



assigned to work on poultry diseases at Cornell at that time included an Assistant Professor (Dr. E. L. Brunett), two Research Assistant Professors (Carl Olson, Jr. and Carleton Ellis), and an Instructor in Pathology (Leonard Goss).

Dr. Levine was promoted to Assistant Professor in Poultry Diseases in 1941, further promoted to Associate Professor in 1943, and to Professor in 1944. When Dr. Brunett died, Dr. Levine was given responsibility for all of the poultry disease work in the Department of Pathology and Bacteriology. His staff included Clifford Barber and Melvin Hofstad who were Assistant Professors, and Catherine Greci (later to become Catherine Fabricant), an Assistant in Poultry Disease Research. His responsibilities included research, teaching and service related to poultry in all of New York State, other than Long Island which was covered by Dr. Kenneth Hilbert, the Director of the Poultry Disease Laboratory in Farmingdale.

**Teaching.** Teaching responsibilities included giving the course on poultry diseases taught to 3<sup>rd</sup> year veterinary students and overseeing the student participation in the College's poultry diagnostic laboratory. He was a superb teacher. Students who took his required course in poultry diseases lamented the fact that he did not teach something they were *really* interested in, like parasitology. He was that good!. His classes were never skipped; indeed, students who came a minute or two late (and by his rules not allowed to enter the classroom once he started lecturing) would sit in the hallway outside the door to take notes. In one-on-one instruction in the diagnostic laboratory, he was equally skilled in demonstrating systematic dissection and examination for gross lesions. He was a careful worker who utilized all of the available testing methods to assist in making a diagnosis. He worked well with clients of the laboratory and was highly respected by all, whether they were small-flock owners, large-scale producers, allied-industry personnel, or colleagues who contacted him for help. His teaching also involved extension-type activities through regional meetings, publications as bulletins for the poultry industry, radio broadcasts, and the production of movie films (*e.g.*, diagnosis of pullorum disease).

He gave countless lectures and courses abroad and was a regular speaker at regional, national and international meetings. He was a stimulating and provocative speaker with superb skills in his delivery and ability to capture his audience. He could organize a talk like few others. Often, on short notice, he wrote out a few notes only minutes before getting up to give a beautifully organized and delivered talk at a meeting. That could be his only preparation. Invariably, he sent one home with a lesson learned. His verbal exchanges with colleagues on the floor gained him the respect of those attending, and his ability to analyze situations and summarize his conclusions was a trait for which he was admired.

He had an international reputation for teaching which was especially strong in South America where he served as Director of a post-graduate course on avian diseases at San Marcos University, Lima, Peru in 1966 and taught for the Pan American Health Bureau in Brazil in 1967. Fluency in Portuguese and Spanish served him well in Mexico and South America.

His graduate students found him to be a demanding advisor. If you did not understand the meaning of the word "controls" when you started, you most certainly did when you finished. Everything had to be done in a searching fashion and with creativity. Simply repeating the work

of others was not enough. And reporting the results of your research fully and accurately was just as important. Second-rate was not tolerated.

The list of his personal graduate students is not long; there were only eight. This number does not reflect the interactions he had with many, many others who did not specifically have him as a major professor. Melvin Hofstad (PhD, 1944) was his first graduate student. Catherine Greci (MS, 1948) and Julius Fabricant (PhD, 1949) followed shortly afterward. As it turned out, Julius's and Catherine's tenures overlapped and they decided to share their lives through marriage. In the 1950s and early 1960s, there were four more students who were privileged to work under his guidance; Wayne Jensen (MS, 1951), Antonio Machado (MS, 1951), Martin Sevoian (MS, 1954) and Bruce Calnek (MS, 1956) earned degrees in the 1950s, and Richard Witter (PhD, 1964) completed the list. Interestingly, the latter three students all later became involved in research on neoplastic diseases of chickens, although this was not an area that Dr. Levine had pursued. Needless to say, it was not the subject that benefited from his tutelage, it was the approach to the subject that mattered to him.

Although he had relatively few graduate students, Dr. Levine provided less formal but very important training for many avian pathologists, including a large number from other countries.

