

Boy Scouts of America and education. Although this biography focuses on Hiram Lasher as an individual, it also serves to document, at least in part, the history of his several business enterprises, which are inseparable from any discussion of his career.

The Early Years. Hiram Nelson Lasher was born on February 8, 1920, during a blizzard, in his parent's farmhouse in the small rural town of Catskill, NY, located on the west bank of the Hudson River about 100 miles north of New York City. His mother, Elizabeth Esther Palmer Lasher, owned a 300-acre farm and made a living by raising a variety of livestock species and assorted cash crops. His mother was born in Catskill in 1896, the daughter of Hiram and Alice Amelia Story Palmer. Elizabeth graduated from New York State Teachers College at Albany and was a teacher and principal at Rowena School at Palenville for 19 years. She died in 1977. Hiram's father, Nelson Frederick Lasher, was born on Sunset Hill Farm, Catskill. He took short courses at Cornell University and served in World War I.

His siblings included a brother, William H. Lasher (1921-1999), and a sister, Mary Alice (1923 -). Hiram and his siblings were reared on the family farm in Catskill. The farm was named "Sunrise" because his fraternal grandfather's farm on the other side of the hill was named Sunset Hill Farm. Sunrise Farm played a large role in Hiram's youth and later life. At this writing, it is still operated by the Lasher family and the original farmhouse still exists, serving as an office and residence for Evelyn Lasher, widow of William H. Lasher.

Hiram's father left the family following an amicable separation when Hiram was about 15 years old. The rest of the family remained to continue the farm operation. Hiram's brother, William, a year younger than Hiram, took over management of the farm with guidance from his mother, Elizabeth, and with help from Hiram. The choice of William was obvious, according to Hiram, as Hiram was suffering from asthma at the time and already had made a personal commitment to a professional career in veterinary medicine. At that time the farm operations consisted of a dozen milk cows, one team of work horses, and a few hundred Harco Orchards Rhode Island Red chickens. The farm crops produced for sale included sweet corn, tomatoes, eggs and milk, as well as timothy and alfalfa hay. This was a precarious economic period, with the depression in full swing and the family livelihood in the hands of Elizabeth and three young children. It is a testament to the dedication and perseverance of this core family that the farm survived. It also created lifetime bonds between Hiram, his mother and his siblings.

To make ends meet, Elizabeth took in boarders from New York City during the summer. It was during this early period that Hiram developed the work ethic and dedication to completion of goals that were the cornerstone of his success later in life. He also developed good business instincts. For example, he describes the sale of over 4000 ears of sweet corn at a special premium to a restaurant associated with Chase National Bank in New York City for several weeks each summer. The siblings all shared a competitive passion for prizes at 4-H shows and according to his sister, Mary Alice, would pool their collective winnings at the various exhibitions to pay the taxes on the farm. Interestingly, being the best in 4-H competitions appeared to have significant financial implications for

the family. Perhaps this is where Hiram learned the value of money and embraced the idea of “being the best” as a way of life.

His sister, Mary Alice, confirmed that the three siblings were very close, both in age and in personal bonding. Their mother, Elizabeth, was the mainstay in the home. Elizabeth encouraged all of the children to be active in 4-H projects. Mary Alice focused on homemaking and won many awards for sewing projects and canning fruits and vegetables. There was plenty of teamwork in the family. Mary Alice describes a day when the three children decided to surprise their mother by canning tomatoes. Tomatoes were picked from the garden, an assembly line was established, and over 150 quarts were canned by the time their mother arrived home from work, to her total astonishment.

For eight years Hiram attended the one-room Bethel Ridge Elementary School, as his mother also had. To get there required a difficult uphill walk of 1 ¼ miles in all types of weather (but must have been easier coming home at night). There was but a single teacher, George Holmes. Hiram graduated in 1933.

Hiram had some difficulty in talking fluently from his earliest years, which was recognized by his elementary school teacher and others. Hiram also recognized his deficiency but did not make it a priority for improvement. As a result, he was reluctant throughout his career to give lectures or other presentations. Hiram also wore eye glasses from an early age.

Following elementary school he enrolled in Catskill High School, choosing the college entrance program. He was the first student from Bethel Ridge to go on to high school since his mother had, a generation before. His sister recalls Hiram as a very successful student, especially in Latin where he consistently earned top grades. He became active in 4-H programs. He was president of his junior class, an experience that he considered to be both enjoyable and successful, and served on the student council. He developed an interest in politics and campaigned for Alfred Landon and Frank Knox in the 1936 presidential election. Hiram lists his mother as one of his most influential teachers, with special skills in English grammar, Latin, French and mathematics, indicating that his education was amply supplemented by instruction at home. He graduated in the spring of 1937.

Hiram’s 4-H activities were a large part of his early life from the age of 10. One of his first projects involved the raising of a registered Jersey heifer, provided by his uncle, which was the beginning of a registered Jersey herd. More Jersey heifers followed and soon Hiram was showing his cows at local and state fairs, with uncommon success. He was even recruited for the 4-H judging team in dairy. However, Hiram claims that his brother, William, was even better in cattle showing. During his eight years in 4-H dairy work, Hiram became a certified milker and gained experience with pasteurization, which he wrote in 1938 “will help me greatly in order to reach my goal. My ambition is to be a successful veterinarian.”

After a year with dairy cattle, Hiram started his poultry career. While attending the Eastern States Exposition, he encountered Paul Berry in the poultry showroom. Berry, a poultryman from New Hampshire, was exhibiting White Wyandotte chickens. Hiram expressed interest in these birds, which he wrote were “the most beautiful birds I have ever seen.” Berry was duly impressed and subsequently provided a free setting of hatching eggs to Hiram in March 1932. Hiram, writing about this event 6 years later in a college essay recalls that the 12 “wonderful” chicks from this hatch became a passion, and individual names were given to each. “Johnny” and “Mary” were both shown at subsequent fairs over a period of several years. Eventually “Johnny” won many prizes including first prize at the State Fair and a purple ribbon at the New York Poultry Show at Madison Square Garden, which was a memorable event for Hiram. Some years later, Hiram still described “Johnny” in glowing terms, e.g., “Just picture him a minute - a large white bird with graceful curves!” Evocative terminology for a chicken – but Hiram was deeply sincere. 25 years later, Hiram immortalized two other chickens, George and Martha, in virus backpassage trials and chicken flying contests (see later), continuing the tradition of “naming” his special birds.

However, Hiram was not long in the poultry business before adversity struck. An outbreak of Bacillary White Diarrhea (later termed Pullorum Disease) depleted half of his 75-bird flock. Hiram often cites this event as a determining factor in his pivotal decision to become a poultry veterinarian. Hiram is quoted as saying, “I made up my mind at that time to become a poultry veterinarian and everything I’ve done professionally since that time has been centered on protecting the health of chickens.” How many persons have developed life careers from a decision made at the age of 11? Hiram tells this story often, although his age at this point of decision varies with the version.

Hiram also developed a large 4-H vegetable garden for two years, the produce of which garnered many prizes at subsequent fairs. He also gained experience with orchards and was on a 4-H apple judging team. He and his brother also planted 1000 white pine trees on his family farm as a reforestation project.

Hiram was active in religious activities, regularly attending Sunday School with his siblings, and was an officer in his Christian Endeavor group. Church was followed by Sunday dinner, which was always roast chicken.

Hiram’s family continued to occupy a place of importance in his life. He built a house for his mother at Sunrise Farms during his tenure as poultry pathologist in Delaware. His brother, William, operated the family farm that ultimately included a DHIA Holstein herd and a specific-pathogen-free (SPF) chicken operation (see later). His sister, Mary Alice, received a B.S. degree from Plattsburgh State Teachers College in home economics and a Masters degree from Oneonta, after which she taught home economics for many years. In later years, Hiram, William and their wives made many vacation trips together.

College years. Although his vision since childhood was to enroll at Cornell University and become a veterinarian, Hiram was temporarily sidetracked in his quest for admission to Cornell. Apparently his grades in the English portion of the New York State Regents

examinations were insufficient and his application was denied. Hiram explains that his many duties and interests left too little time for reading during his secondary school days.

However, Hiram was not about to be denied. The Rev. John Jacob van Heest, minister of The Kiskaton Dutch Reformed Church where the Lasher family had roots for many years, was instrumental in getting Hiram accepted to Houghton College in September 1937. The Christian College was located near Houghton, a small town in upstate New York southwest of Rochester. Of course, he chose a pre-veterinary curriculum with the intent of transferring to Cornell at the first opportunity. Again with the help of Rev. van Heest, Hiram got a job operating the College's first milk pasteurization facility. This opportunity was important as Hiram needed an income to pay for tuition and expenses. The class work agreed with him and he received *cum laude* recognition at the conclusion of his first semester. He applied again to Cornell and received his acceptance shortly thereafter, an event that his sister remembers was filled with much family pride, although Hiram did not even go out for a celebratory dinner.

