Donald E. Stover

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Prepared by: Donald Stover
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Reflections

My first work in a poultry pathology laboratory was during vacation in 1929, a year before graduation from Washington State. I was employed by the Los Angeles County Livestock Department, with Dr. L M Hurt, County Livestock Inspector, as my boss. He sent me over to the State Department of Agriculture lab on Mirasol Street in Los Angeles to assist with the diagnostic work. My duties there were under the guidance of Dr. H W Graybill, Supervisor of Laboratories, and Dr. E. E. Jones. Dr. R H Scofield from the County Livestock Department was also in the lab much of the time.

Dr. Graybill, before taking his position with the State of California, was employed by the Rockefeller Institute for Medical Research, New York City. With the background in poultry disease research at the institute he was a strong disciplinarian about procedures to be followed in the lab. Dr. Jones by nature was likewise.

I first met Dr. Jones in 1925 at the home of my parents in Arcadia. He and my father, Dr. T J Stover, were both employed by the Los Angeles County Livestock Department

mainly to conduct tuberculin tests for bovine tuberculosis in dairy cattle. This was just after the big outbreak of foot and mouth disease in California. Dr. Jones was soon assigned to the new poultry pathology lab. A short time later he changed from county to state employment. Of the many veterinarians who worked under Dr. Jones several went on to head the same or other labs. These included Drs William Armstrong, Robert Cofflin, Ralph Cooper, Robert Lewis, Bryan Mayeda, Larry Murdock, John Osborn, David Splaver, Donald Stover, and William Worcester. One or two were there for just a short time. Two of them, Drs Worcester and Orsborn, were later advanced to the position of Chief, Bureau of Laboratories.

I resigned from the Los Angeles County Livestock Department in 1934 and accepted the position of Livestock Pathologist at the San Diego lab. I was there until 1937, at the Petaluma lab until 1944, and in Sacramento as (Regulatory) Poultry Disease Specialist until retirement in January 1965.

During my first 14 months with Los Angeles County there were short periods devoted to poultry meat inspection at a small canning plant, inspections of poultry markets in county territory, and regular meat inspection. In addition, assistance was given in making special investigations of vesicular diseases in livestock.

Always concerned about the possible introduction of foot and mouth disease, public service veterinarians were on the alert for any signs of this disease. Several times during my work with the state I was called on to help make the necessary inoculation tests to identify the condition found. Vesicular exanthema was usually the disease diagnosed in hogs.

Dr. Graybill frequently mentioned working with blackhead in turkeys and doing other research at the Rockefeller Institute. In doing so he would sometimes laughingly mention that Dr. Paul De Kruif, a fellow researcher at the institute, left his job there to write books and articles on medical subjects for pleasure readers. His book, The Microbe Hunters, was widely read. Dr. Graybill always expressed disapproval about anyone changing professions in that way, especially from what he considered to be superior to inferior types of work. He always seemed pleased, however, to have known Paul De Kruif.

Dr. Graybill liked to call attention to his own little frailties and to tell about his unusual experiences, particularly those relating to the labs. In his office early one morning he called out "Jones, Stover come in here." When we got there he said without getting up, "Look at me." We looked. One shoe was black and the other a light brown, both neatly shined. His daily commute by streetcar and bus was about four hours, so it must have been quite dark when he left home.

Later there were a couple of amusing incidents at the San Diego lab. In the Zoological Research Building in which the State lab was located, Dr. Graybill one day turned the

corner in a hall and came face to face with a jaguar. He was terrified and couldn't move, but soon to his great relief the animal turned and went the other way. Another time, while standing and talking with zoo veterinarian Dr. Charles Schroeder, he reached out to rest his hand on what he thought would be the window sill. Somehow it didn't feel right and when he looked, his hand was on a large boa constrictor basking in the early morning sun.

