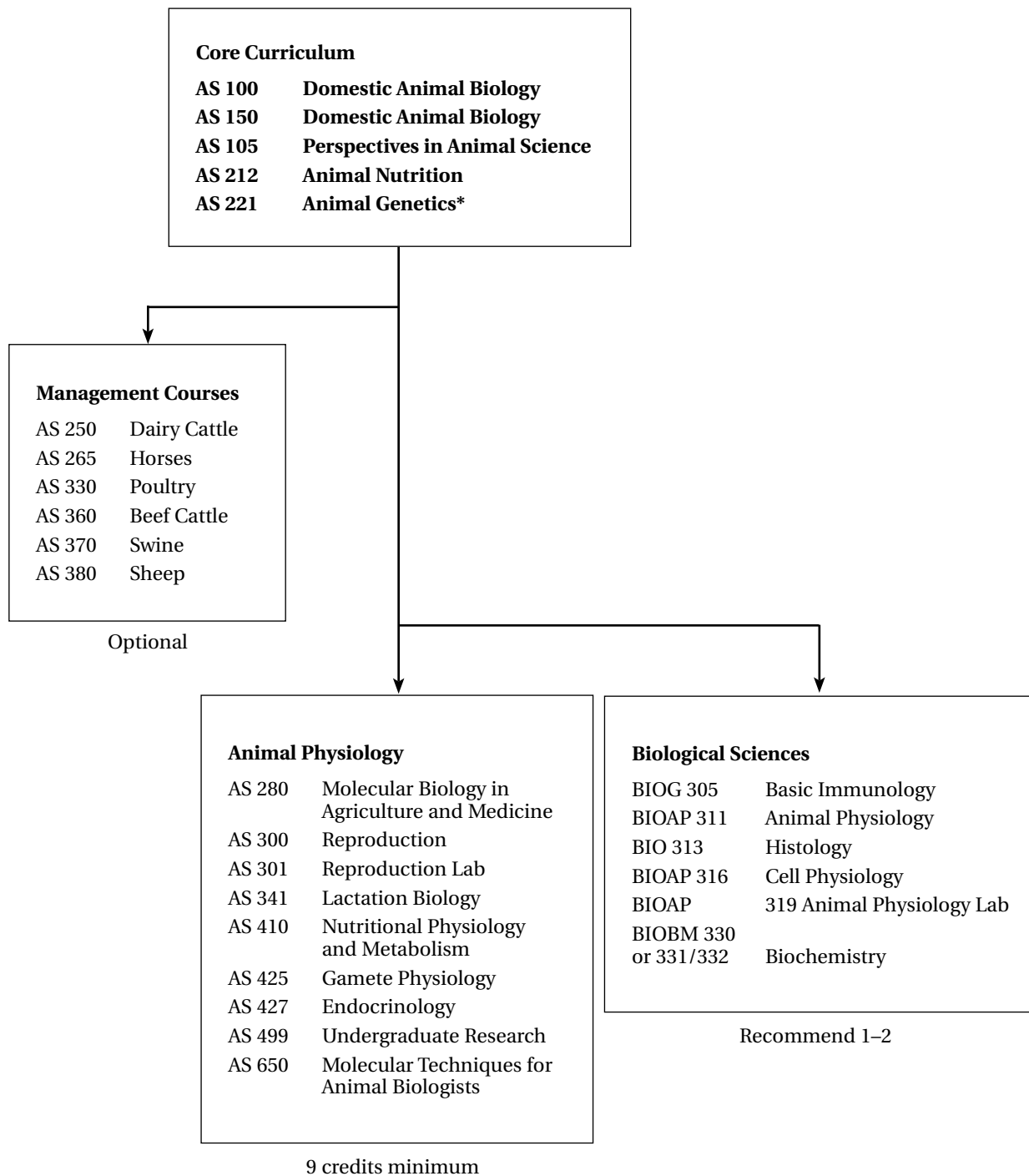


II. Animal Nutrition Pathway