In September 1938, Hiram enrolled in the New York State Veterinary College, a part of Cornell University located in Ithaca, NY. While at Cornell, he received training in poultry diseases from Drs. Levine, Hagen, Brunet, and Hofstad. He also participated in a project that resulted in the production of a chicken-propagated fowl pox vaccine, which Hiram considered to be the first vaccine he personally produced. Hiram studied avian diseases as a junior and a senior under E. Brunet and P.P. Levine, respectively. He remembers Dr. Levine as a good teacher with well organized and thorough class notes, and who was well respected for his research on coccidiosis. He also spent time learning necropsy techniques from Clem Angstrom and Mel Hofstad, a young graduate student from Iowa. (This probably was a more intensive exposure to poultry diseases than most veterinary students receive today.) Part of this time was "stolen" from the small animal clinic. In order to cover the expenses of attending Cornell, Hiram cared for the universities research animals through a federal work study program. He also cleaned rooms at the student housing complexes. Hiram rarely had time to return to the Catskill farm during the school year. When he did get a break to go home he would hitchhike, finding himself on several occasions walking in winter snow storms. He received his D.V.M. in 1942.

Back to the farm. Upon graduation, Hiram obtained a veterinary license in the State of New York by successfully passing a five day examination, four days written and one day practical. He then returned to his family farm in Catskill, NY to establish a private veterinary practice, with emphasis on poultry medicine. Shortly after graduation, Hiram scheduled a visit with Dr. C.A. Bottorff, a veterinarian with Lederle Laboratories in Pearl River, NY, just 75 miles from Catskill. Cab, as he was widely known, advised Hiram that he should gain field experience before launching into other areas of poultry medicine. This advice may have played a role in Hiram's decision to start his career "at home." Also, Lederle Laboratories did not have any jobs at that time. Looking back, it seems ironic that Hiram's later success in establishing Delaware Poultry Labs was a factor in Lederle's decision to discontinue manufacturing poultry vaccines. Had they hired him, Lederle would likely still be producing poultry biologics to this day.

World War II was ongoing at this time but asthma and poor eyesight made Hiram exempt from military service. Hiram was strongly influenced during this period by Clem Angstrom, who worked for the Cornell University diagnostic laboratory at Kingston, just 30 miles from Catskill. Hiram spent considerable time with Angstrom during periods when pullorum testing duties were light. He considered Angstrom as a great teacher and one who deserved considerable credit for his formal and informal education in poultry medicine.

During his first 5 years of practice, Hiram became actively involved in the program to eradicate *Salmonella pullorum* from chicken flocks. He personally tested more than a million chickens, at up to 3000 tests per day, from 50-60 poultry operations in the state using the rapid whole blood plate agglutination test. He noted that poultry disease workers in New England were advocating the tube agglutination test as the only reliable method, but Hiram demonstrated to his satisfaction that the rapid whole blood plate agglutination test was adequate when applied by qualified personnel. During this period, Gil Eddy, who provided a selection service as an employee of Salsbury Laboratories, helped Hiram become established as a blood tester, as the two jobs were done at the same time. Hiram also remembers performing physical examination on chickens to be selected, and rejecting those with ocular lesions of leukosis, now associated with Marek's disease.

Hiram contributed so significantly during this period to the regional eradication of *S. pullorum* that he started to realize that he was working himself out of a job. It was time to explore other employment opportunities. He noted an ad placed in the Journal of the American Veterinary Medical Association for a field poultry veterinarian in the state of Delaware. Hiram traveled to the Delaware Water Gap in Port Jervis, N.Y. to interview with H.R. Baker, a poultry microbiologist who had been with the University of Delaware but was now the state poultry pathologist. Baker apparently met him halfway. The rest is history. This indeed was a special time in the history of poultry medicine, as the first successful eradication program for an infectious poultry disease (pullorum) was launched and achieved an uncommon success. Those involved could rightfully feel a sense of pride and accomplishment.

A life partnership. The years in private practice offered an opportunity for some extracurricular activities. Hiram started breeding chickens at Sunrise Farms to improve layer performance and ultimately submitted a sample to the Farmingdale Egg Laying Contest. Private veterinary practice in Catskill also occasionally involved species other than chickens and on one occasion resulted in a lasting change in Hiram's life. In 1944, Hiram met Bertha Mae Van Vlierden during a farm call to examine her horse. Hiram's account of this seminal event follows: "I asked her father (Roy) if I could talk to his daughter. He replied alright. However, the daughter turned out to be Betty who was not interested as she had a friend in the military service. However, she replied she had a twin sister, Bertha. This materialized into a long friendship. I tutored Bertha in science and math before she matriculated to Kingston City Hospital, Kingston, N.Y. Upon

graduation with a R.N. degree, we were married on December 12th 1948 at Centerville Methodist Church (shortly after Hiram began employment with the State of Delaware). Bertha joined me in my small beach cottage in Bethany Beach, Delaware. It was not insulated and the winter was very cold. The following spring, I purchased the then-closed Indian River Hatchery building with funds saved from my five-year veterinary practice in Catskill. We next moved to an apartment upstairs at Delaware Poultry Labs where we resided for 14 years. Five children later, in 1965, we moved again into a large Georgia-marble house with our large family. Of special note, Betty, now 80 years of age, had no children, while Bertha and I had seven, with 2 sets of twins back-to-back. What a difference "no children vs. seven". What a difference in life's responsibilities. This was indeed a very good fortune."

Hiram gave Bertha a hope chest before she went to Kingston, N.Y. Being of old German stock, her mother told her she was too young to accept this. Hiram reports no mother-in-law problems at any time later.

Their seven children were Steven Hiram, Douglas Nelson, Sandra Elizabeth, Hiram Dennis, Denise Helen, Michael Clark, and Michelle Betty. Hiram and Bertha's house was surely full. Daughter Denise later worked in the poultry industry where she was known for a time as the "Paramount Pullet." Sandra Lasher worked with her father in the construction of Intercontinental Biologics, Inc. and later at Lasher Associates where she was in charge of office services. Dennis, Michael and Michelle also worked at various times with their father's business.

Upward and onward – employment by the State of Delaware. Hiram relocated in January 1948 to the town of Frankford, Delaware, the heartland of Delaware's fledgling but rapidly expanding broiler industry. His title was assistant state poultry pathologist for Sussex County reporting to the Delaware State Board of Agriculture. H.R. Baker, as state poultry pathologist, was his immediate supervisor. Baker was well known in the poultry disease field, bearing responsibility for the NPIP programs in Delaware. He commonly attended the NECAD meeting that was considered the premier poultry disease meeting. Baker gave Hiram full responsibility for Sussex County, and did not try to manage too closely, which Hiram appreciated. During the succeeding 28-month period, Hiram provided field diagnostic and consulting services to local broiler growers. He had always been interested in diagnostics and found this a way to improve his skills and knowledge of broiler health problems. This time was a period of intense involvement with the industry. Hiram averaged 8-10 farm calls a day for six days a week. He also did diagnostic work, examining intestinal scrapings for coccidia under the microscope and taking specimens for bacterial and viral isolations.

During this time Hiram expanded his network of contacts in the poultry health industry. He recalls having lunch with Dr. Joe E. Salsbury a couple of times. Hiram's first meeting with Salsbury, a prominent poultry veterinarian and biologics producer in Iowa, was by chance when Hiram was hitchhiking from Cornell University to Catskill and was picked up by John Salsbury (son of Joe) and Hugh Lightbody, a second cousin, on the Cherry Valley Turnpike in 1938.

His nomination for the Order of the First State, the highest honor that a governor may bestow, sets out the situation Hiram faced: “With the rapid growth of the commercial broiler industry, raising thousands of birds in close confinement to each other with flocks totaling in the millions of chickens of varying ages in a relatively small geographic area, the severity and frequency of poultry diseases and their rapid spread from flock to flock was appalling. This resulted in staggering financial losses, and individual growers were dropping out of production at an increasing rate, being unwilling and indeed often unable to withstand the losses that had become almost the rule rather than the exception for individual poultry growers. Further complicating the dismal economic outlook engendered by disease losses was the advent of major competition from new production areas in the South and Southwest. Being newer areas, disease was less prevalent than in Delmarva, and with a more moderate climate production costs in general were substantially lower. The very survival of the Delaware poultry industry was in doubt”.

In 1948, the Hon. Curtis W. Steen, a powerful State Senator and a large broiler producer, joined with Hiram to start Del-Mar-Va Poultry Laboratories. Their principal business was repackaging sulfaquinoxilin, purchased on the commercial market from Merck, into a liquid format suitable for drinking water use. This business was terminated by 1950 but was Hiram’s first venture into the commercial world of poultry pharmaceuticals.

By 1950, the broiler industry in Delaware was experiencing major losses from Newcastle disease (velogenic, California-type), infectious bronchitis, laryngotracheitis, fowl cholera and fowl typhoid. There seemed to be an especially urgent demand for a better vaccine to control Newcastle disease as the current vaccines did not provide sufficient protection. Hiram was approached by a couple of feed salesmen to consider the possibility of initiating a vaccine production company. William H. Mitchell subsequently introduced Hiram to Dr. Frances Mullen of Shen Laboratories in Harrisonburg, W. Virginia where he subsequently visited and observed techniques used in vaccine production. Mullen was a charter member of AAAP and was director of the Virginia Regional Laboratory in Harrisonburg for many years. Mullen had started a small lab to produce frozen B-1 strain Newcastle disease vaccine for in-state poultry producers. As the germ of this idea grew, Hiram consulted with Dr. C.A. Bottorff of Lederle Laboratories and Dr. Tevis Goldhaft of Vineland Laboratories, persons well established in the vaccine business. Based on his experience with sulfa drug production, experience at Shen Labs, advice received and his vision that a better source of poultry vaccines was needed, Hiram was ready for yet another chapter in his career. Hiram also writes that he recognized serious limitations in the ability of a poultry diagnostician to address the prevailing disease problems and concluded that his abilities to make a difference would be better utilized by the establishment of a vaccine company. History shows this assumption was correct.