After working on cases in the lab I would sometimes like to make follow up investigations in the field so that better recommendations might be made. I worked under Dr. Graybill's supervision, but since I was employed by the County I thought I had more freedom to make these field trips. Dr. Graybill said more than once, "You can't solve poultry disease problems by burning up gasoline." I have sometimes wondered if he might have been influenced a little by the fact that he never owned or drove a car.

Looking back at the field investigations made during my tenure at the Los Angeles, San Diego, and Petaluma labs and in Sacramento, I now realize that the closer the pathologist is to the case in the lab the better the investigation in the field. There might have been exceptions to this when the laboratory detail was excellent and carefully described on the accession cards.

As time went on Dr. Graybill showed that he was not entirely averse to making field trips, especially where flock management including sanitary conditions or house ventilation might be involved. Sometimes he even went along if he thought the cases were of extra importance.

The Poultry Demonstration Plant at Pomona was one of Dr. Hurt's favorite projects. It can be remembered as a group of small clean well ventilated houses. Any practical information that might be developed here was made available to the poultry industry. Mr. Irving Denny was the plant manager. Dr. Ralph Scofield supervised the project and planned most of the work. In my mind I can still see this big blonde man at his desk, with a big cigar in his mouth, a well sharpened yellow pencil in hand, planning his next demonstration project.

While in Los Angeles I attended every meeting of the Poultry Service Club. Dr. Hurt had proudly organized this group. Anything on poultry could be discussed. In addition, there were selected speakers. The meetings in general were casual and pleasant affairs.

A regular attendant and frequent speaker at these meetings was Dr. Cliff D Carpenter. He was great. He had a private lab, carried a line of pharmaceuticals and was a general consultant to the poultry industry. Later he operated nationally under the name Cliff D Carpenter Associates. A slender, wiry man, he talked, walked and did everything fast.

Never using notes Dr. Carpenter could speak with a speedy delivery for an hour or more. If necessary, he could do it extemporaneously. His memory was fabulous. The only time I saw him falter was 30 years later on the way from downtown Sacramento to the airport. He insisted I was driving in the wrong direction and should turn around. We arrived in plenty of time for his flight. Of course this incident might have showed only a slight flaw in his sense of geographic direction, not memory. His speech and discussions at the Sacramento meeting had been superb. In 1965 he was named first president of the newly organized United States branch of the World Poultry Science Association.

Soon after my move to the San Diego lab in 1934 from Los Angeles it was noted that diseases in the large turkey population were causing high mortality. Pullorum disease and coccidiosis were common. It was evident later that hexamitiasis was there too. Dr. Ethel McNeil came down from U C Berkeley and kindly helped us to find and identify the intestinal parasite involved. She and Dr. W R Hinshaw, U C Davis, developed the bluestone and whey treatment which was widely used until a commercial method of treatment was developed.

Drs. Hinshaw and McNeil were soon to begin making extensive studies of Salmonella typhimurium infection in turkeys. This condition was causing heavy losses statewide in young poults and was one of the industry's most serious problems.

In 1937 I received instructions from Sacramento to prepare for a transfer to the Petaluma lab. Dr. Leo Conti, zoo veterinarian for a short while and with office also in the Zoological Research Building, said "You may not like it at Petaluma. I just came through there, and the work load is so great that all of the crates and sacks of poultry come into the lab on a moving belt."

Often the practical joker when he wasn't serious, Dr. Conti liked to mix in a little fun. A visiting poultry veterinarian from a commercial lab was being informed about experiments with growth hormones. "Now take this guinea pig here." Dr. Conti said, pointing to an animal with the same general conformation of a normal guinea pig but was about three feet long. The visitor with mouth hanging open stared long and hard and then turned to Dr. Conti, who was grinning by now. The animal was an Australian wombat, which could have been brought up to the holding pens for no other purpose than to entertain visitors, especially his professional acquaintances.