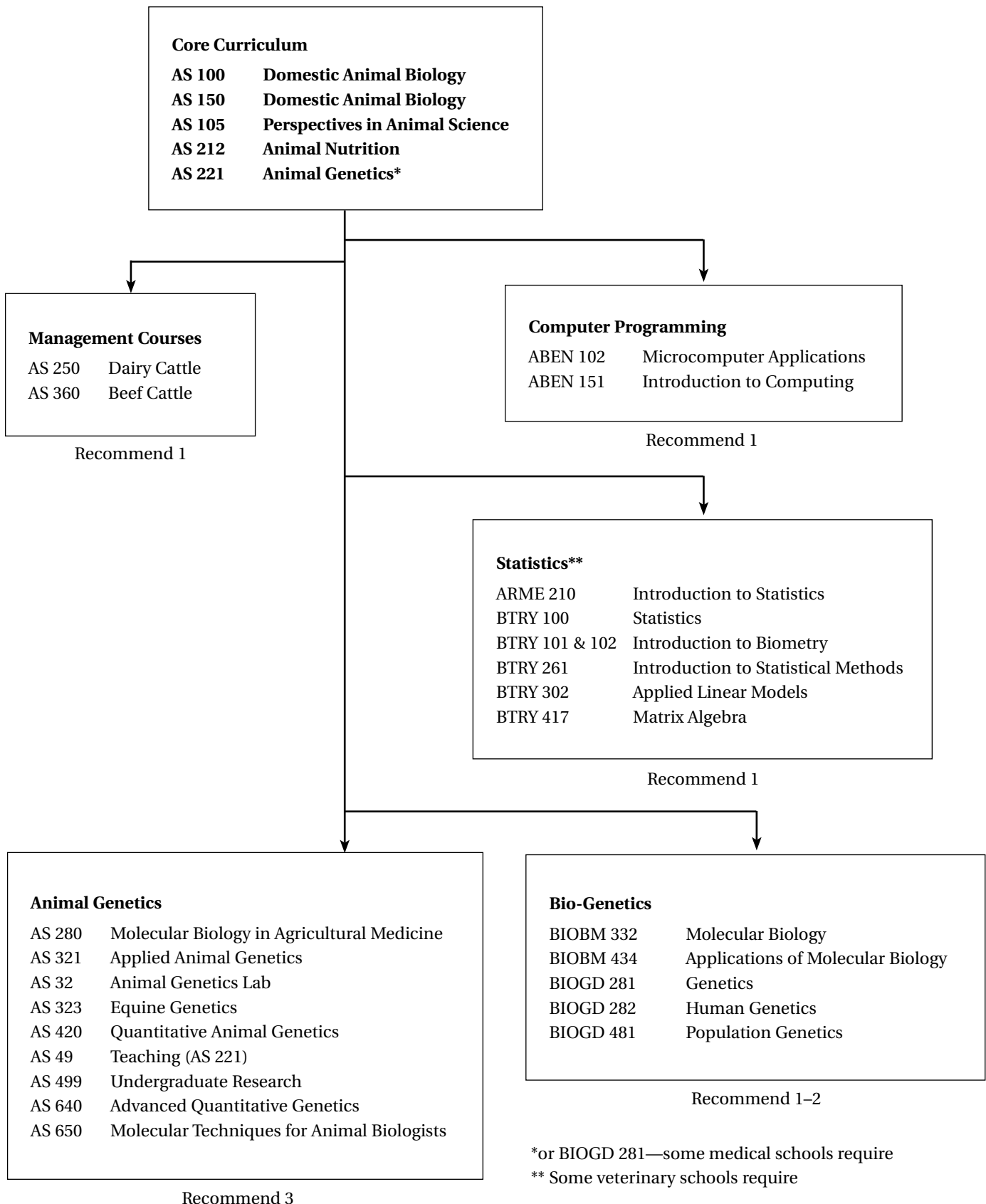
* or BIOGD 281—some medical schools require