Starting a vaccine business. It began in May 1950 with an agreement between Hiram and four others, Francis Mullen (see above), William H. Mitchell, Clarence Gassaway and Victor Keen, to start a vaccine business, which was named Delaware Poultry Laboratories (DPL). Hiram was president and in charge of operations. The objectives

were to produce high quality but moderately priced poultry vaccines and also provide free diagnostic and flock management advice.

The first product in 1950 was a whole-embryo frozen Newcastle vaccine. The next year Hiram read a paper by Prier and Alberts, and switched to a glycerinated product using infected amnio-allantoic fluids. Soon after, the product was lyophilized, using equipment supplied by the F.J. Stokes Co. It was immediately evident that Hiram was quick to adopt new technologies and was working hard to design the best possible products.

Hiram and DPL soon were under pressure from federally licensed vaccine companies. DPL was depicted in *The Poultryman*, published in Vineland, N.J., as bootleggers. This resulted in a contact by veterinarians from the USDA Bureau of Animal Industry (BAI). The BAI ultimately offered Hiram an arrangement whereby DPL could convert to a federal establishment without any interruption in marketing. Dr. John Hejl, Director of Veterinary Biologics and Dr. Arthur Teljohn, Associate Director of Field Inspection, visited Hiram to finalize the licensing. Hiram recalls finalizing the arrangement over dinner and a class D baseball game in Salisbury, MD, an event of major importance to the future of DPL.

In 1952, DPL received its federal license to manufacture and distribute poultry vaccines throughout the United States. The first out-of-state customers were large broiler operators in the Southeast and Southwest. Within two years DPL had acquired a national reputation as the leader in the field of poultry biologics. At same time, DPL cut vaccine costs to producers by half. This feat was accomplished by increased production efficiency and by strict adherence to uniform standards of both cost and quality control. In addition to price reductions, with the consistently high titers of DPL products, the growers soon learned that they could safely vaccinate more birds with DPL vaccines than with the same amount of competitive products, and achieve just as high immunity levels. The first vaccine was exported in 1956, to the Far East. Brazil was also a good market.

Also in 1952, Francis Mullen left the company, finding the need to comply with federal requirements too onerous.

The company became committed to 3 principles: to produce good products, to develop new or improved products through research, and to provide technical and service support. The products were indeed good. Hiram recalls with pride that DPL had no vaccine serials rejected by USDA for any reason at any time – an unprecedented achievement (in Hiram's opinion). Customers liked these products and the company ultimately garnered up to 20% of the total United States poultry vaccine market and 50% of the broiler vaccine market. The company established long-term cooperative agreements with several scientists at major poultry research centers. The company established diagnostic laboratories in Millsboro and Arkansas, which employed up to 4 veterinarians. This service was helpful in providing access to new disease strains derived from field outbreaks, some of which provided the material for new vaccines.

Hiram organized dinner meetings to discuss poultry disease topics and, according to Hiram, these meetings eventually became the basis for the annual National Meeting on Poultry Health and Processing, sponsored by Delmarva Poultry Industries, Inc.

As president, Hiram provided the vision, supervised operations and made all the critical decisions. It seemed to work well. In the words of Steve Hitchner, Hiram “had the propensity for knowing what was occurring in the field, in the research laboratories, and in the regulatory offices and, as a result, moved decisively when the need arose. His dedication to providing quality vaccines gained him the respect of his competitors.” Hiram had successfully launched an enterprise that would be a major player in the world’s poultry vaccine business for many years. This story continues as DPL became Sterwin Laboratories (see below).

Hiram also became acquainted at this time with Dr. Fred Beaudette, a prominent poultry virologist who was on the faculty of Rutgers University and apparently had a business agreement with Vineland Laboratories, a nearby competitor in the poultry vaccine business. Hiram recalls rumors that Beaudette would spend Wednesdays at Vineland to assist with the inoculation and harvesting of infectious laryngotracheitis virus from embryonated eggs using a technique that Hiram considered to be inferior. Beaudette, in his dogmatic style, also championed the LaSota strain of Newcastle disease virus over the B-1 strain, isolated by Hitchner from Beaudette’s material.

Sunrise Farms and the SPF egg business. At the same time that Hiram was launching DPL on its classic journey, he was contributing to the establishment of another business enterprise back on the family farm. For a number of years, Hiram’s brother, William H. Lasher, had operated Sunrise Farms successfully, mainly as a dairy farm. Chickens had always been part of the livestock enterprise, producing eggs for the New York and other local markets.

It was already well known that a variety of avian pathogens could be vertically transmitted via the egg. Of these, *Salmonella pullorum* was among the most prominent. Hiram, with considerable foresight, recognized that disease-free eggs would be in demand for vaccine production. Moreover, it seemed that with sufficient environmental controls and rigorous testing, chickens could be raised free of at least selected diseases.

Thus, in 1950, Hiram proceeded to help his brother, William Lasher, establish the first environmentally controlled, windowless facility for producing SPF hatching eggs. Initially, the chickens were maintained pullorum-typhoid free, a condition that became a requirement in 1953 for all eggs used for poultry vaccines. The original pullorum testing was conducted by Andrew Ritter at Hudson, NY but later testing was done by DPL and other laboratories. Initially, all the production was utilized by DPL but gradually other customers were obtained. In the 1960’s, the farm was converted from windowless to filtered-air positive-pressure (FAPP) housing with the help of Harold White of the University of Georgia utilizing technology recently developed by Dr. Charlie Beard. The

testing program expanded with regulatory requirements and the advent of new technologies, and now involves assays for 29 separate pathogens.

In the early 1980's, Hiram imported SPF chickens from the Intervet flock in the Netherlands, forming the basis of the breeding program for many years thereafter.

Hiram has served as a business and technical consultant to Sunrise Farms to the present time. At the time of this writing, under the supervision of his niece, Christine Lasher Jones, Sunrise Farms is one of the largest producers of SPF eggs for research and biologics enterprises worldwide, with 10 environmentally-controlled FAPP houses, each housing 8000 chickens.

Integration of the concepts of vaccine production and SPF substrates required an exceptional vision, especially considering the limited understanding of infectious disease and the lack of regulatory precedents for veterinary biologics in 1950.

From DPL to Sterwin Laboratories. DPL was a successful company, already prominent and positioned to take a leadership role in poultry biologics. However, in 1959, Hiram was approached by the firm Mergers and Acquisitions from Philadelphia that had two clients interested in purchasing DPL. Hiram's partners in DPL were not actively involved in the business and supported the idea of selling out. The two competing companies were Plough Corporation and Sterling Drug. Sterling was selected because it had an active stake in poultry biologicals through Dorn and Mitchell, which produced Cocci Vac®, the live coccidiosis vaccine developed by Alan Edgar. Plough lacked this poultry orientation, but soon Plough was acquired by Schering, who also owned American Scientific Laboratories, a strong producer of poultry biologics. However, the die was cast, an agreement was reached, and DPL became a subsidiary of Sterling Drug, Inc., The name, DPL, was retained and the company continued to be managed by Hiram Lasher, who was designated vice president. He reported to corporate headquarters in New York.

Hiram reflected in later years that he regretted selling out, probably because he sacrificed some of the autonomy which he thoroughly enjoyed during the formative years of DPL. There were also management problems that would be encountered later (and are discussed separately). This was clearly one of the major decision points in his career.

DPL continued full steam ahead, but the name of the company changed in 1968. In that year Sterling Drug, Inc. consolidated the animal drug and biologics businesses previously conducted by DPL Inc., Dorn & Mitchell, Inc., and the Animal Health Division of Sterwin Chemicals Inc. into a single unit under the name Sterwin Laboratories, Inc. The headquarters for the new unit was moved from New York to Millsboro, Delaware in 1970 with Hiram Lasher as president. In 1973, Winthrop Products, Inc. was formed to distribute Sterwin products to 53 foreign countries. By 1978, exports accounted for 15% of production and the company had garnered about 40% of the vaccine market in the United States. By 1983, exports had soared to 20% of production. This was a period of

high sales and profits for Sterwin, according to Hiram, and was accompanied by a rise to the number one ranking among poultry vaccine companies.

From the very first, Hiram actively promoted a positive relationship with the United States Department of Agriculture (USDA), which had the authority to license and assure quality of poultry vaccines. The attention paid to product quality probably elevated the stature of DPL/Sterwin with USDA. For example, in 1974, of 5 companies that submitted B1 Newcastle vaccine for titration by NVSL, Sterwin was the only one to have all 10 serials exceed the minimum required titer. Ultimately USDA selected Sterwin to expand two infectious bronchitis seed viruses for distribution to licensed producers, and also to produce an international reference standard for herpesvirus of turkey (HVT) vaccine for Marek's disease (MD).

Significant achievements by DPL/Sterwin. By 1979, Hiram could reflect on 29 years of successful vaccine company management with considerable pride. The company was riding high, was competitive and profitable, and had a number of accomplishments to its credit. Although the company had developed into a major player in the poultry vaccine business and employed a number of qualified scientists and managers, Hiram continued to serve as the principal decision maker and was the catalyst for progress. The company was credited with the first commercial introduction of many vaccines, including infectious bursal disease, tenosynovitis, JMK bronchitis, Holland strain bronchitis, Marek's disease, improved Newcastle and others. He introduced cell culture substrates to DPL in 1964, a technology that formed the basis of future vaccines for fowl pox, laryngotracheitis and Marek's disease. A few individual accomplishments are described here, mainly to provide a sense of the role played by the company over the years.