In Petaluma around 1938 I visited the small ranch of Mr. George Nicholas. He had a little flock of chickens and about 17 turkeys. The purchase of these turkeys might well have been the very beginning of the project that was to become the Nicholas Turkey Breeding Farms. I'm quite sure that Mr. Nicholas mentioned he would be consulting with Dr. V S Asmundsen, poultry geneticist, whom he had studied under at U C Davis.

Dr. Walter Brandner was a contemporary of Dr. D E Davis, owner of the widely known Chicken Pharmacy in Petaluma. In his large general practice Dr. Brandner devoted much time to poultry. Like Dr. Davis he did a lot of vaccination work. The fowl pox vaccine he used was prepared in his own lab.

When Dr. Davis retired in the fifties, Dr. William Dungan took over his work. He dropped the Chicken Pharmacy name and moved into new quarters on the same street.

In the Petaluma lab around 1940 there was a lot of activity in dealing with what appeared to be a new disease in chickens. After much effort a virus was isolated from a group of chicks in 1941. An article telling about this finding was published in 1942. In 1992, the 50th year after the publication I wrote a letter to retired Laboratory Technician Joseph Perelli-Minetti dated May 14 1992 to review our accomplishments during that early period. Following are excerpts from that letter:

> *"While working at the Poultry Pathology Laboratory, California Department of Agriculture, Petaluma, you and I were the first to isolate the virus of Newcastle disease in the USA and Western Hemisphere. This was an important diagnostic effort. (A Filterable Virus, the Cause of a Respiratory-Nervous Disorder of Chickens; American Journal of Veterinary Research, April, 1942)*
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> *In 1941, about the time the article referred to was submitted for publication we gave a sample of the virus to Dr. J R Beach, University of California, Berkeley. He determined that this and other strains of the virus he subsequently recovered from poultry flocks in California were related to the virus of Newcastle disease. Through the US Department of Agriculture, he had procured from England in 1943 Newcastle disease antiserum to run neutralization tests. Incidentally, you suspected from the start we might be dealing with some type of Newcastle disease, and that was the main reason we did not immediately try to give the respiratory-nervous disorder a name.*
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> *As a direct result of our work in recovering the virus at Petaluma, in 1941, the development of successful vaccines by researchers soon followed, thus preventing the poultry industry in California and other states from sustaining further great losses.*
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> - *Killed chicken embryo propagated vaccine: Dr. J R Beach, U C Berkeley. Highly effective in preventing mortality but not effective later in preventing drop in egg production when vaccinated flocks were exposed to field strain of the virus*
>
> - *Unmodified live virus vaccines, using selected mild strains: Commercial laboratories. Highly effective but sometimes caused rough reactions.*

- *Tissue culture vaccine: Dr. R A Bankowski, U C Davis. Highly effective in preventing mortality and drop in egg production."*

Drs Bankowski and Robert Wichmann opened up their own lab near Davis and produced the tissue culture vaccine (TCND) for commercial use. The vaccine was used on all entries in the official egg laying test at Modesto and widely distributed elsewhere.

Dr. Beach dropped the designation respiratory-nervous disorder and called the disease avian pneumoencephalitis. Later the original name Newcastle disease again came into common use.

Right after Dr. Beach did his main work on Newcastle disease Dr. Paul DeLay, U C Berkeley, demonstrated that the California strain of the virus could be spread from one group of chickens to another group through the air. This finding tied in with our observations at the Petaluma lab that numerous outbreaks of the disease sometimes occurred soon after dry winds.

Dr. DeLay left his employment at U C Berkeley in 1947 and took over the Sacramento lab after the death of Dr. H A Hoffman, who had been in charge. Dr. Hoffman had just started working on plans for new labs in the state to replace the old. Dr. DeLay went on with the project, adding many innovations. Over the next few years new labs were completed in Sacramento, Fresno, San Gabriel, Turlock and Petaluma. A lab in Lancaster was built later. These attractive buildings were a big improvement over the dark basement in Sacramento, the little pink stucco at Petaluma, the small gray frame in Los Angeles, and the chicken house type in Turlock. The labs in Fresno and Lancaster were newly established.