III. Physiology Pathway

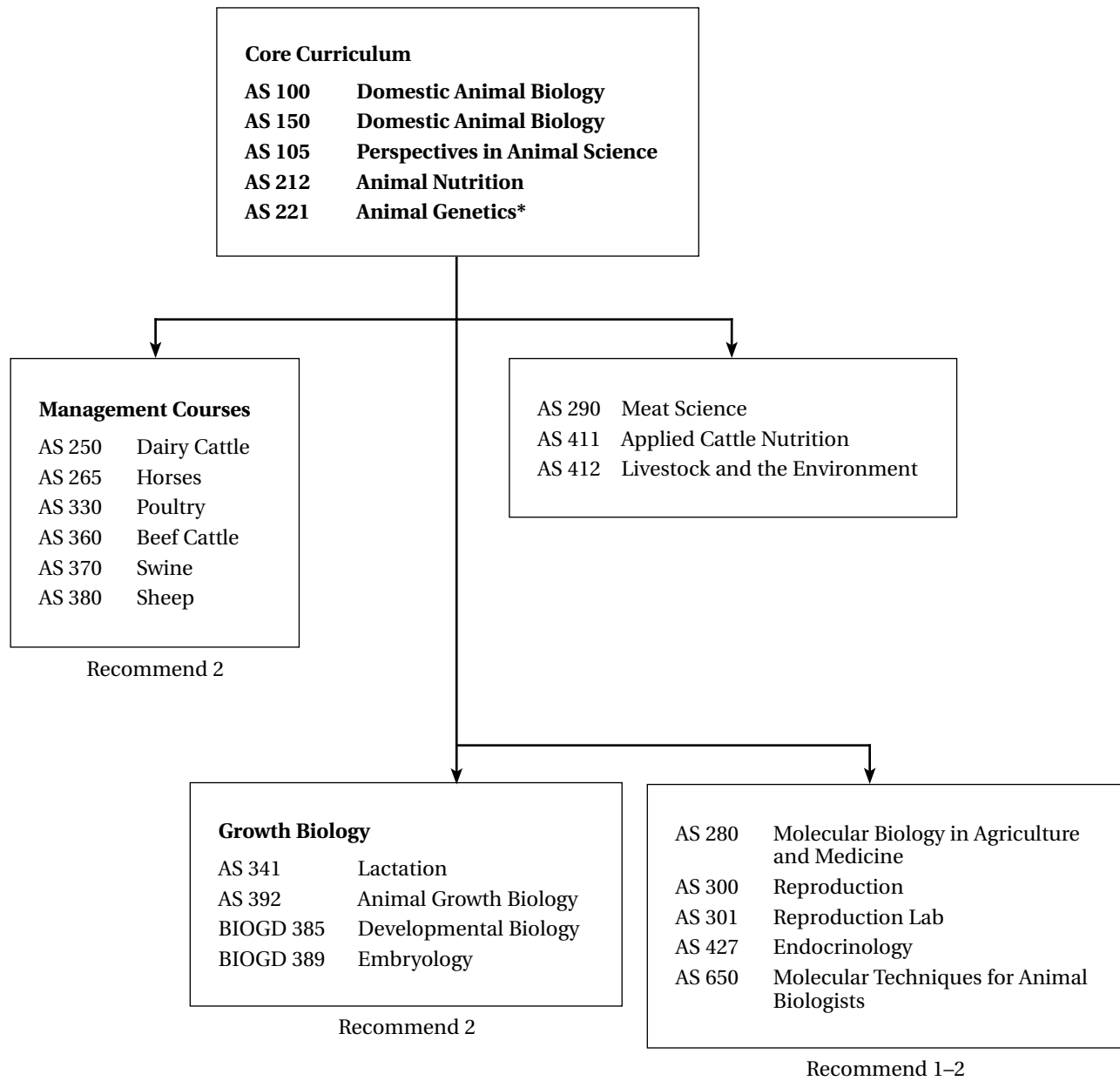


*or BIOGD 281—some medical schools require

