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THE LABORATORY SECTION OF THE CALIFORNIA STATE BUREAU OF CRIMINAL IDENTIFICATION AND INVESTIGATION

David Q. Burd

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The Laboratory is one of five sections in the Bureau of Criminal Identification and Investigation which is a part of the Department of Justice of the State of California. The Director of the Department is the Attorney General of California. Approximately 280 persons are employed in the Fingerprint, Record, Special Services, Investigation, and Laboratory sections of this Bureau.

First established in 1905 by the State Legislature as a central depository for fingerprints, the Bureau was discontinued in 1909, due to the fact that no money was appropriated for its operation. In 1917 the State Legislature re-established the Bureau (Statutes of 1917, which will be found in Deering's General Law of California as Act 1904). This act, with many amendments, now governs its operation. At the present time, it is not only one of the oldest State Bureaus of Identification and Investigation, it is one of the largest, if not the largest State Bureau in the entire country. As a service agency for more than 305 police departments, 58 sheriffs offices, 58 district attorneys, and for numerous other local and State government agencies, it receives and processes a tremendous amount of work every month of the year. At the present time, more than 40,000 fingerprint cards and thousands of crime reports, pawn shop reports, stolen property reports, gun permits, etc. are received and processed each month.

Although some types of physical evidence were examined by technicians in the early years of the Bureau's operation and a very limited amount of scientific equipment was available, a regular Laboratory Section was not started until 1931. In that year, one civil service position of Chemist and Ballistics Expert was established, and some new equipment was obtained. Since then the Laboratory Section has expanded greatly in facilities, equipment, personnel, and case load.

The laboratory conducts examinations and comparisons of all types of physical evidence involved in criminal cases in the State of California, with the exception of questioned documents and latent fingerprints. Handwriting, typewriting, and other related document examinations are handled by experts in the Questioned Document Unit of the Special

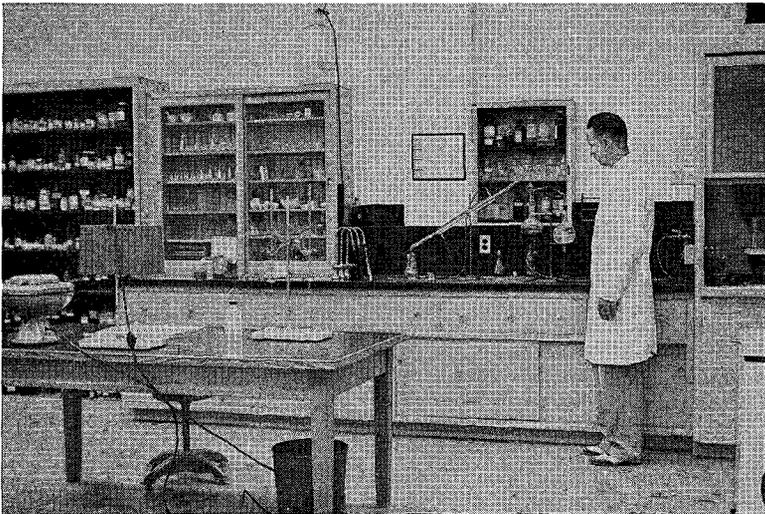


Figure 1

Section of the Chemical Laboratory

Services Section. Latent fingerprinting processing and searching is a joint responsibility of technicians in the Fingerprint and Special Services Sections. This arrangement provides for the correlation of all information derived from crime reports, teletype bulletins, and other data processed by these sections of the Bureau with the questioned documents and latent fingerprints being studied. The personnel conducting this work have access, when needed, to the necessary optical and other instruments in the laboratory, in addition to their own special equipment.

A Polygraph Specialist is also attached to the Special Services Section of the Bureau, and a soundproof room is provided for the interrogation of persons suspected of having committed criminal offenses. In most instances, however, interrogations are conducted in the field where the Polygraph Specialist works independently or with Special Agents of the Bureau or local law enforcement officers. At present, one lie detector is available, and an additional instrument is on order.

With the exception of the special types of examinations mentioned and those requiring specialized medical knowledge, such as in the fields of pathology, all other scientific examinations are handled by the Laboratory Section. Criminologists are available to local law enforcement agencies, whenever needed, to conduct examinations, prepare reports, and to testify in court. In addition, in crimes of major importance, they also are available to aid local officers in the collection of physical evidence or assist in the investigation of crimes where scientific knowledge is required.

