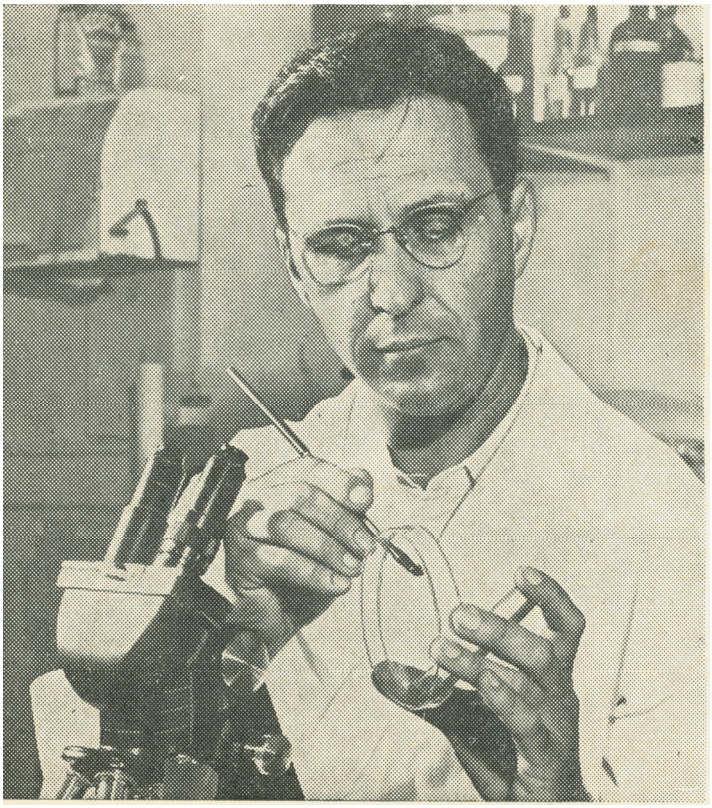
The Crecelius Years (1948 to 1975)

The relative instability of the Depression and war years with regards to the laboratory director was stabilized in the late 1940s for a span that lasted until about 1990. Dr. H. Gilbert Crecelius, Ph.D. in Bacteriology, became the laboratory director in March of 1948. Dr. Crecelius had worked for the South Dakota Health Laboratory during his undergraduate years before leaving to get a Ph.D. from Yale. Dr. Crecelius became an instructor in Bacteriology at the University of New Hampshire before leaving for military service. He was a member of the army reserves and had served in World War II (WWII) doing five years in the Sanitary Corps. After WW II, Dr. Crecelius became the Assistant Director of the Kansas Public Health Laboratory where he remained until coming to Arizona.

This time, the department was fortunate that Dr, Crecelius had already served his country and he was able to give full-time to the health programs. The need for additional laboratory space was obvious, so one of Dr. Crecelius's early endeavors was to obtain funds for a more modern laboratory. The present Phoenix location was determined to be a hazard to people within the building, since it was an office building which held non-laboratory personnel. It was also determined to be a threat to the lab staff, due to the lack of safe equipment and areas to work, when they had to work with infectious materials. To top this off, the current building itself was unstable since its foundation was resting on water-logged soil.



Dr. Crecelius in a 1954 Picture

In June of 1949, Dr. Crecelius in an article of the Arizona Public Health News noted that the State Laboratory was seeing a sharp increase in the number of specimens submitted to the laboratories to test for diarrheas and dysentery. The article stated that these diseases, which are transmitted primarily through water, milk supplies, flies and general habits of insanitation, are believed by many authorities to be one of the major causes of Arizona's high infant mortality rate. These samples were being received from all over the State.

Around 1950, there began to be many changes in the laboratory's methods. To keep up with these changes, staff members attended refresher courses. Following this, came the Public Health Service evaluation of the State Health Laboratories. They would ship five specimens to the different sections of the laboratory periodically, giving a defined time for their completion. Then came the evaluation of all laboratories in the state and these evaluation specimens were put out by the different State Laboratory sections. Dr. Crecelius stated that, "We had learned some lessons from our experience and tried to help these workers when it was our fault the specimens were not in good condition."

After a number of tries, $250,000 was finally appropriated to the Department of Health Services to build a new laboratory in Phoenix. On December 1, 1953, the Department was able to start building the new laboratory. This was kicked off with a groundbreaking ceremony by the Governor, Howard Pyle and Dr. Clarence G. Salsbury, the Health Department Director. The ceremony was broadcast live over radio station KTAR and viewed by television audiences on Arizona TV Newsreel over KPHO-TV Channel 5. The new laboratory was touted as the first building that the State Laboratory had that was its own facility not shared with another agency.