As Poultry Disease Specialist I worked closely with the Poultry Improvement Advisory Board, which administered the disease control phase of the National Poultry Improvement Plans. The National Plans program in California began in 1944. Dr. James Harr was just the man to become the first Board Manager. Using our laboratory testing facilities he soon had the pullorum-fowl typhoid testing program going full speed.

During my tenure Dr. Harr was succeeded by Dr. Robert Mueller and Mr. Murray Davison. In the mid-fifties I helped Dr. Mueller to rewrite large sections of the marketing agreement to conform with changes made in the National Plans. Mr. Vernon Shabazian from the Bureau of Markets gave us expert assistance. At this same time we revised the wording in the marketing agreement in a way that would recognize the achievement of the pullorum disease-fowl typhoid clean class of all participating turkey breeding flocks in the state.

With the complete eradication of pullorum disease and fowl typhoid in turkeys in California there was now talk in the early sixties of introducing official testing for

Salmonella typhimurium infection under the National Plans. An official California State program had long been in effect. In the previously mentioned early studies of the disease by the University of California, blood tests along with other appropriate measures were shown repeatedly to give good results. The State Department of Agriculture then made extensive investigations of the disease, using the same blood samples drawn for the official pullorum tests. It was demonstrated that by using the two specific H and O antigens the results were excellent. The infected turkeys were easily identified. Bacteriological examinations of a few reactors from each infected flock were then made to confirm the results of the tests.

The effective State testing program would lead to related investigational work in testing for other Salmonella infections. For example, in the early sixties Dr. Richard McCapes, working privately with a large turkey breeding flock, reported good results in testing for other Salmonella infections using antigens prepared in his own lab.

Many large chicken breeding flock owners in California operating outside of the National Poultry Plans had very effective pullorum disease control programs of their own. Some of these employed full-time veterinarians.

In 1963 Dr. J E Stuart, Chief, Division of Animal Industry, requested that I write a pullorum disease-fowl typhoid regulation for California, setting forth requirements for shipping into the state eggs or poultry not intended for immediate slaughter. I got some good help from the Department attorney and Dr. H G Wixom, Chief, Bureau of Animal Health. The proposed regulation, before going into effect, was approved by representatives of the poultry industry at a formal meeting in Sacramento.

Canada required that turkey breeding flocks here be in a healthy condition and inspected just prior to shipment of hatching eggs into their country. I made some of these inspections but most were made by federal veterinarians or by veterinarians from the several district offices of our Bureau of Animal Health.

In the years between 1947 and 1965, Dr. R A Bankowski, U C Davis, and I attended nearly all meetings of the Poultry Improvement Commission, which controlled the operation of the egg laying test at Modesto. Dr. Bankowski attended the meetings over a longer period. Our main function was to oversee the disease control program we had developed and instituted. Many visits were made to the plant. For an effective test the many entries had to be kept in a healthy condition. With the close cooperation of the management the program was highly successful. Incidentally, immunization against several kinds of coccidiosis was obtained through use of a vaccine developed and prepared by Dr. E M Dickinson, Oregon State University, Corvallis, Oregon.

During my tenure as Poultry Disease Specialist there were investigations of outbreaks of such diseases as lethal Newcastle disease in exotic birds, spirochetosis in turkeys, Salmonella infections (paratyphoid) and paracolon infections in chickens and turkeys,

psittacosis in pigeons and ornithosis in turkeys. Veterinarians at U C Davis worked several times in close cooperation with our own labs. Dr. K F Meyer of the Hooper Foundation for Medical Research in San Francisco had a very special interest in suspected cases of psittacosis and ornithosis and received from us many specimens from the infected flocks.