IV. Genetics Pathway

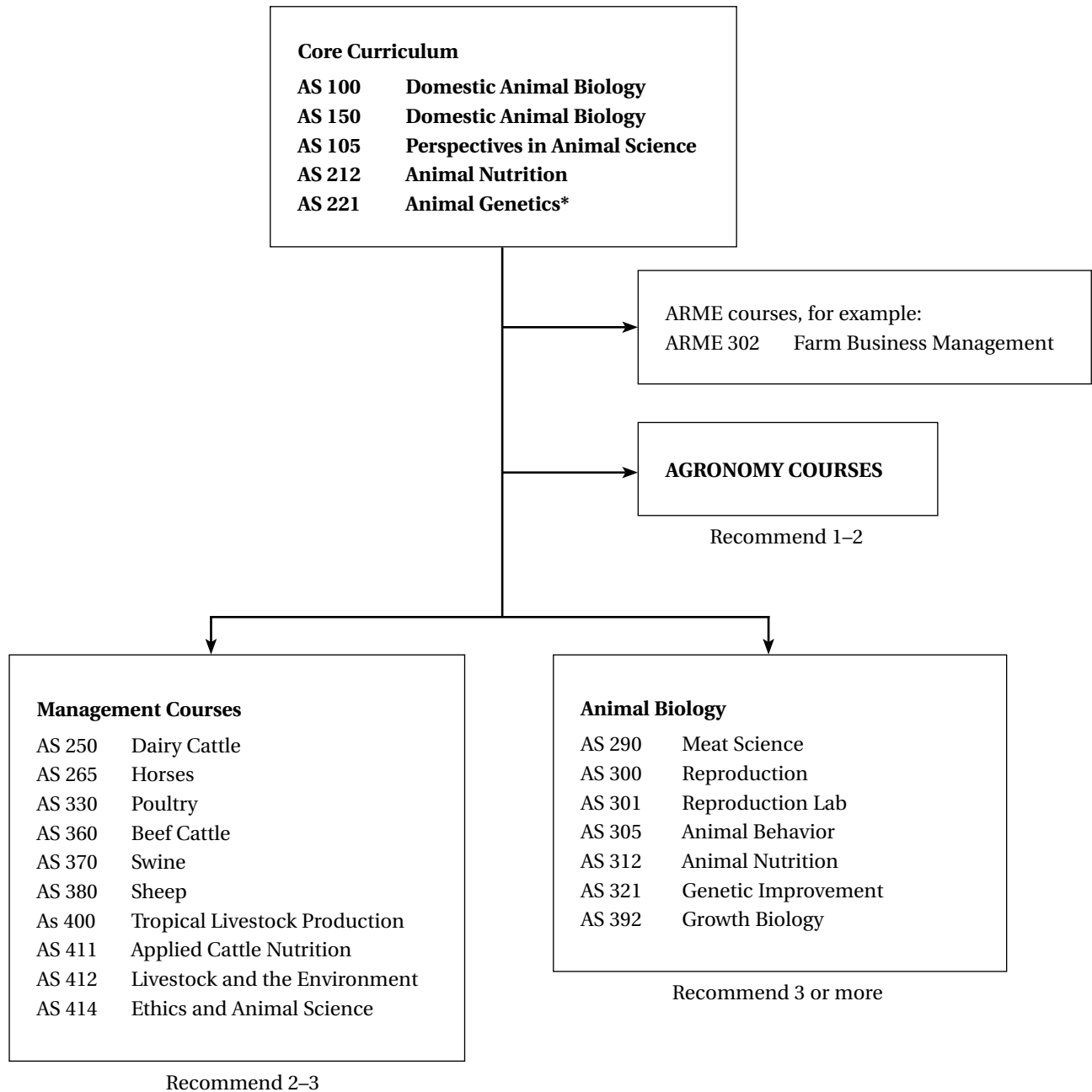


V. Growth and Development Pathway