Dr. Clarence G. Salsbury (microphone) and Governor Howard Pyle (with shovel) at 1953 Groundbreaking Ceremony

On October 1, 1954, a dedication was held to cut the ribbon and officially open the new building at 1716 West Adams Street, Phoenix. This ceremony included a welcome by Dr. Salsbury, talks by two State Senators, a dedication address and a ribbon cutting by Governor Howard Pyle. A tour of the new lab was given showing that this building was sufficiently equipped for the sections of bacteriology, tuberculosis, virology, chemistry, service department, director's office, mailing and receiving room, clerical room and a library.

Arizona State Health Laboratory in Phoenix (1954-1976) -1716 W. Adams Street

The new State Health Laboratory quarters gave an opportunity to serve more adequately the increasing population of Arizona with the greater demands for health services. The new laboratory provided expanded quarters for the overcrowded TB/mycology and virology sections.

All kinds of animals and one human brain have been examined for rabies over the years and were received in all kinds of condition. Some so decomposed they were useless for stained impressions. For many years, the stained impression method was the only method known. This method was both expensive and slow. While a new method was developed for rabies that required taking the infected animal tissue and inoculating extracts into mice, the old lab had no place to keep these mice. Those specimens where no Negri bodies were found were sent to the CDC in Atlanta for confirmation. In 1954 with the opening of the new laboratory, an animal room was provided so the laboratory could perform its own confirmation.

Shortly after the new laboratory was opened in 1954, there was a request to examine the stool specimens of the employees of one of the largest beef cattle companies in Arizona for tapeworms. This company was losing money when the beef was

condemned by the packing house because of this infection. This was a big undertaking for a small staff. With the cooperation of the company and the employees, the work was completed. One employee was found to be infected. Repeated specimens gave the same results. Following this experience, the State Veterinarian and the Laboratory Director had a cooperative program to find out how long it took an animal to become infected after they were exposed or accidently picked up a proglottide (segment of a tapeworm's body) when feeding. The State Veterinarian purchased some calves and after carefully marking them in pairs, the proglottides were added to their feed. After the first six weeks, the first two were slaughtered. It was surprising how fast the infection had spread. The plan was to examine two every six weeks. However, before the experiment was completed, the animals became so dehydrated and sick, they had to be destroyed. It was impossible to complete this experiment because of the cost.

By July of 1958, the three State Health Laboratories were performing testing on 178,381 samples for a wide variety of microbiology and chemistry specimens. Of these, 76% were performed in Phoenix, 19% in Tucson and 5% in Flagstaff. The majority of these specimens (119, 976) were tested in the serology sections. One of the new serological services established in 1958 was the complement fixation test for coccidiodomycosis (Valley Fever).

In Dr. Crecelius's 1957-1958 Annual Report, he stated that, "The number one problem in the administration of the laboratories continues to be the low salaries paid to the personnel. This is reflected in the loss of key personnel; naturally those that are the best trained. The chemist, who had been with us for four years, resigned about the middle of the year. It has been impossible to recruit new personnel to fill this position, even offering a salary above the minimum. This is working a needless hardship on all of the activities of the laboratory and is reflected in the services which support the over-all public health program. This could and should be relieved at the earliest possible time."

1958 was also a pivotal year for the laboratory branch in Tucson. New quarters were allotted to the Laboratory in the new State Office Building which was currently under construction at 416 W. Congress Street. The Tucson Branch Laboratory moved in 1959 from underneath the University of Arizona Stadium to its new 3200 square foot laboratory.

Tucson Branch Laboratory (1959-2009) – 416 W. Congress Street

Up until 1960, the Public Health Service in Atlanta was doing all identifications for *Salmonellas*. The Public Health Service was using the Phoenix laboratory to investigate a dysentery outbreak at an Indian Reservation. It was during this investigation that Arizona's paracolon was first identified. In 1960, arrangements were made for a bacteriologist to learn the technique for typing the *Salmonellas*. As this work progressed, the typing of the dysenteries was also undertaken at the state level with the Public Health Service providing prepared sera to the State Laboratory. The reason for these typings was to be able to locate a carrier in an outbreak, especially *Salmonella*. This happened in one of the hospitals in Tucson. The cultures received were of the same type and this was brought to the attention of the Director who made a call to the hospital. One of the helpers that had not been ill was found to be a carrier.