In 1950 an outbreak of a highly lethal type of Newcastle disease occurred on an exotic bird farm in Contra Costa County. The diagnosis was made by Dr. William Mathey, U C Davis. An immediate quarantine was established by the Bureau of Livestock Disease Control. State and federal officials then ordered the destruction of all birds on the premises. Inspections later of other bird farms recently receiving specimens from the infected premises revealed no evidence of spread of the disease.

The owner of the large collection of birds that were destroyed was cooperative but angry. I was unhappy about the situation. One or two of the other officials might have been too. The owner said we had severely damaged his livelihood even though the indemnity was to be based on prices listed in his own catalogs. His main complaint was that his entire career had been devoted to developing strains of rare birds that would reproduce well in captivity, and now these accomplishments were gone. We said he could probably buy back some of the progeny of his own stock. Smiling just a little at my own state of mind one of my superiors said "Maybe you are too much impressed with a bunch of pretty feathers." The regulatory work was not always pleasant.

Over the years there were numerous consultations with people from the University. Soon after my permanent employment at the Los Angeles lab in 1930 I had met Dr. J R Beach, U C Berkeley, and Dr. W R Hinshaw, U C Davis. Both were helpful on many occasions in the several areas in the state in which disease investigations were being made. Those veterinarians consulted frequently in the later years at U C Davis were Drs Henry Adler, R A Bankowski, Livio Raggi, A S (Rosy) Rosenwald and Donald Zander. Others consulted from time to time are named elsewhere in this history.

Dr. Rosenwald was the Agricultural Extension Service Poultry Pathologist. I remember him as being very dedicated and always well informed. He founded the Western Poultry Disease Conference and has since worked hard to make it a highly respected permanent organization.

In our own lab system the veterinarian I consulted most often was Dr. Bryan Mayeda in the Sacramento lab. He was exceptionally knowledgeable in the field of poultry pathology. Fortunately for me we both had offices in Sacramento.

I felt it was part of my work to keep in touch with the practicing veterinarians working part or full time on poultry. There were also the contacts with the veterinarians working full time for large poultry breeding farms.

Just before my move to San Diego in 1934 Dr. Carl Wallen who had been in charge of the lab resigned and accepted a position with Puritan Poultry Corporation in Atascadero. This was a very large egg farm. The size of this plant at that early time seemed phenomenal. Dr. Wallen would have been one of the first, if not the first, veterinarians to work full time for a poultry enterprise in California. An officer in the company said "After you have studied our operation, lean back in your chair and think of all the things we can do to prevent disease and increase egg production."

By the sixties and later the industry was changing dramatically from the small to the very large, and movements away from the towns and cities were very noticeable. For a long time, cattle operations had been moving to more suitable locations.

From time to time there were requests for changes in laboratory locations. The first one I heard about was in 1962 when a large chicken breeder expressed the desire to have the San Gabriel lab closed and a new lab established near Riverside.

It soon became evident that this and other appropriate changes would eventually have to be made for the convenience of owners and to maintain high levels of health in their poultry or other livestock. Funding for any large early changes, however, would prove to be a major problem. First there would have to be a waiting period and much careful planning. Most of these needed changes would be made under a new diagnostic laboratory system with headquarters and the central laboratory located at U C Davis.

Addendum: Donald E. Stover died February 6, 1997 in Napa, California at 90 years of age. From 1930-1934, Dr. Stover was a laboratory and field veterinarian for the Los Angeles County Livestock Department. For the next 10 years, he was a laboratory veterinarian for the California Department of Food and Agriculture, and then, the poultry disease specialist in the field regulatory unit until 1965. In 1942, he and his staff isolated the causative virus of Newcastle disease, possibly for the first time in North America.

Dr. Stover co-founded the Western Poultry Disease Conference, served as president in 1956, and posthumously received its Special Recognition Award in 1997. He was a life member of the California VMA. (from AVMA obituary)

His date of birth is not available, but is presumed to be in 1906.

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

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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
WWW: http://www.lib.iastate.edu/spcl/index.html