Recognition of infectious bursal disease (IBD). DPL directly contributed to the discovery of this important disease. It was in 1957 that Dr. Albert Cosgrove, a diagnostic veterinarian employed by DPL, first observed "something new and different" from a broiler flock in the town of Gumboro, Delaware. This launched a flurry of activity which soon confirmed that this was a new disease and prompted empirical attempts at control. Cosgrove published his seminal observation in 1962 after joining L&M Laboratories. Hiram did not play a major role in this story until later, when vaccines started to become available.

In 1966, Hiram was part of an informal meeting at the 10th Annual Poultry Health and Management Short Course at Clemson University where he, Alan Edgar, and several others essentially agreed on "infectious bursal disease" as the standard nomenclature for the disease. Later on the same day, Hiram met with Drs. I.M. Moulthrop and Gerald Peacock of USDA over dinner. Peacock thereby gained a deeper understanding of the urgency for a federally licensed vaccine. In addition, general guidelines for licensing were discussed.

First licensed live IBD vaccine. A slightly attenuated strain of IBD virus was isolated by Dr. I.M. Moulthrop of the University of Maryland who, with Carol Snedeker-Wills, developed and patented the strain. Hiram licensed this strain and worked with Moulthrop

to commercialize the vaccine. The resulting “Bursa-Vac®” vaccine, developed in 1968, was the first IBD vaccine to receive a federal license. It was widely used in the United States and other countries for many years to provide protection against IBD, which has become one of the top challenges faced by commercial poultry production worldwide. It is still marketed worldwide as a booster vaccine. The story behind the licensing of Bursa-Vac® by DPL and the ultimate replacement of Edgar’s virulent, bursal-derived vaccine is described in a review by Lasher and Davis (Avian Dis. 41:11-19, 1997).

Licensing of MD vaccine. The development and licensing of a vaccine for MD in 1972 was a remarkable and long anticipated achievement for the poultry industry. For many years, the poultry industry was waiting with anticipation for any indication that a vaccine would be possible. Hiram cites a trip to the Houghton Poultry Research Station in England in August 1968 to discuss attenuated MD vaccine strains with Drs. Peter Biggs and Tony Churchill. Feeling that importation of the English vaccine would not be permitted, Hiram immediately commenced work on isolation of mild strains and attenuation of field strains from the US. However, when characteristics of the herpesvirus of turkeys (HVT), along with preliminary indication of its efficacy as a vaccine announced in June, 1969 by USDA-ARS workers in East Lansing, Hiram immediately recognized that opportunity was in hand and jumped on the new bandwagon. Sterwin was one of three vaccine companies to receive the first samples of the seed virus from USDA-ARS on July 29, 1969 (the others were Merck and Salsbury Labs). The interval between the report on HVT by USDA-ARS in Orono, ME and the receipt of seed virus by Sterwin was a mere 36 days. Hiram, assuming that the East Lansing laboratory would be too slow, immediately started field trials in cooperation with the University of Delaware to obtain data needed for licensing. Formal approvals were not obtained from APHIS and Hiram recalls Bob Price, regulatory official at APHIS, telling him to “let me know next time.” This is the way Hiram chose to operate. Results from these trials showed a dramatic 10-fold improvement in MD condemnation rates, similar to the data from trials conducted by USDA-ARS and others. These data along with solid contacts with the USDA regulatory authorities contributed to the expedited federal approval of the herpesvirus of turkeys (HVT) vaccine for Marek’s disease. A federal license was issued to Sterwin on March 1, 1971, only 20 months after seed virus was received. Sterwin decided to grow HVT in chicken embryo cells (rather than duck) and to use a shipping container used by the dairy industry for semen. These decisions, plus the established marketing system and contacts with the poultry industry, allowed Sterwin to gain a competitive advantage over other companies, even including the prestigious Merck Institute which was renowned for its work on human vaccines (but had no experience with poultry vaccines). A letter written in 1996 by Dr. Maurice Hilleman, renowned virologist at Merck, about Merck’s entry into the Marek’s vaccine business in 1970 made reference to a veterinary company (Sterwin) “that had done little or no research and thought it was humorous to boast that the ‘world’s greatest research organization (Merck)’ was working on its (Sterwin’s) behalf.” Hiram confirms that this was true. In this battle, Sterwin prospered and Merck went out of the Marek’s vaccine business.

Avian encephalomyelitis (AE) vaccine. Hiram recalls asking Dr. Bruce Calnek for the vaccine strain in an elevator. Bruce remembers the event more distinctly. The request occurred during the 1959 AVMA meeting in Kansas City. Bruce was indeed in an elevator when a man he did not know peered closely at his name badge and immediately put a finger in his chest and said “Calnek....you need to send me that virus.” It was Bruce’s first encounter with Hiram who made his demand after reading Bruce’s name on his badge. Calnek never forgot this direct approach. AE vaccine became another profitable product for DPL and Sterwin.

Improved bronchitis vaccine. A 1963 news release documents a conference hosted by the Agricultural Research Service (ARS) on the advantage of a polyvalent bronchitis vaccine containing both Massachusetts and Connecticut strains. DPL reported on two years of success with such a combination bronchitis vaccine coupled with Newcastle, the first such vaccine to receive a federal license.

Improved Newcastle disease vaccine. In 1976, the LaSota strain of Newcastle disease virus was back-passage through chickens to improve transmissibility for increased efficacy when administered by drinking water. This technique was based on research reported by Allan, from Weybridge, U.K. This was the first time this technique had been used in the US and resulted in a vaccine with improved properties. Hiram used for this study SPF chickens, two of which were ultimately rescued by Hiram’s 13-year-old twins, Michael and Michelle. They became family pets. George and Martha lived long lives and competed successfully in various competitions (see later).

JMK strain bronchitis. This product was introduced in 1972 to control disease on Delmarva and in Pennsylvania. The variant JMK strain, isolated by Dr. Roland Winterfield, was prevalent in the Delmarva area and responsible for many outbreaks. The virus was attenuated by Hiram using alternate heat treatment and combined with traditional bronchitis and Newcastle strains. Sterwin was the sole provider of the JMK strain for many years which represented a lucrative niche market.

Holland strain bronchitis. Sterwin was appointed by APHIS to produce master seeds of H-52 and H-120 to be deposited at the USDA testing laboratory in Ames, Iowa for distribution by APHIS to other manufacturers. These expanded stocks were the basis of future vaccines for infectious bronchitis produced by many manufacturers.

Killed bursal-derived, IBD vaccine. to the American industry, modeled after a vaccine already marketed in the UK. Soon, domestic companies followed with their own similar products.

From Sterwin to ICB to Intervet. The next 4 years (1978-1982) would prove to be turbulent and pivotal for Hiram, and also important for the poultry industry. Hiram’s transition through this period has not been well documented, and is treated in some detail here.

Hiram was always looking for new ways to meet the needs of the poultry industry. By 1978, he concluded that the use of killed vaccines would provide important new ways for protection of broiler breeder flocks and their broiler progeny. This realization was based in part on work by Dr. Ken Eskelund at Maine Biological Laboratories and others, but in some respects was an idea ahead of its time.

In August 1978, Hiram strongly advised his parent company, Sterling Drug, to approve his proposal for the construction of an additional production facility to make inactivated Newcastle, inactivated IBD and other vaccines. A capital expenditure of about \$1 million would be required. His vision included the capacity for a complete line of “point of lay” inactivated Gumboro, Newcastle and combination vaccines. He advised Sterling Drug that “without such expansion, we will not have the ability to meet changing needs ... and Sterwin’s leadership position will deteriorate.” However, Sterling Drug management failed to support his request. “I could see the future of poultry vaccines was going to be in killed products, and I wanted to keep the company on top,” Dr. Lasher recalls.

This decision by Sterling Drug was an event with significant repercussions on Hiram, Sterwin, Intervet, Maine Biological Laboratories and the entire industry, as will be described. On top of all this, Hiram’s carefully prepared petition justifying a salary increase, with a statistical analysis prepared by his son, Steven, was denied during this same time period.

He decided in February (announced to his employees on March 12th) to resign from Sterwin Laboratories effective July 1, 1979. The reasons for this decision were (1) the aforementioned denial of the facilities request, (2) the lack of commitment by Sterling Drug management to keep Sterwin number one in the marketplace, (3) the failure to respond favorably to Hiram’s salary increase request, and (4) the availability of sufficient personal assets to permit establishment of a new company. He already owned some land and was the beneficiary of a life insurance policy purchased by his son, Steven, who died just a few months earlier. Hiram clarifies that Sterling Drug management granted him the right “to leave at any time and that Sterling had no strings attached to my future endeavors.” This was an issue that would subsequently be the subject of a lawsuit brought by Sterling management.

Back in 1978, while still a Sterwin employee, Hiram became involved with designing a state-of-the-art vaccine production facility in Brazil, in conjunction with Sydney-Ross, a Sterling subsidiary, in Rio de Janeiro. Plans were developed and a ground breaking scheduled, but the project was ultimately abandoned. Hiram reaped significant benefit, however, as the designs for the Brazil plant provided a good start for the subsequent design of the ICB facility in Millsboro. The Brazil plant was never constructed.