**Service.** Service was no small part of his contributions to the field of avian medicine. As mentioned above, he did a great deal of diagnostic work, and was very comfortable rubbing elbows with members of the poultry industry, writing articles for the poultryman, conducting bronchitis clinics, performing diagnostic services and much more. Dr. Levine did not hide in an "ivory tower"; he was quick to take the opportunity to participate in extension meetings.



Dr. P. P. Levine conducting an immunization program by inoculating a small percentage of a flock of young chickens with infectious bronchitis virus – a program instituted by Dr. Levine for application throughout New York State.



Dr. Levine in the Poultry Diagnostic Laboratory at Cornell University. He was responsible for the establishment of similar diagnostic facilities in several locations in New York State.

The respect of the poultry industry was noted in a citation presented by the New York State Poultry Council in 1953 which stated in part "...most of all we are mindful of your sympathetic interest in our welfare and the way you have given of your time – well beyond the ordinary call of duty and often at personal sacrifice – to help us with our farm and industry problems."

**Research.** Dr. Levine's scientific career after receiving the DVM degree was concerned strictly with the field of avian diseases. At heart, he was a parasitologist; his excellent work on coccidiosis is best exemplified by his initiation of the use of sulfonamides for the control of that disease. That breakthrough, and the subsequent research stimulated by it, had an important role in permitting the mass production of poultry as we see it today. He described and named two new species of coccidia, *Eimeria hagani* and *Eimeria brunetti*, both honoring Cornell mentors and colleagues. While he may have had a special interest in coccidiosis research, he was knowledgeable in all aspects of avian diseases.

After Dr. Levine received his appointment as Professor of Avian Diseases his interests and research areas broadened to include the entire area of poultry diseases. Although his other responsibilities allowed him very little time at the laboratory bench he was soon given a useful research tool by the appointment of Julius Fabricant, first as a graduate assistant and then as an assistant professor. This relationship blossomed into a research partnership that lasted over 25 years. Together they explored a wide expanse of avian diseases, but primarily centering around the major problem of the poultry industry at that time (1950-1970), respiratory diseases. Studies on Newcastle disease, infectious bronchitis, and chronic respiratory disease included studies on modes of infection, carriers, disease transmission and prophylaxis. Also included were studies on the basic properties of the etiological agents involved with special attention to pleuropneumonia-like organisms later known as Mycoplasma.

A long but productive period of research on egg transmission of *Mycoplasma gallisepticum* led to an understanding of the nature and patterns of this process and to the conclusion that we

needed some new and ingenious method to control vertical transmission through the egg in order to eradicate this disease. Dr. Levine was responsible for the application of the temperature differential egg dipping technique for this purpose. This method for introducing antibodies into the egg was a novel approach and had significant impact on efforts to control chronic respiratory disease. An alternative method tried by this research team (Levine and Fabricant) was to prevent egg transmission by early immunization of potential laying hens which was also effective but risked significant losses under field conditions.

During a 10-month stay in Sao Paulo, Brazil in 1948-49, he studies poultry diseases and toxoplasmosis. A later sabbatical leave in 1953-54 was spent at with the Atomic Energy Commission in Oak Ridge, Tennessee, where he studied the ways of using radioactive isotopes to investigate diseases in animals, including poultry.

Dr. Levine first described duck virus hepatitis. With the assistance of Fabricant, the virus was first isolated, its pathogenesis studied, and control methods devised (first by passive immunization with antisera from recovered ducks and later by active immunization of breeder hens to produce antibodies in the yolk of newly hatched ducklings. Altogether he authored or coauthored more than 70 scientific papers.

**Administration.** In 1944, Dr. Levine was promoted to Full Professor in the Department of Pathology and Bacteriology which was chaired by Dr. Peter Olafson. Dr. Olafson gave him the responsibility of overseeing all poultry disease programs at the College and, indeed, in all of New York State aside from the Long Island laboratory at Farmingdale. It was, for all intents and purposes, a sub-department within a department in which he made major decisions regarding teaching, research and service in poultry disease matters. His ability to envisage a need, and act upon it, left an imprint both in the College and around the State of New York. His leadership and personal efforts led to the development of a duck research laboratory at Eastport, L.I. and regional poultry diagnostic laboratories at Kingston, Oneonta, and East Aurora. The latter three laboratories have since been closed because of changing needs in the poultry industry, but for over 20 years they served as a beacon light to poultrymen in distress.