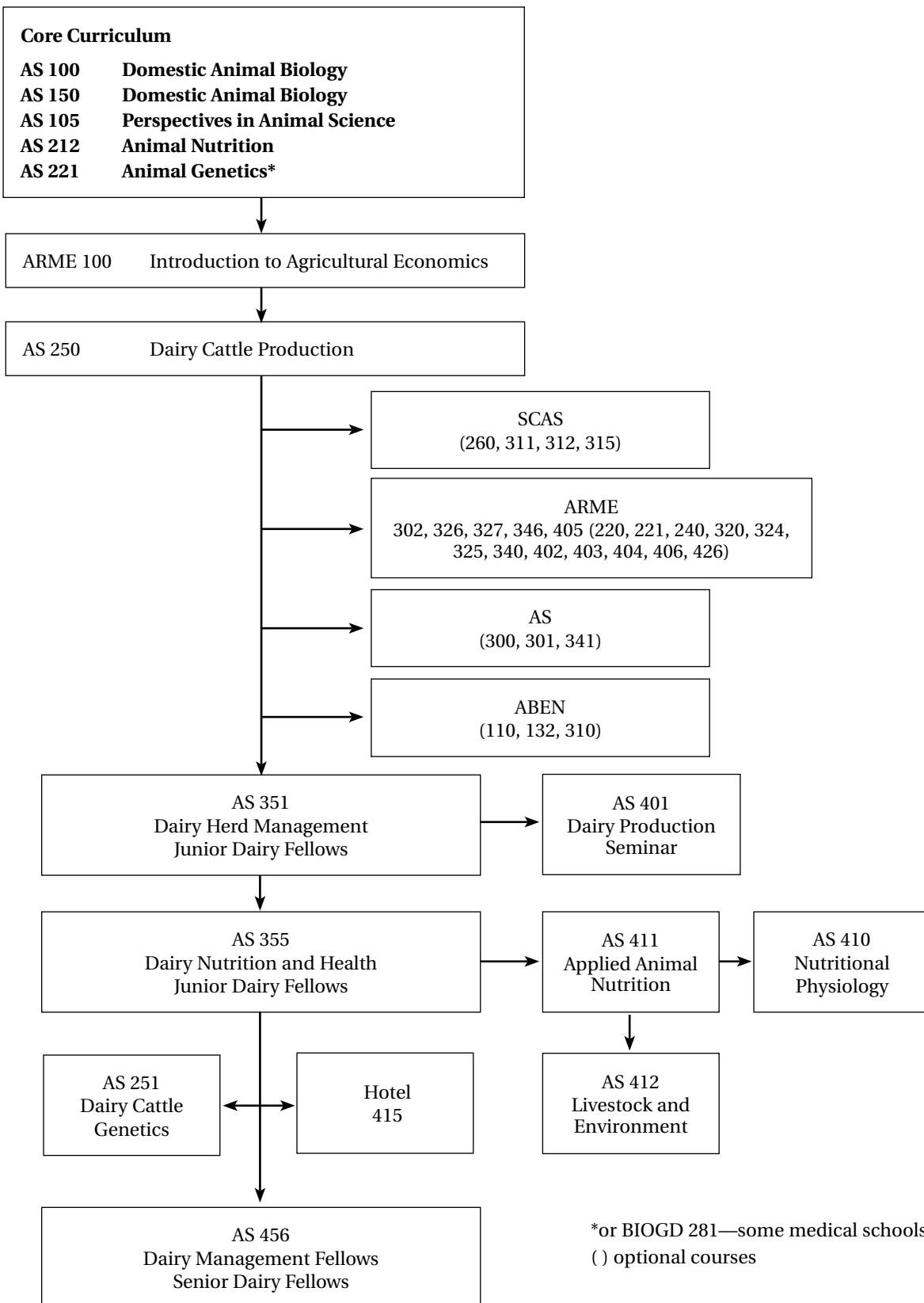
*or BIOGD 281—some medical schools require