Thus, by the spring of 1979, Hiram was already laying plans for the next chapter in his career. This dream included the development of a new independent vaccine production company, ideally located again in Millsboro, which would provide vaccines to the world market. Perhaps he felt a challenge in going head-to-head with his old company right in

the same town. The new company, incorporated in April 1979, was called Intercontinental Biologics (ICB).

Hiram's relationship with Intervet, a Dutch vaccine manufacturer, was solidified in the late 1970's through the importation by Sterwin from Intervet of the PBG98 strain of infectious bursal disease vaccine, also known as the Baxendale strain. Hiram supplied Intervet's Mexican branch with this vaccine. Then, in April 1979, he informed Ben Foord, President of Intervet, that he was leaving Sterwin and was preparing to establish a new company. According to an Intervet publication, Intervet was at that time actively seeking a suitable acquisition in the United States, calling its quest "The great American adventure." Foord met with Hiram at the Cornell Club in New York City for initial discussions on a joint venture with Intervet International, a subsidiary of the Dutch conglomerate, Azko-Pharma. A letter from Lasher to Foord dated April 12th confirmed Hiram's interest in such an arrangement. Thus, even before he had officially left employment with Sterwin, Hiram had created a new company and started negotiations with Intervet. He was not about to waste any time.

In July 1979, Hiram moved into a construction trailer on the new ICB site, along with Donna Layfield and Sandra Lasher Gordon (Hiram's daughter) to start "fast track" construction on the new facility. Fast track was a new concept at the time where a structure was designed as it was being built. Al Cosgrove was a silent partner to create support from the scientific community.

There was a 3-phase plan for an R&D facility to be completed by August 1979, a production plant to be started by September 1979, and a research facility to be constructed later. Construction of the phase 1 research center commenced in July 1979 and was dedicated in December 1979 to the memory of Hiram's son, Steven Hiram. The land was a 29-acre parcel just south of the town's sewage treatment plant on County Route 331. The land was owned by Betts Pond Realty Co., which was in turn owned by the Lasher family. The three other investors in the project were William A. Carter, Donna Layfield and William H. Lasher. Of these, Layfield and Carter invested no capital but Layfield contributed heavily in various technical aspects and Carter periodically contributed advice (according to Hiram). The new company (ICB) received licenses to sell poultry vaccines and began commercial production in January 1982.

The birth of ICB and the construction of its \$6 million production plant were accompanied by much hyperbole. Hiram described the business as "a once-in-a-lifetime confluence of worldwide poultry vaccine research and advanced state-of-the-art construction." Much was made of the FAPP air handling systems, the color-coded biological products, and the broad menu of products for worldwide distribution.

During this period, Hiram faced a lawsuit initiated by Sterling Drug, Inc., which claimed that Lasher violated a five-year non-compete clause in his contract when he sold the company to Sterling Drug, Inc. in 1959. Hiram recalls that nothing was said about the clause at the time of his resignation which he interpreted as freedom to do otherwise. The suit was settled out of court and ICB agreed to several restrictions on their business.

However, these restrictions were temporary and would be lifted by January 1982. Hiram commented later that this settlement exacted no penalty at all since ICB was not ramped up to produce products until after the expiration date for these restrictions.

The long anticipated agreement whereby ICB would be joined with Intervet International was completed on July 17, 1980. Under the agreement Intervet would purchase the stock and assets of ICB and in return, ICB (now owned by Intervet) would enter into a five-year agreement with Hiram whereby he would serve as president, devoting his energies to developing the company.

There was also a bona fide exchange of critical technologies between Hiram and Intervet. Intervet provided emulsion technology and equipment to ICB. It also promoted the concept of monovalent, non-combined Newcastle and bronchitis vaccines, which had been previously rejected in the US marketplace. In turn, ICB provided technology to Intervet, including a new stabilizer (developed by Hiram but patterned after one used by an Italian manufacturer of human vaccines). He also provided suggestions in freeze drier processes. Hiram reflects on this partnership as providing considerable cross fertilization between Old World and US technologies. However, the story quickly soured.

Hiram moved with efficiency to bring the production on line. There was a four-month shake-down of the new production facility followed by assembly and training of production teams for two months. Hiram had cleverly arranged for licensing of the new products and completion of the required testing by the National Veterinary Services Laboratory to coincide with the projected January 1982 production launch. He arranged for field trial results to be reported from field usage following commercial introduction of the products. All master seeds were derived from selected licensed vaccines deemed to be the best of their respective types. Three serials were prepared from each master seed. Hiram had given NVSL his five week production timetable so they could prepare their testing schedule for 30 serials of 10 vaccines. The APHIS reviewer, Walter Martin, recommended licensing of all products and was himself commended for exemplary performance in this work. Hiram refers to this period as “a first time event for total cooperation among licensing, laboratory and firm.”

Intervet brought in several management personnel (vice presidents) to take on key responsibilities, including John Hofland (Netherlands), Ron Pylar (US) and Klaus Olbers (Germany). This group was in place by April 1981 but ultimately did not mesh together well with Hiram, probably because of differences in management style. The Intervet corporate culture favored decisions by consensus while Hiram's style, which had worked to his advantage at DPL/Sterwin, was autocratic.

The clash in management styles created significant problems for the fledgling company. According to a subsequent court document, Hiram did not agree with decisions made by his vice presidents and assumed personal control of decision making, which they obviously resented. There were disagreements on product pricing and also with production procedures. With the January 1982 deadline rapidly approaching, Hiram increasingly attempted to do everything himself. The situation was becoming untenable.

It all came to a head in January 1982, one wintry day after Intervet's new products had been successfully launched at a meeting in Ocean City, Maryland, Hiram was called to an urgent meeting in Wilmington DE with Ben Foord, president of Intervet, Inc. (the parent company). Foord basically advised Hiram that his "requested" resignation had been accepted, with reference to an earlier meeting where Hiram was present. However, Hiram held that he had never resigned and, indeed, he had continued to work actively to achieve the objectives of the company. Nonetheless, Intervet was prepared to let him go and did so – right at the moment commercial production was due to start. The court ultimately found that Hiram did not resign and that there was no basis for his termination for cause. However, Hiram was gone. He left ICB in late January, 1982. In the end, Hiram received payment in full for the master seeds and product licenses per the original agreement. Intervet also paid his legal and personal expenses, including travel and lodging. This was not a particularly amicable separation and, unfortunately, the Intervet president, formerly vice president of production, retained animosity towards Hiram for more than two decades.

ICB shipped its first product in March 1982, just two months past Hiram's original target date. Its name was changed in 1983 to Intervet America and in 1984 to Intervet, Inc., as it is known today. Today the company is a team of approximately 250 vaccine production specialists who have become a major factor in both domestic and international markets. This would not have happened without Hiram's original vision and initiative. On the other hand, Sterwin Laboratories fell on hard times and has proceeded through several successive ownerships.

Another beneficiary of the Sterling Drug decision was Maine Biological Laboratories (MBL), a producer of poultry vaccines located in Waterville, ME. MBL introduced a successful inactivated infectious bursal disease vaccine in the late 1970's that was followed by a number of other inactivated products. Through the 1980's, MBL experienced growth and profitability based largely on a portfolio of inactivated vaccines. Had Sterling Drug approved the requested expansion, MBL would have faced stiff competition from Sterwin during this period in the inactivated vaccine business.

In January 1982, Hiram made seven specific predictions on the future of the vaccine industry. Hiram rarely hesitated to speak his mind and did so with the confidence that reflected his 30 years of experience in poultry vaccines. This list serves to document issues that Hiram thought to be important at that point in time. Armed with 20-20 hindsight, it is interesting to reflect on these predictions 25 years later.

- *Cloned vaccines will be more popular.* This did not happen.
- *Inactivated vaccines in stable water-in-oil emulsions will be more popular.* This has happened.
- *Inactivated vaccines with several antigens will be used at point-of-lay.* This has happened.
- *Single live virus vaccines will be produced for Newcastle and bronchitis.* This was an idea promoted by Intervet but was not well accepted in the US.

- *Larger dose lyophilized units will become available.* Large-dose (greater than 1000) vials have become the rule.
- *Mass vaccination, such as shower spray in the hatchery, will be used more frequently.* Mass vaccination has become a universal practice. It was first introduced in the hatchery through the use of a spray cabinet developed by Dale King of Select Laboratories.
- *Specific vaccines for endemic diseases will be developed, e.g., bronchitis vaccine variant 3168.* Many new vaccines have been developed.
- *Genetically engineered vaccines will be propagated and used.* In 1982 this technology was very new and seemed to offer much hope for the future. However, genetically engineered vaccines have been very slow in coming and have had limited impact so far.

You win some and you lose some.

Lasher Associates. By 1982, Hiram was 62 years old and during his 40-year professional career had many significant accomplishments to his credit. He had created companies, developed vaccines and accumulated significant wealth. For most persons, this would be a time to think retirement. However, retirement is a word not found in Hiram's vocabulary. Another chapter was about to unfold.

Following his unanticipated departure from ICB/Intervet in January, Hiram wasted no time in taking the next steps. He established an international consulting company termed Lasher Associates, Inc.. By February 10th construction had begun on a 1400-square-foot laboratory and office building in Millsboro, Delaware, the town where he had spent his past 32 years. The mission was to provide technology transfer and services to the worldwide biologics industry. The services included virus isolations, antibody assays, and vaccine titrations. He also offered training in the establishment of health profiles for poultry flocks.