As an administrator, he had an attribute seldom found in persons "in charge." He always made sure that credit was bestowed on those working with, or for, him. He "pulled strings," created opportunities, provided a boost, encouraged participation, and helped in many untold ways to promote his students, his young staff, and his colleagues in subtle ways that kept him in the background with the spotlight on the person helped. Not only did he do this, but he did it with genuine selflessness. Few persons could lay claim to such a description.

**Editorial Responsibilities.** Dr. Levine had a deep and respectful appreciation of good science and the reporting of such. Editorial work came as a natural to him. He wrote exceptionally clear and concise reports and his command of the English language was superb. And, he was organized and cognizant of deadlines. This led him to involvement with a journal published by the New York State Veterinary College entitled *The Cornell Veterinarian*. He became Editor of the journal for a period of five years and subsequently was on the editorial board. He, along with many of the others engaged in poultry disease research at Cornell, published frequently in the journal.

One of the outstanding achievements to his credit was the initiation of the journal *Avian Diseases*. Having served earlier as Editor of the *Cornell Veterinarian*, he had valuable experience that stood him in good stead. He arranged for financial backing by the *Cornell Veterinarian* and, with the support of many colleagues who also wanted a special-interest journal for the field of avian medicine, he set out with some uncertainty but a good deal of enthusiasm and hope. His idea of a journal that would be devoted exclusively to the subject of poultry diseases was not new. According to some historical notes from the archives established by the American Association of Avian Pathologists (AAAP), "...it is well known that P. P. Levine was dreaming, discussing, and planning such a publication during the late thirties and the early forties." Also, in the first issue of *Avian Diseases*, Dr. Levine noted that Drs. Hinshaw and Beaudette had considered starting a journal of avian pathology, but plans were dropped coincident with the start of World War II. He further related that Dr. Beaudette was enthusiastic about his (Dr. Levine's) plans to start *Avian Diseases*, and he offered to serve on the editorial board and assist in any way he could.

His job as Editor was somewhat more than is presently expected of the position. He solicited papers and served as major reviewer. Some papers received a very heavy "helping hand" to get them in publishable form. He worked closely with the printer, even to the point of pasting together the "dummy." When the first issue was sent to the presses in 1957, it was without question a P.P. Levine project. The journal was an unqualified success. From the beginning it was clear that it filled a need, and it has been well supported since its inception.

In addition to the obvious direct benefits to the field of avian medicine that derived from the publication of *Avian Diseases*, there was also an indirect effect of significance. When Dr. Levine expressed interest in relinquishing the reins as Editor, the need to find a "home" for the journal was just the focal activity needed to fulfill some of the major objectives of the newly formed AAAP. Publication of *Avian Diseases* remains to this day one of the most important functions of that organization.

Recognizing his enormous contribution in establishing a successful journal, the AAAP dedicated the August, 1961 issue to Dr. Levine and his wife, Selma, who encouraged and assisted him. They further honored him by designating him Honorary Lifetime Editor.

**Honors.** Dr. Levine's sphere of influence was broad. He was a member and active participant of numerous professional organizations and he served on a variety of editorial boards. A partial list of some of his positions, honors and awards attests to his stature as a respected leader and scientist world-wide.