In early 1962, a businessman in Arizona wrote a letter to various physicians and schools that Arizona milk and dairy products were contaminated with pesticides. He also stated in the letter that U.S. health and agriculture officials had discussed with him federal seizure of some Arizona products. This led private groups in the Valley to seek support of an initiative measure on the November ballot providing for new regulations of agricultural chemicals. In early April of 1962, the Dairy Commissioner in an attempt to quell the controversy stated that, "present quantities of pesticide residue in milk and other products are not dangerous to the health of the consumer." The Arizona Republic, however, found that the State Laboratory had already been testing for these residues and had found significant levels of pesticides in some of the dairies. They also found that

health authorities on more than one occasion had removed dairy products from the market.

Pesticide limits were set and a program, with the approval of the Dairymen and other agricultural commodity groups, was rolled out in January of 1964 to monitor pesticide residues with $25, 400 being allocated by the Legislature for testing. This testing of over 6,000 specimens of milk from checks every two weeks occurred in the State Laboratory and various private laboratories. Results were reported to a special advisory committee that gave recommendations to the dairymen in a volunteer program. In an October 12, 1965 article, Dr. Crecelius stated that Arizona's milk industry may have been saved from economic ruin through a cooperative effort by health officials, research agencies and dairymen which now had brought the level on par with the national average. In November of 1965, a firestorm erupted with the State Health Department when health officials admitted they had kept from the public for over a year that the state's milk supply initially was contaminated with pesticide residues nearly double the national average. Health officials claimed that they did not have the authority to announce the problem since the Legislature had given the authority to the Dairy commissioner in 1953. Arizona's milk was said to be the most contaminated in the nation and the Federal government had banned the exportation of milk produced in Arizona to be sold outside the State.

In late 1966, the State Health Board authorized the health department to expand its pesticide tests to take in meats, fish, vegetables and eggs. On February 6, 1967, the State Laboratory on Adams had an explosion and fire. Dr. Crecelius stated, "With the explosion and fire our testing of pesticides in milk became limited and we had to abandon our testing of other foodstuffs." Attempts by the Department to get the Legislature to authorize funds to restore it failed. Dr. Isaacson, of the Department in May of 1967 stated that the Department was researching means of restoring the laboratory through insurance or diversion of departmental funds rather than await a new session of the legislature. However November 1967 articles still said that the lab was not repaired.

By July of 1967, the Federal Government had lowered the pesticide residue levels in milk to 1.25 ppb. Dr. Crecelius told the press that, "Any milk outside the Salt River Valley is okay. The Salt River Valley is the big combined agricultural and dairying area." Dr. Crecelius further stated that only 25 of the State's 180 dairies met the new limits.

In December of 1967, the Dairymen were ready to battle the DDT pesticide crop dusters so that the residues would go down and they could resume selling their milk. Dr. Crecelius got in the middle of the battle when he stated, "there is no evidence that the substance is harmful to man." Dr. Crecelius did note that there is enough concern over the possibility that it may be harmful to warrant expenditure of $18 million by the federal government in a study to determine the long-range effect of consumption of DDT. New funding obtained by the State in mid-1968 led the State Laboratory to announce that it was ready again to test pesticide residues in vegetables.

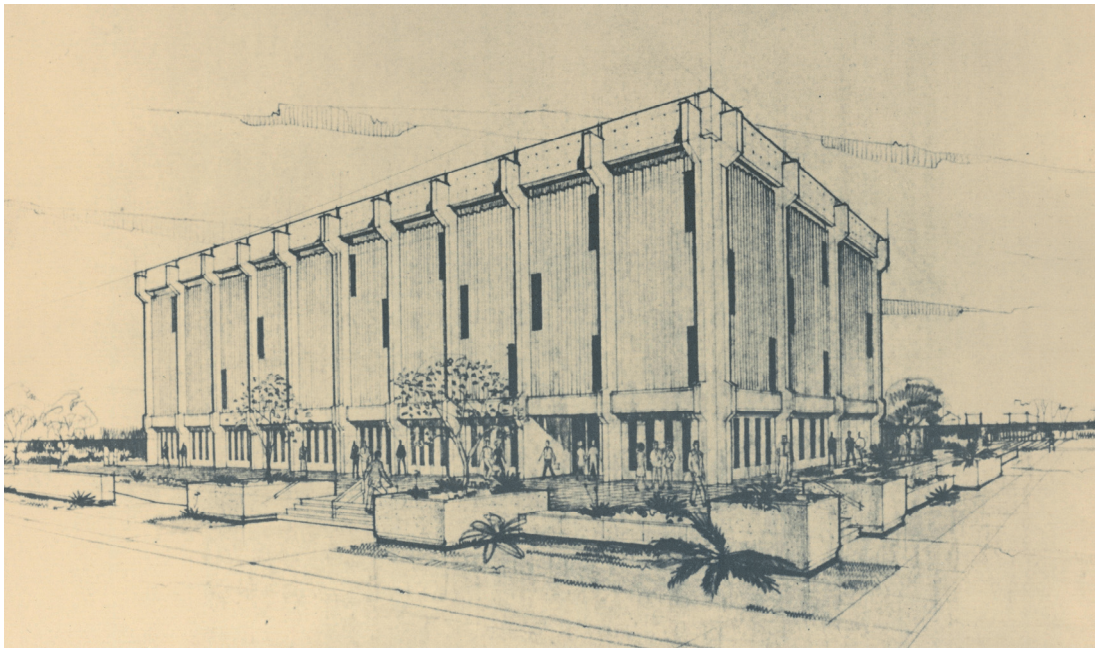
Phoenix State Health Laboratory Employees Around 1970