VI. Livestock/Poultry Management Pathway



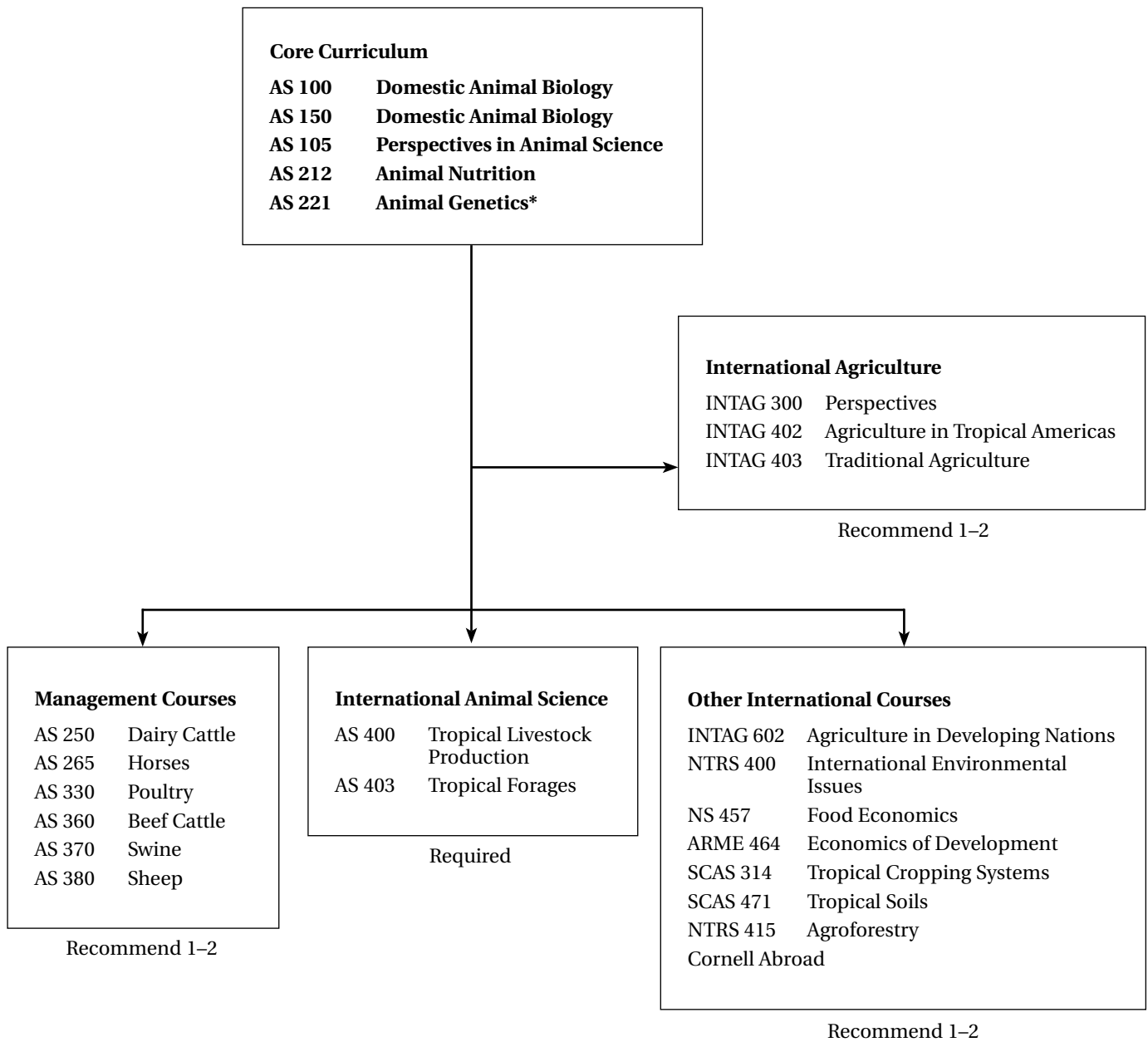
*or BIOGD 281—some medical schools require

VII. Dairy Cattle Management Pathway



*or BIOGD 281—some medical schools require
() optional courses

VIII. International Agriculture Pathway



*or BIOGD 281—some medical schools require

Appendix 4. Recollections of R. J. Young as Chairman of the Department of Animal Science from 1976 to 1983

In the early summer of 1976, Keith Kennedy (dean of CALS) and Dave Call (director of extension) came to my office in Rice Hall where I was chairman of the Department of Poultry Science. Keith and Dave stated they needed my help and asked if I would be willing to move to Morrison Hall as chairman of the Department of Animal Science.