Editor, *Cornell Veterinarian*, 1942-1946

Associate Editor, *Journal of Parasitology*, 1943-1948

Guggenheim Foundation Fellow, Oak Ridge Inst. of Nuclear Studies, 1947-1948

Recipient, New York Poultry Council Award, 1953

Research Participant, Atomic Energy Comm., 1954-1955

Founding Editor, *Avian Diseases*, 1957

Vice-President, World Veterinary Poultry Association, 1959-1967

Consultant for Rockefeller Foundation Mexico Project, 1960  
Honorary Lifetime Editor, *Avian Diseases*, 1961  
Consultant for USAID Israel Program, 1961-1962  
President, American Association Avian Pathologists, 1961-1962  
Member, advisory committee of the USDA on Poultry Inspection Criteria, 1966-1969  
Director, Post-graduate course on avian diseases, San Marcos University, Lima, Peru, 1966  
Chairman of the session on Teaching Poultry Diseases at the 18<sup>th</sup> World Veterinary Congress, Paris, France, 1967  
Teacher for Pan American Health Bureau, Brazil, 1967  
Consultant for Rockefeller Foundation Ad Hoc Inspection Committee for Veterinary Colleges in Lima, Peru, and Belo Horizonte, Brazil, 1968  
Consultant for Food and Agriculture Organization in Peru, 1969  
President, World Veterinary Poultry Association, 1969-1973  
Honorary Life President, World Veterinary Poultry Association, 1973-1979  
Awarded the degree Doctor Medicinae Veterinariae Honoris Causa by the Veterinary Faculty of Ludwig Maximilian University, Munich, Germany, October 19, 1970  
FAO Consultant in poultry disease control in Peru, 1971  
FAO Consultant in poultry disease control in Israel, 1971-1972  
FAO Consultant in poultry disease control in Mexico, 1972-1974  
Life Membership in the American Association of Avian Pathologists, 1974  
Recipient of American Association of Avian Pathologists Special Service Award, 1976

Immediately following his retirement in September, 1972, he was honored when the Cornell University Board of Trustees named the departmental research laboratories housed in a 2-story building on Hungerford Hill the "P. Philip Levine Research Laboratories for Avian Diseases."

He was influential in the affairs of many organizations such as the American Veterinary Medical Association and the Northeastern Conference of Avian Diseases. Further, he was one of the founding members of the AAAP and tied his support for the creation of the organization to the understanding that membership would be open to all persons with a role in the field of avian medicine, not just those with a degree in veterinary medicine.

**Personal Life and Attributes.** In 1933, a year after finishing his veterinary education, Dr. Levine married Selma Hyman. They had two children, Jonathan in 1939 and Seth in 1942. Selma predeceased him and he later married a friend from his NYU days, Yolanda Levine, with whom he spent several years until his death in 1979.

As a person, there was much to admire in Dr. Levine. First of all, not only was he truly a gentleman in the usual sense, but he was also a gentle man. He commanded the respect of all who knew him, and for good reasons. He did not raise his voice, but used reasoned persuasion to make his point. He would listen to all views and then synthesize constructive advice without demeaning those he felt to be wrong. His judgments were valued and his opinions sought in any group activity or committee with which he was involved. He had a way of sending persons away with the thought that they had developed an idea rather than having had it thrust upon them. He did not want anyone to go to any trouble for him, and he shouldered a good many burdens

himself rather than ask for help. He was seriously ill several times in his last few years but it was not in him to complain, only to look forward to new activities upon returning to good health.

Sincerity and dedication marked his professional life. But there was another side to Philip Levine, to those who knew him as a colleague and friend, and of friends he had many. There was a joviality that was very evident at social gatherings and at informal meetings. He appreciated a good story, and he delighted in telling them. His travels provided him with numerous experiences, which he relished relating. His reputation resulted in many invitations to visit foreign countries – Israel, Germany, Mexico, and many of the Latin-American countries. The warm feeling he had for these people, and the concern he showed in their problems, developed into many lifelong friendships. His visits were particularly appealing to the Latin Americans, because he had the ability to converse with them in their own languages. They loved it, and they had a special affection for him because of it. At any meeting where he and Latin Americans were gathered together, he attracted them like a magnet, and exchanges between them were electric.

As for extracurricular activities, he was an enthusiastic traveler, violinist, handball player, and sports fan. Handball was a passion for him. He once told Bruce Calnek that as a student at CCNY he became enthralled with the game, to the extent that he had to give up the sport because he was neglecting his studies. Many years later, after a brother died of a heart attack, he returned to the sport as a form of exercise, and he spent most “noon-hours” on the handball court at Cornell. He taught Steve Hitchner and Bruce Calnek the fundamentals of the game and we had many delightful games together. He had one of the most wicked low-line shots to the corner you ever saw. In his last years, while suffering from cancer, Bruce Calnek would take him to the courts to play a “pretend” game in which the ball was purposely hit to his forehand so that he could punish it with his favorite shot – clearly in ecstasy.

He was a dedicated family man who enjoyed life outside his professional sphere as well as within it. In all he did, Dr. Levine established high standards for himself. He aimed high. He hit the mark. His imprint was left on the Cornell campus, in the State of New York, in the nation, and in the world. To have known and been associated with a person that had the distinction of P. Philip Levine was a privilege indeed.

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