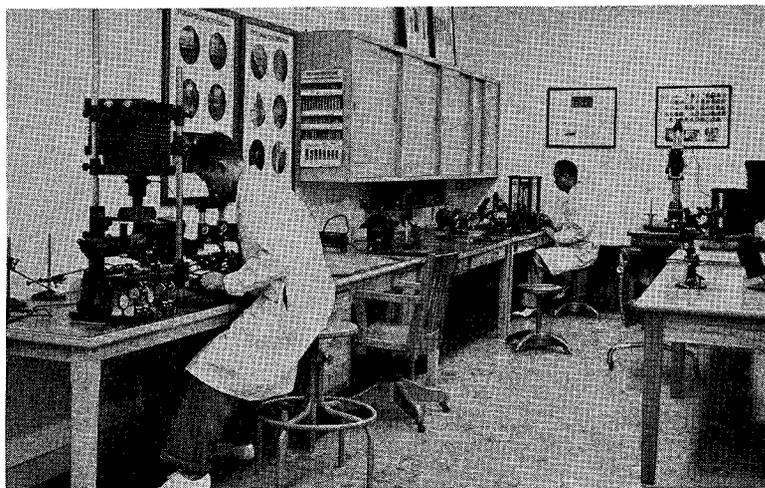


Figure 2

Microscopic and Photomicrographic Equipment

At present, the staff of the laboratory consists of three civil service employees having the title of Criminologist. The requirements for this position include education equivalent to graduation from a university with specialization in technical criminology, chemistry, or closely related science and three years of experience in law enforcement laboratory or other appropriate experience. The present personnel are all graduates of the University of California, two with degrees in chemistry and one with a degree in technical criminology.

Although three Criminologists may seem a very small number for a laboratory in a state with a population of over ten and a half million, they are presently able to carry out all examinations which are requested. This is due to the fact, as mentioned above, that latent fingerprint, questioned document, and lie detection assignments are handled by other specialists in the Bureau. In addition, a number of the larger cities and counties have their own crime laboratories and conduct either all or part of the examinations required in their jurisdiction.

The space devoted to the Laboratory Section consists of five rooms, having a total floor space of approximately 1200 square feet. These rooms include an office and library, evidence storage room, shop for glass blowing and tool work, a very large general purpose laboratory room (Figures 1 and 2), and a spectograph room.

Photographic rooms adjoin the laboratory and are available for use by certain technicians from all sections of the Bureau. These consist of three darkrooms, a camera room, and a utility room for mixing solutions,

drying and mounting prints, and other uses. These rooms occupy approximately 1000 square feet. The photo equipment in these rooms includes two 8 x 10 cameras with various lenses and lights, an 8 x 10 and a 4 x 5 enlarger, contact printers, a photostat, automatic print washer, film dryer, print dryers, dry mounting press, and other darkroom equipment. A wire-photo machine is also installed in one of the darkrooms.

Since the end of World War II much of the original equipment has been replaced, and many new instruments obtained. The usual laboratory furniture is available, including a fume cabinet and refrigerator. Chemical and related equipment available includes a Beckman model DU spectrophotometer with both incandescent and ultraviolet light sources, a Beckman pH meter, an electric furnace, analytical and torsion balances, micro-furnace, centrifuge, electric steam bath, and vacuum pump.

For spectrographic analyses there is an A.R.L. 1.5 meter grating spectrograph with rectifier unit. Other spectrographic equipment includes an A.R.L. comparator-densitometer and a motor driven electrode cutter and saw.

The microscopic equipment includes a new comparison microscope for bullet and tool mark comparisons, as well as an older one which has been adapted with substage condensers for fiber and related comparisons, although the latter is also often used for firearm and tool mark comparisons. Two stereoscopic microscopes are used for preliminary sorting of evidence and other examinations conducted under low power. A binocular phase microscope which has been found particularly helpful in seminal stain examinations is used for most routine microscopic work. A polarizing microscope for crystal studies is available, as well as a monocular medical type microscope for routine microchemical testing of narcotics and other chemicals. An Ultropak illuminator with objectives is adaptable for use on several of the instruments when vertical illumination is desired. Other equipment includes a microtome, various micro-meters, illuminators, and numerous other accessories.

In addition to two 5 x 7 photomicrographic cameras used with the comparison microscopes, another 5 x 7 camera and stand is used for routine photomicrography and photomacrography. Recently a new Orthophot photomicrographic camera with all accessories including an electronic photometer was obtained which is used for color, as well as black and white photography. The photographic equipment also includes several 35 mm cameras, one of which is a Leica with a telephoto lens and photoflash equipment. Four 4 x 5 Graflex cameras are used by the Laboratory and Investigation Sections of the Bureau for photography in the field.

A refractometer and sodium vapor lamp are available for refractive index studies. With this equipment is a constant temperature bath and circulating system equipped with a differential thermometer which is used for refractive index and density determinations and comparisons.

The services of the Laboratory Section are available to all local and state law enforcement agencies in California without charge. No restrictions are placed upon the submission of evidence except that it must pertain to a criminal investigation. Although a large volume of work is conducted in misdemeanor cases, special emphasis and priority are always given to major criminal offenses.

As an indication of the volume of work handled by the Laboratory Section of the Bureau, 912 cases were received during the fiscal year 1951-52. These cases required 2,763 separate examinations or comparisons. In connection with these cases, Criminologists presented expert testimony on 148 occasions at hearings and trials before various courts.