Hiram saw himself as a consultant to the world, parlaying his years of technical and business expertise into profits for other companies. He essentially became a broker of information, using the same set of skills that served him so well during his days of leading vaccine companies. He was still the first to know, and the first to act. He knew about new technology, production issues and, importantly, governmental regulatory and licensing issues. He understood business and how to make a profit. His experience and skills provided a powerful asset to companies that were less well informed and encumbered by deliberate administrative processes.

A report from 1995 states the following "Today Lasher Associates provides technical assistance, research and advice to about 16 clients, ranging from small to multi-national companies. Some are based in the United States, but the firm also serves clients in Japan, Russia, Malaysia, Indonesia, India, Italy, Israel, France, Mexico, and Venezuela. Hiram says 'We advise others who are developing vaccines on production procedures in an effort to improve their quality and to make the vaccines more effective in controlling

diseases. I spend about 20% of my time in foreign countries, and I also operate a lot with the fax machine.' Today it is email.

For many years he operated with a small staff and provided consultation on a one-to-one basis with clients. Early in 1996, Vergil S. Davis, D.V.M., Ph.D., joined the company and brought with him considerable technology and experiences to assure continuity of the international consulting service.

Over the years, Hiram through Lasher Associates became involved in many interesting and important issues affecting the poultry industry. A few samples are given here to indicate the type of work done and its impact.

In January 1988, Hiram (who seems to know everybody, everywhere) introduced Dr. Kenneth Eskelund, president of Maine Biological Laboratories, to Gensuke Tokoro, president of GHEN Corporation. Eskelund invited Tokoro to Maine and over a single weekend reached an agreement to sell MBL to GHEN, a major transaction in the poultry biologics business. Hiram received monetary compensation from MBL for his role plus and a memorable two week trip to Japan as guests of GHEN along with Ken and Shirley Eskelund and Michele Lasher.

From 1985 to 1995, Lasher Associates provided a service to vaccine producers and poultry vaccine companies to independently confirm the infectivity titer of MD vaccine serials. Many poultry producers purchased vaccine in large contacts which were negotiated largely on titer. One of the early services involved titrations of MD vaccines. Broiler companies would use an independent titration on a particular vaccine serial in price negotiations with the vaccine company as well as determining appropriate dilution factors. Even vaccine manufacturers advertised the Lasher titers, which they felt would be more credible than their own in house titers. For example, Select Laboratories once advertised that "Every serial we deliver of any of our four Marek's vaccines comes with an independent letter of verification from Lasher Associates, Inc..... Lasher Associates is fiercely independent; they can't be 'bought'. Their assays are perhaps the most respected in the business." This service was discontinued because Donna Layfield, the technician who conducted the tests, left to raise her children. This service was subsequently provided by the University of Delaware, which immediately raised the price.

In the 1980s, Hiram helped a Japanese biotechnology company, Nippon Zeon, to establish cooperative relationships with US research facilities to develop recombinant vaccines based on fowl pox vectors. A long term project conducted at the Avian Disease and Oncology Laboratory in East Lansing ensued with a focus on vaccines for Marek's disease and hemorrhagic enteritis of turkeys. Ultimately, Nippon Zeon, working with Biomune, licensed the first recombinant vaccine for poultry in the US, a fowl pox-vectored Newcastle disease vaccine.

Much of Hiram's effectiveness as a consultant rested with his access to information. His personal document archive, developed over the years, has proved to contain an

impressive amount of information. However, at this writing, it is only partly computerized and retrieval is normally done by perusing subject matter folders contained in paper files. In addition to publicly available documents, these contained numerous private-source entries.

Regulatory activities (USDA). As a vaccine producer, Hiram had a long-term vested interest in the federal regulation of poultry vaccines that has continued during his years as a consultant to the vaccine industry. Combining his thorough understanding of applicable laws and regulation with his knowledge, experience and access to federal officials, Hiram often found himself in a position to help guide federal policy-making in this important area. Much was accomplished under the umbrella of appropriate trade organizations, such as Veterinary Biologics Licensing Association (VBLA), the Animal Health Institute (AHI) and the Association of Veterinary Biologics Companies (AVBC).

In the 1950's, working within the VBLA's precursor organization and with Luke R. Sinclair, USDA Biologics Inspector, he helped define the first standard requirements for bronchitis vaccines that served as a model for all other veterinary biologics requirements thereafter. During the following decades, vaccine requirements were expanded and refined as a result of continuing cooperation between the trade associations and USDA's Veterinary Biologics Section. Noteworthy were the adoption of the master seed concept, institution of extraneous agent testing and improved stability testing. In addition, mass immunization routes for poultry vaccines were officially approved, thus greatly reducing application labor costs.

Hiram made many individual and group trips to discuss vaccine regulatory matters with federal officials. As a member of the Veterinary Biologics Licensing Association he and Dr. James Bivens met with Luke Sinclair of APHIS Veterinary Biologics in 1962 to develop the first standards for laryngotracheitis vaccines and improved standards for combination live Newcastle (B1 type) + bronchitis vaccines. In 1983, Hiram and others met with Dr. David Espeseth and successfully pushed up the approval of the new SB-1 plus HVT bivalent vaccine for Marek's disease. When a Delmarva Poultry Industry, Inc. delegation visited APHIS in 1993 to request approval of a variant (072) bronchitis vaccine, Hiram was a prominent and effective member of the group.

Hiram cultivated personal friendships with the Veterinary Biologics staff at APHIS, at least to the extent possible within the constraints of ethical practices. For example, Hiram was a staunch supporter and personal friend of Dr. Bernard LaSalle, a fiery and long-term member of the Veterinary Biologics Staff who was a reviewer for many of Sterwin's product licenses. LaSalle transmitted warm wishes to Hiram on the occasion of his retirement from Sterwin in 1979, and remained a close friend for many years. Remarkably, LaSalle visited Hiram in Rehoboth Beach at his own expense to review facility drawings for ICB. In addition, Hiram also had excellent contacts with Dr. Robert J. Price, Director of Biologics Licensing, over Folger's coffee at 6:30 a.m.

Ron Plylar has written "Your ability to communicate industry concerns to APHIS from a technical and practical perspective has helped resolve many complicated and divisive

issues.” Clearly, Hiram has been effective in his relationships with regulatory officials for the benefit of his companies and also the industry as a whole, and has made such activities a priority.

Relationship with AAAP. Hiram was one of the 27 charter members of the American Association of Avian Pathologists. He qualified for charter membership based on 15 years prior experience in poultry health activities, as specified by the original constitution, adopted in 1958. He will be recognized in 2007 for his 50 continuous years of membership at the 50th Anniversary Meeting of the AAAP.

He served on a number of committees, including Biologics, Education and Audit committees.

He was a long time member of the AAAP History Committee, and was particularly active in suggesting and recruiting authors for the historical review series. He helped create what is now known as the Lasher History Lecture (see below). His interest in the history of avian medicine and of the important people in this field has resulted, among other things, in the present biography.

In 1987, Hiram provided a generous gift of \$33,000 to endow an AAAP award, originally called the C.A. Bottorff Award. This award recognizes an avian diagnostician/technical service veterinarian who has contributed significantly to the poultry health program in North America in the past 10 years. This award honors Dr. C. A. Bottorff, Hiram’s friend and mentor. Bottorff had an illustrious career as a poultry industry veterinarian with Lederle Laboratories and was actively involved in the early development of the AAAP. The first award was given in 1988. In recognition of Hiram’s role in this award, it was later renamed by the AAAP Executive Board as the Lasher-Bottorff Award. Hiram himself was the 7th recipient of this award in 1994.

The above endowment was also instrumental in the origin of the Lasher History Lecture, an invited talk at the annual AAAP meeting on some aspect of poultry disease history. The idea for a lecture, to be funded from the excess income of the Lasher-Bottorff fund, was generated in 2001. It appears that Dr. Bruce Stewart-Brown, as the newly ensconced chairman of the poultry section meetings for AAAP, wished to add a history lecture to the program as a way to broaden its appeal. Dr. Bob Eckroade, then the secretary-treasurer of AAAP, approached Hiram about funding since there had been occasionally excess funds in the Lasher endowment. The concept and present nomenclature was approved by the AAAP Board of Directors at the annual board meeting in 2001. Speakers have since been selected by the History Committee (although the original board minutes specified the awards committee for this role). The first Lasher Lecture was given in 2002 by Dr. Steven Hitchner. After several years, the AAAP started to provide support for this lecture as part of its scientific program expenses. An appropriate source of funds to insure the continuity of this Lecture is currently under discussion.

Other Professional organizations. Hiram has been active in professional organizations and societies throughout his long career. His principal activities include the following. He was a founding member of the Delmarva Poultry Industry, Inc.’s Poultry Health

Committee from 1955 to present. He was a member of the Agricultural Committee of the University of Delaware from 1992 to present. In this role, he was an early supporter of the new Agricultural Biotechnology Center at the University of Delaware. He has been a member of the United States Animal Health Association (USAHA) for more than 50 years, serving on numerous committees including Biologics and Biotechnology, Salmonella, and Transmissible Diseases of Poultry and Other Avian Species. He is an Honor Roll member of the American Veterinary Medical Association. He is a member of the World Veterinary Poultry Association and was designated as an honorary life member in 2002.