In the early 1970s, the laboratory again outgrew its facilities. The Environmental Chemistry section of the laboratory was again being increased due to the 1972 Federal Clean Water Act mandating testing for industrial discharge into rivers and lakes and the 1974 Safe Drinking Water Act.

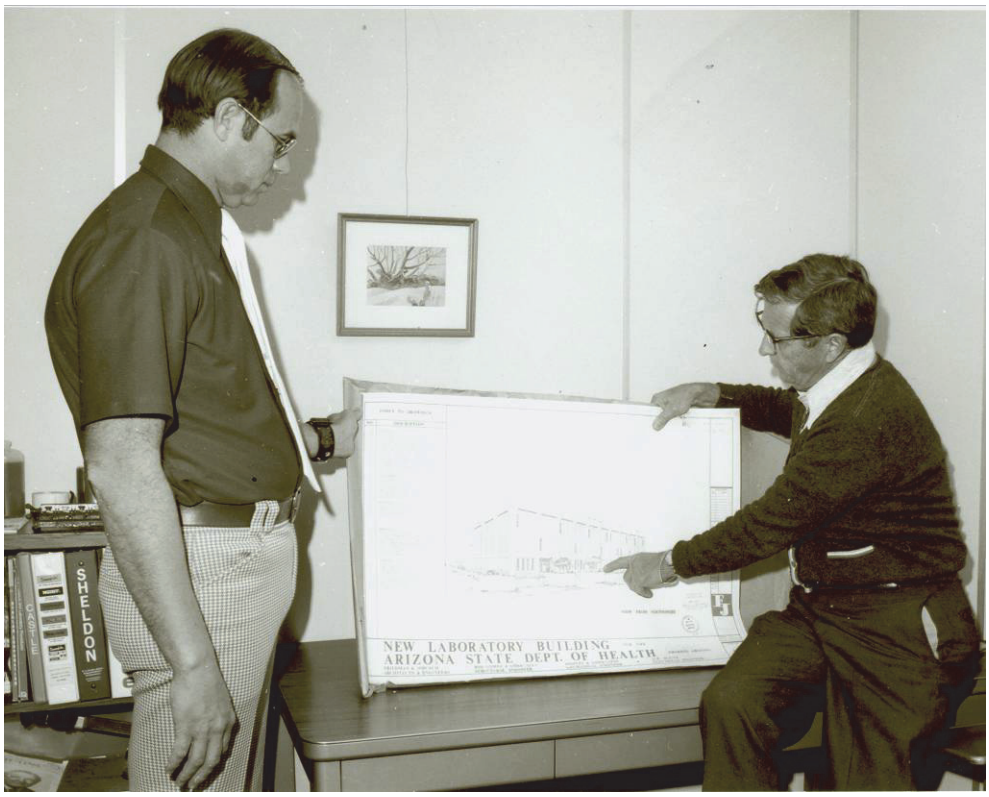
John Roberts is preparing cultures for the
Isolation of Cocci organisms (1975)

Pat Adler and Dorothy Halwick are performing chemical
Water analysis (1975)

Dr. Crecelius again began the process of trying to get the Legislature to appropriate funds to build a new laboratory. A four story laboratory with windows was designed and planned by Dr. Crecelius.



Original 4-Story Laboratory Plans for 1520 W. Adams



Dr. Jon Counts (left) and Dr. H. Gilbert Crecelius Discuss Revised 3-Story Plans

The legislature would not appropriate funds to build this laboratory, but did appropriate funds finally to build a three story building with no windows on the second and third floors. In 1975, Dr. H. Gilbert Crecelius retired as Director of the State Laboratory. However, Dr. Crecelius continued to work on the plans and construction of the new State Laboratory building.