They went on to explain that there was a major division within the faculty in Animal Science. They said that they could not select an internal faculty member because of this division and they could not go outside the university because it would take a new chairman too long to learn the “red tape” of the college and at the same time solve the problem within the faculty of Animal Science.

At Dean Kennedy’s suggestion I met with small groups of faculty. As I walked back to Rice Hall I realized I had not learned what I needed because I had been mostly quizzed by the faculty on my background. At my request Keith arranged a second set of meetings, and this time I asked the questions. Basically I was interested in knowing what the faculty wanted and whether they would work with me as chairman to achieve these goals. After a lengthy deliberation I told Keith I would take the position. I wanted to keep my appointment in Poultry Science, but Keith said no, I had to make a complete break, which meant giving up my research program and graduate students.

In the fall of 1976 I moved to Morrison Hall. I decided to use the same procedure that had been used by Herb Bruckner, the former chairman, and myself in Poultry Science, namely, to have a department faculty meeting every two weeks. This was not acceptable to the faculty in Animal Science, who felt it was too frequent. At the most they would accept a meeting once a month and for only one hour. I agreed but told them I needed faculty input about departmental activities more often than once a month.

Therefore, I formed an advisory committee with representatives from each faculty level (e.g., professor, associate professor, and assistant professor); a representative from each of Animal Breeding, Animal Nutrition, Physiology, Management, and Meat Science; and one from each of teaching, research, and extension. This group was to meet with me every other week for one hour in between faculty meetings. The purpose was to get their opinions on various issues facing the department. To my surprise, about three months into the year I heard that an assistant professor viewed this group with suspicion, that he believed it was plotting against various members of the department. I immediately set up a rotation of how long

members would serve on the advisory committee and put this person on the committee. Some time later he told me that if he had known how much work I was asking him to do he would not have said anything. This group served for three or four years. Once the faculty started to discuss issues as a group I no longer felt the advisory committee was necessary. I had a great deal of trouble to get the faculty as a group to fully discuss various issues brought before them. When I asked their opinion on issues many said they would come to my office to give me their opinion, another reason why the advisory committee was necessary.

After about two years as the department chairman, in a faculty meeting as I was going around the group asking each person's opinion on an issue, to my surprise for the first time since joining the department, each member gave his or her opinion on the issue before the group. I was elated and complimented the group and told them that the department was back on track and we were on our way to becoming the best animal science department in the country.

The agreement with Dean Kennedy when I took the position was that I would have complete control of all faculty salary adjustments. I, therefore, told the faculty that no more across-the-board salary increases would be made and that all adjustments would be based on their performance. I sat in on their classes, studied the student evaluations, and looked at their teaching load and numbers of students in their classes. I read their research papers and tried to get an understanding of their extension activities. After about six months I felt I knew the faculty quite well. I told the faculty that there were seven members who needed to improve their performance significantly and that they would not receive salary increases until this occurred. Within the next year there were seven retirements, which gave the department the opportunity to hire seven new members. We then set up search committees and advertised. Within the next two years we were able to hire seven new people. In each case these were our first choice, excellent young people who were well trained and energetic.

During the first few years the T&R Center was a major concern, particularly the dairy unit. The personnel were unhappy and morale was poor. I started meeting with them about once a month. Although I became aware of problems and tried to solve them, I felt I was only putting salve on a poor situation. When the faculty member in charge retired I asked Barth Mapes to take charge, to move his office to the T&R offices, and to let everyone know that he had a direct phone line to my office. I tried to get out there at least once a month to meet with the group and to talk with the employees as I walked through the barns. I also asked each faculty member conducting research with the dairy cows to meet with the personnel that worked with the cows on his experiment, to tell the group the results. In addition, the farm manager from the north country was moved to the dairy unit when the north country project was closed.