He has been especially active in organizations involved with vaccine production and regulation. He has been active in the Veterinary Biological Licensees Association, Animal Health Institute, and served on the Poultry Biologics Committee as a member and chairperson (1952-56). He is also a member of the International Society of Pharmaceutical Engineering (ISPE) for technical professionals in the pharmaceutical manufacturing industry.

In 1995, Hiram helped organize a new organization called the AVBC in response to proposals to achieve international harmonization of vaccine standards by imposition of European requirements on all US vaccine manufacturers. The organization successfully defended the existing US system and ultimately grew to 33 member companies, including 23 manufacturers licensed by USDA. Hiram continues to serve as senior advisor and on its executive committee. He was honored with lifetime membership in the AVBC in 2005.

In addition, he is or has been a member of the American Veterinary Medical Association, New York Academy of Sciences, American Association of Veterinary Laboratory Diagnosticians, Poultry Science Association, US Poultry & Egg Association, and the American College of Poultry Veterinarians (honorary diplomat).

Hiram has been a fixture at virtually every poultry disease conference of note for many years, including those in other countries. However, he reflects on his early days with DPL when, having “gone commercial”, he was barred from the Bear Mountain Conferences sponsored by Lederle Laboratories and also from the NECAD meetings (which much later rescinded this prohibition, see below). He was quick to point out, however, that he always quickly obtained the proceedings from his “untainted” friends, a testimony to his desire for and ability to acquire any and all information of value.

In these early days, persons with commercial employment were widely presumed to be biased and thus were not readily accepted as equals by groups of university researchers or federal workers. For example, it was not until 1977 that the membership of NECAD voted to welcome all AAAP members to its conferences (History of the Northeastern Conference on Avian Diseases, 1963-1978).

Civic Activities. By the time Hiram and his family had lived in Sussex county for 15 years, he felt the desire to become involved in education at the state and local levels. In

1963, he ran for school board in Sussex County and failed by 75 votes. Two months later, he was appointed by the Governor to the Delaware State Board of Education, where he served as vice chairman until 1970. Hiram has reflected on the irony of this sequence of events. Two of his motivating factors were the inequities in the educational system and the unrest created by the civil rights movement.

He conceived the idea of converting the former William C. Jason Comprehensive High School in Georgetown into the first campus of Delaware Technical and Community College. As described in one of his many accolades, "Entirely on his own initiative, working cooperatively with both the Jason School Board and the State Board of Education, Lasher had a committee created and financed to study the feasibility of converting the Jason School into a Community College. The work of this committee was expanded to a state-wide study and led directly in 1966 to the enactment of legislation that created Delaware Technical and Community College (DTCC), with the former Jason School as its first campus." Hiram co-founded the DTCC Foundation and served as its chairperson for several years. He received an honorary degree from this institution in 1978.

He was also a leader in the effort to consolidate Delaware school districts, resulting in the Educational Advancement Act of 1968. He may well be considered as the architect of the Cape Henlopen and Indian River School Districts. He assumed a leadership role in both the desegregation process and the consolidation of individual school districts, the two most contentious issues ever to face the public schools of Delaware. A nomination letter for his 1969 Phi Delta Kappa award for service to education states "No lay person in Delaware has exerted as much influence in behalf of excellence in education during the past 15 or 20 years."

He also helped Delaware become the first state to have statewide educational television, in 1965. One supporter called Hiram one of "the two slickest politicians in the State of Delaware."

After several years of dedicated service on the Board of Education, he was removed by Gov. Terry. Newspapers, which were complimentary about Hiram's tenure on the Board, said that this removal was the reward for Hiram's pro-consolidation stance which influenced people but did not win him many downstate friends. So it goes in the world of politics.

Hiram also worked diligently to improve medical care available to residents of Sussex County. He served as a member of the Board of Directors of Beebe Medical Center at Lewes and also served on the Executive Committee for Finance and Quality, 1985-96. His services were recognized by a special Resolution of the Board of Directors.

Additional civic roles included membership on the Delaware State Board of Educational TV (Vice Chairman 1964-70), Executive Board of the Delaware State Chamber of Commerce (1970-78) and Delaware Council of Soil and Water Conservation (1997-present).

He also served as a member of the Boards of Directors for Millsboro Poultry Company and Mark VII Seafood for various periods in the 1960's and 1970's. According to Ruud Hein, Hiram enjoys special status in the community of Millsboro where his many contributions are recognized and appreciated.

Boy Scouts of America. As their children reached the appropriate age, Hiram and Bertha encouraged them to be active in Scouting. Although Hiram was not a scout in his youth and was not an outdoorsman or camper, he appreciated the role of scouting and invested himself in various leadership and philanthropic roles. Earlier, he sponsored an Activity Center at the Henson Reservation Nanticoke Camp. Bertha is still active in Cub Scouts, serving also on the executive board. Hiram made his year-round swimming pool available for scouts who needed to earn swimming merit badges. Hiram was on the Executive Board, Delmarva Council (1970-90) and the Advisory Committee (1990-present). Both Hiram and Bertha received the prestigious Silver Beaver awards, in different years, in recognition of their exceptional service. Hiram also received a Medal of Merit. A scout facility dining hall, known as Allen-Lasher dining hall, located at the Henson Reservation in Maryland, was named in honor of Bertha and Hiram in 2000.

Family and Hobbies. Hiram was devoted to his family – mother, siblings, wife and their 7 children although he recognizes that too little of his time was spent with his family due to other pressures. He lists as his avocations his philanthropic activities, capital campaigns and scholarships. Traditional hobbies were not apparent, although he did enjoy traveling with his wife and others in his family. He is a sports fan, rooting for professional baseball and football teams over many years. He did make one memorable family camping trip to the World Expo in Montreal. He recalls with pleasure other vacation trips and cruises.

Hiram is appropriately proud of his 7 children who he considered a true blessing in his life. He and Bertha encouraged them all towards academic excellence and scouting. His first son, Steven Hiram, who subsequently died of heart disease at the age of 29, gave an eloquent valedictory speech at his graduation from Millsboro High School in 1967 on the dangers of communism, reflecting the zeal of his father as a political activist. He is also the proud grandfather of Sean, Elizabeth and Sara and the great grandfather of Hiram Sean.

He came from a religious background and was described in 1948 as being an active worker as a member of the Dutch Reformed Church. He now belongs to a Methodist church but is less active than earlier.

Hiram served for several years as Wing Commander of the Delmarva Chicken Flying Meet, humorously organized by the International Chicken Flying Association (ICFA), associated with Bob Evans Farms. He was quoted as saying “They’re a beautiful animal in flight. The minute I saw my first chicken take wing, I knew I’d found my calling.” His first Meet was held in conjunction with the 30th Annual Delmarva Chicken Festival in June 1977. In his interview before the 4th Meet in 1980, he was able to enlighten

readers about the world record flight of 297 feet 2 inches made by Kung Flewk, a Japanese black tail bantam in 1977. The Lasher interest in chicken flying extended beyond Delaware's borders. Hiram and his children, Michael and Michelle, participated in the Fifth International Chicken Flying Meet held in Rio Grande, Ohio in 1976. In that seminal event, George (of Newcastle backpassage fame) and two other selected chickens from the Lasher personal breeding system competed. George was taking on a new challenge, having failed to win honors in the "best dressed chicken contest" at the 1975 Delmarva Chicken Festival.

Eventually, the Delaware flying meets stopped after sanctions from the Society for the Prevention of Cruelty to Animals could no longer be obtained. Who says that Hiram does not have a sense of humor?

Philanthropic activities. Hiram and Bertha have contributed generously to a variety of philanthropic activities over a period of many years. These include the establishment of scholarships, endowed faculty positions, building improvements, and professional awards and lectureships. In many cases, Hiram has chosen to use such gifts to memorialize a person of special importance in his life. Among his many charities, there have been substantial gifts to the University of Delaware, Cornell University, the University of Georgia, Houghton College, The American Association of Avian Pathologists and the Boy Scouts of America.

Persons memorialized include Steven Hiram Lasher, Hiram and Bertha's deceased son (Lasher Laboratory at the University of Delaware, and the ICB Research Center), Caswell Eidson (endowed chair at the University of Georgia), C.A. Bottorff (AAAP Award) and B.Vasudev Rao (scholarship at University of Delaware). Eidson served as a consultant to DPL for many years. The DPL support was important to Eidson who was just starting his career at the University of Georgia and the data generated were important to Hiram as they supported licenses for a number of original products. In the process Hiram became close friends with Eidson, who died in 1983 from a chronic liver condition while still in the prime of his career. B.V. Rao, the "Father of Indian Poultry" met Earl Moore during an assignment by Moore to India. Moore became a friend of and mentor for Rao. Rao, under the guidance of Moore, started the V-H poultry enterprise in Pune, India. Hiram and Vergil currently consult with the V-H group. Rao died in 1996 and was succeeded by his daughter, Anuradha Desai.

Awards and accolades. Hiram received many accolades for his achievements and philanthropic activities. The contributions that provided the basis for these awards represented not only his professional activities on behalf of the poultry industry but also his work with the Boy Scouts of America and educational institutions in Delaware, as are detailed elsewhere. His impressive list of awards includes:

Phi Delta Kappa Award, Contributions to Delaware Education, 1969
Honorary Degree, Delaware Technical & Community College, 1978
Medal of Merit, Boy Scouts of America, 1979
Silver Beaver Award, Boy Scouts of America, 1981

Leadership Award, Beebe Medical Center Board of Directors, 1989
Delmarva Poultry Industry Medal of Achievement, 1989
Distinguished Leadership Award, Northeast Conference on Avian Diseases, 1993
Lasher-Bottorff Award, American Association of Avian Pathologists, 1994
Order of the First State, presented by Governor Tom Carper, now US Senator 1994
Lasher Laboratory named, University of Delaware, 1997
Medal of Achievement, Delmarva Poultry Industries, Inc., 1998
Service to Agriculture Award, University of Delaware, 1999
Distinguished Citizen Award, Delmarva Poultry Industries, Inc., 2000
Allen-Lasher Dining Hall named, Boy Scouts of America, Wilmington, 2000
Honorary Diplomat, American College of Poultry Veterinarians, 2000
Distinguished Service Award, University of Georgia, College of Veterinary
Medicine, 2001
Special Service Award, American Association of Avian Pathologists, 2001
Tribute, Delaware State Senate, 2001
Listed, Who's Who in American and the World, 2001
Dedication of Meeting, Western Poultry Disease Conference, 2002
Honorary Life Membership, World Veterinary Poultry Association, 2002
Dedication of Meeting, DPI Poultry Health and Processing Meeting, 2002
Proclamation, Governor of Delaware, 2004
Poultry Hall of Fame, American Poultry Historical Society, 2004
Lifetime Award, Association of Veterinary Biologics Companies, 2006
Life Member, American Association of Avian Pathologists, 2006

He was nominated and received short-list recognition for the Animal Pharm Lifetime Achievement Award, 2006

Scientific writings. For one with such a significant reputation in poultry health and one who has built a career on innovation, surprisingly little of Hiram's work is documented in the scientific literature (see AAAP Archives for list of publications). His publications include just two papers in refereed journals and one of these was a historical review. He wrote a paper on the role of technical veterinary services for a foreign publication and a review paper on Bursal Disease with Simon Shane. He was inventor on one patent. In addition, he was not a frequent speaker at scientific meetings, as is discussed elsewhere. In fairness, it is well accepted that commercial companies rarely publish their data but, on the other hand, they often take advantage of scientific meetings to provide relevant information. Hiram has done neither.

Personal reflections on a career. Reflecting on his career and life, Hiram has offered some personal insights to this writer, which I will share. Hiram surely considered his career a success. He cites his happy marriage to Bertha along with various professional, civic and philanthropic achievements. In his opinion, his early dream of becoming a successful poultry veterinarian has been fulfilled. He speaks with pride about his activities with the Boy Scouts, Beebe Hospital, the Delaware State Board of Education, Delaware Technical and Community College, the University of Delaware/Lasher Laboratories, and the University of Georgia. Many of these were the recipients of his

philanthropic gifts. He also noted with satisfaction the many contributions to poultry vaccine technology, including the creation of valuable master seed stocks and the transfer of relevant technology to other companies throughout the world. He also acknowledges the valuable partnership with Vergil Davis in accomplishing many of his goals. He created much, gave back generously and improved poultry health.

When asked about the disappointments, Hiram reflected that he regrets not spending more time with his family. Bertha assumed most of the household and child rearing responsibilities. The premature loss of his son, Steven, at age 29 was especially troublesome. Steven's illness stemmed from a bout of rheumatic fever at age 12 that probably could have been treated had it been diagnosed more quickly. His aortic valve received permanent damage leading directly to his shortened lifespan. This event weighs heavily on Hiram to this day. Steven is memorialized by plaques on two buildings, the University of Delaware's Lasher Laboratory and the original R&D building of ICB (now Intervet, Inc.)

Hiram reflects with pride on the many technical and management obstacles he overcame to create an efficient and productive business. However, he recognizes his autocratic management style was difficult for some of his employees. He had difficulty in creating a sense of confidence in his subordinates, fearing instead that they would not meet his exacting standards of performance. This is an area that Hiram feels might have been done differently.

Hiram never completely overcame his feeling of inadequacy when speaking in public.

Hiram credits his success to a variety of factors led by a rigorous work ethic and an insistence for quality. He was willing to accept directions from regulators and tried always to work cooperatively with them. He felt his extensive bench experience was important in developing practical in-house standards. He valued attendance at scientific meetings and establishing networks with other scientists. He also cultivated interactions with local diagnostic laboratories to provide early signals of upcoming needs and opportunities. At the end of the day, Hiram credits his self confidence as an important factor. Surely one would need considerable self-confidence to start a business when you had never worked in one, to make major decisions virtually "on the spot", and to avoid second-guessing yourself as you push relentlessly toward success.

Well into his 8th decade and with a little tutoring from Vergil, Hiram became computer-literate (with some qualifications). His enthusiasm for knowledge and technology has never waned.

Hiram reflects with pride on several persons he has mentored and who he considers as protégés. He recruited Fred Melchior from the University of Connecticut where he was working with Roy Luginbuhl on Marek's disease. Although Melchior left DPL for another job with Merck/Hubbard, he returned later to become general manager of the Sterwin Millsboro operation. He later joined Intervet America as Vice-President of Production. He also recruited Tom Koski as a technician in quality at DPL/Sterwin.

Koski became director of quality control at DPL and later joined the National Veterinary Services Laboratory as Sterility Officer. Donna Layfield (Sinnamon) was steered by Hiram first to the University of Georgia and later back to DPL/Sterwin where she trained under Emil Gelenczei. Layfield received several promotions and moved with Hiram to ICB where she was Quality Control Director. She later joined Hiram again at Lasher Associates where she was in charge of laboratory services for many years.

Who is Hiram Lasher? Hiram Lasher is a person who is so widely known and who has prompted diverse responses from colleagues, running the gamut from admiration to disdain, that some mention of how Hiram is perceived by peers and others seems appropriate. Since this is a biography, not an autobiography by proxy, this writer has decided to gently open this “Pandora’s box” in the quest for a more complete story.

Almost no one meeting Hiram fails to develop an opinion about him. When you mention his name, you generally get a reflective smile and a story because Hiram has touched almost every person in the poultry health profession in one way or another. Hiram is often perceived as all business, and you may easily get the feeling that he is directing the interaction with you toward something that benefits him. Without obvious hobbies or outside interests other than civic activism and philanthropy, and with a limited time investment in family activities, he can be viewed as something of an enigma.

Hiram is passionate about his work. He will call you at any hour or any place and expect your immediate response. He is relentless in the pursuit of information and will invoke FOIA (Freedom of Information Act) to gain access, bypassing conventional routes of professional courtesy. He has a knack for knowing much about everybody’s private business, without their knowing it, and seems to be oblivious of the consternation or resentment this may cause. If he believes he has helped you, he will make sure you know it. His actions rarely convey much sensitivity for the feelings of others. He is known as a difficult person to work for, although his dedication to quality and productivity has made his businesses successful.

He has a sense of humor but his humor is not always perceived as appropriate and sometimes can be misinterpreted, probably because he is not a skilled communicator. Other times it is simply “far out” as in the chicken flying contests. Hiram does not appear to covet popularity, at least in a social sense. Jack Owens, Administrative Director of the Delaware Technical and Community College spoke of Hiram’s role with the State Board of Education, “Rarely are there public appointed officials who place their conscience and their actions ahead of their desire to be popular. You are such an individual.” Hiram is not known to be a lavish spender in social situations and is generally regarded as “tight” with his money, although his generosity to specific projects is well documented. He may congratulate you if you have received recognition and, if you are truly special to him, he may even make a major gift in your name.

Virtually everybody recognizes Hiram for his many accomplishments. Many value Hiram as a professional colleague. Probably only a few consider him as a close friend or soul mate. His colleague of many years, Vergil Davis, has described Hiram with the

adjectives: intense and persistent. Davis writes "...when the tasks appear too large or the time too short, one need search for an implementer no further than Hiram, a hero in his own right, with very few peers. He (Hiram) reminds us all that the secret to fruitful longevity is activity, and not just any activity, but one that we love." For Hiram, activity and accomplishment appear to take primacy over everything else.

Every person is unique, but Hiram is probably more unique than most. In many respects, he appears to live in a somewhat different world and march to a different drummer. This writer considers him as a friend, although this was not always so. One purpose of this biography is to allow more people to "know" Hiram and to acquire, as I have, an increased sense of respect and admiration for a truly extraordinary individual.

Author's note: Hiram Lasher provided prodigious support for this biography through a collection of nearly 100 documents and articles, countless email and telephone conversations and one face to face interview. Valuable input was also received from Vergil Davis and members of Hiram's family. A number of documents were cited extensively, including Hitchner, S. B., Poultry vaccine laboratories in the United States: a historical perspective. Avian Dis. 40:255-265, 1996, and an anonymous 2007 Merial/Select publication entitled "Poultry legend Hiram N. Lasher always wanted to be a vet." The infectious bursal disease story was taken largely from Lasher, H.N. and V.S. Davis, History of infectious bursal disease in the USA, the first two decades. Avian Dis. 41:11-19, 1997. Some of the documents used to prepare this biography will be available through the AAAP Archives (below).

Biography solicited by the Committee on the History of Avian Medicine, American Association of Avian Pathologists.

Additional biographical materials may be available from the AAAP Historical Archives located at Iowa State University. Contact information is as follows:

Special Collections Dept. & University Archives

403 Parks Library

Iowa State University

Ames, IA 50011-2140

Phone: (515) 294-6648

Fax: (515) 294-5525

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