It was a surprise to learn that the farm equipment had not been updated to reflect the increase in acreage and the increased tonnage of feed material necessary to feed the larger number of cattle and sheep. I, therefore, set up a budget system for the crops group and told them to modernize their equipment.

Shortly after moving to Morrison Hall I asked the accounting office to give me the budget for the current fiscal year. I was told that there was no budget. If bills came in for the department they just paid them. Then they added the department was \$150,000 in debt. There was no state money, no college fund, only the research funds in Hatch and grants. It was with heavy heart that I went to see Dean Kennedy.

I am very appreciative of Keith Kennedy's support in those early years, both moral support and in this case the funds he provided to get the department out of debt. This led immediately to my setting up a budget process for every activity in the department. Each faculty member was asked to give me a budget showing their sources of support and their needs. To one young faculty member this sounded like a lot of work. I told him it made it easy for me: his budget allocation from department funds would be zero. That concept made him feel that it was indeed worthwhile.

The extension program was harder for me to evaluate. I decided to establish an advisory group of producers and industry representatives. The faculty gave me names of people who represented the dairy, beef, sheep, and swine producers as well as extension and industry people. From this list I asked about 20 people if they would meet once a year to talk about their needs. At the first meeting in Morrison Hall I was immediately aware of a deep anger in the group. At noon I asked the faculty not to sit in on the afternoon meeting. I then asked the group to list their immediate needs. These were listed on the board. From a list of some 40 items they were asked to select seven items that they felt were the most important. After considerable debate they identified seven problems that needed attention.

This list was presented to the faculty, and assignments were made with the understanding that these problems would be researched and reported on at the next year's meeting. The following year a report was given on the results of research on these problems. However, one of the problems required more time and the group was told why. The result was a complete turnaround on how the advisory council felt about the department. Another group of seven items was identified and this went on for several years.

I continue to be impressed by the innovation of the faculty not only in research and teaching but also in the willingness of nonextension faculty to participate in extension programs. For example, extension meetings were set up across the state at which producers and industry people would attend an afternoon and evening session. Here several faculty would present talks on the latest findings that could be applied to animal production.

Various departments in CALS, including Animal Science, had a program in the north country in applied science. For the plant sciences this went well. However, the dairy project ran into trouble. There was a dairy barn arrangement that permitted making comparisons of feeding programs on dairy cow production. However, when the manager of the farm unit saw that one feeding program was getting higher production than another he would change all of the cows to the higher producing regime before all the data could be collected. This plus some other problems resulted in our decision to close the dairy project. I attended that final meeting one very cold day in January and that evening attended a North Country Dairy Producers meeting in another city about one hour away by air. It was so cold that the pilot went to the airport every hour to warm up the engine. When we left, the airport was closed but it was a bright moonlit night. We took off from the dark runway and the pilot put the plane in maximum climb to about 8,000 feet before leveling off for Ithaca. It reminded me of some of my night flying as a navigator in the Canadian Air Force in World War II. The meeting was another one where I took public abuse because it was perceived that the Animal Science Department was

not helping the dairy producers with the solutions of their problems. Fortunately, it was shortly after this early meeting that through the faculty efforts this perception disappeared.

In 1983 a retirement incentive program was offered by New York State and I decided to accept. The department was functioning well, and there were a couple of people who I felt could take on the chairmanship. Therefore, I felt my job was finished.

Photographs on cover (second from top and sixth from top) and on pages 42 (bottom), 61 (plaque), 87, 89, and 90 (top) by Charles Harrington; those on pages 24, 25 (top), 81, and 88 by University Photography; those on pages 4 (Visek), 6 (Coppock), 7 (Natzke), and 20 (Van Demark) from Rare and Manuscript Collections, Kroch Library; all others, many of unknown origin, from Animal Science Department files.

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