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ORGANIZATION AND STANDARDIZATION OF POLICE SCIENCE TECHNICS

Ralph F. Turner

Ralph F. Turner is an Assistant Professor of Police Administration at Michigan State College and previous to this appointment was Superintendent of the Kansas City (Missouri) Police Laboratory. As a qualified forensic scientist he can appreciate the problems confronting workers in this field of criminal investigation. At every opportunity he has urged that groups of technical investigators band together to establish basic methods and to standardize in as far as possible the procedures in the various branches of police science. To further this program Mr. Turner took an active part in the First American Medico-Legal Congress at St. Louis last winter and has continued subsequently as Secretary of its Steering Committee—a committee charged with the investigation and establishment of a permanent organization.—
EDITOR.

The problem of the organization and standardization of police science technics has concerned this writer and several of his colleagues¹ for many years, and it was felt that some concerted effort should be made to realize such a program. With this thought in mind, a paper discussing a plan was presented before a meeting of the newly formed Michigan-Ontario Identification Association on September 27, 1947, at East Lansing. Essentially the same paper was presented at the First American Medico-Legal Congress in St. Louis, January 19, 1948, and is now incorporated in this article.

The field of police science at present appears to be reaching a fork in the road. If one looks back over a period of years, it is apparent that the pattern for scientific crime detection has been formulated. The science and skills of firearms identification, fingerprint identification, serology, toxicology, document examination, detection of deception, and a score of related technic have been established. More important than this is the fact that the public has been exposed, by the press, radio, and current literature, to tales both of fact and of fiction, in which forensic science plays a prominent role; and the citizens have begun to expect these miracles to be performed in their communities when the occasion arises.

In an attempt to keep pace with our current progress, a large number of forensic science experts have developed, and as we may expect, the quality of their work is variable. It is not meant to imply that their integrity is questionable, for the majority of the technicians are sincere in their efforts. However, if forensic science is to continue to grow and improve, it is imperative that

¹ Capt. E. I. Hockaday, Mo. State Highway Patrol, and J. E. Davis, formerly Laboratory Technician, Mo. State Highway Patrol. See *The Technician*. Vol. 1, Nos. 2, 4, 9. (1943) (Published by Mo. State Highway Patrol).

an attempt be made to coordinate and standardize, if you please, some of the more routine work now being conducted in the police laboratories throughout the country.

One may ask, what has prompted this conclusion? Over a period of years the author has had occasion to observe police science technics and the operations of some of the criminal courts in the eastern and middle western sections of this country. After a little study it became apparent that there is a rather noticeable stratification in the quality of work done. The technical excellence of forensic science has reached a high level in the East. Coupled with this is the fact that many of the courts there require as routine matters of evidence certain types of scientific findings. This probably is due to several factors. The relative age or maturity of that part of the country, and the long and excellent influence of some of the great colleges and universities which are located there.

Moving Westward, there is a slight decline in this quality of technical excellence until we reach a few localized areas in the Midwest, where again we find some great centers of learning, plus the influence of such groups as the early workers in the Chicago area and those centered around St. Louis.

The best available information shows a relative vacuum, as far as forensic science is concerned, between the Mississippi River and a narrow area along the West Coast, where again there is an increased interest in the quality of work done in this field. This observation is the result of a survey made within the last year. This relative void is explained in a large measure by the geographical nature of the territory—its vast agricultural and mountainous regions.

As to a specific problem, picture this type of case, one which is not the least bit unusual. Imagine a homicide occurring in the early evening. One or two fired slugs are found at the scene, possibly an additional one is removed from the body of the victim by the medical examiner. Along with this there are several exploded cartridge cases. These constitute the only pieces of physical evidence. The problem confronting the firearms expert is that of determining from what make of gun the fatal bullets were fired. He makes certain measurements, consults the data which is available in *his laboratory*, and then, if possible, arrives at some conclusions. His findings are incorporated in the general information regarding the apprehension of a suspect, and the work toward solving the crime moves on. In the large, well-equipped laboratories, *much data* is available, and many obscure makes of guns may be identified, thus enabling the

technician to offer assistance in a few hours. In the small, or *average* laboratory, it is not unusual to have *little* or *no data* at hand. This leaves only one recourse, that of consulting some other agency in the attempt to have the bullet identified. All of which takes time—one of the most important items in the initial phases of an investigation.

Is there any difference in the quality of *murder* whether it be committed in the mountain wilderness of the Rockies or across the street from the Harvard University Department of Legal Medicine? The citizens of any community are entitled to swift and accurate investigation of crime.

On the other side of the ledger, imagine, if you please, this condition. A man is on trial for his life or liberty. Assume that he is the unfortunate victim of meager circumstantial evidence. Part of the evidence consists in the determination of the type or group of a blood stain. The technician performing the serological tests may be a very sincere and enthusiastic worker, whose integrity is beyond reproach; yet because of a lack of knowledge of current progress he may not be aware of the more subtle differences for which one must be on the lookout when conducting such tests, as the mistake which may be made by stating that a blood sample belongs to group B when in reality it belongs in the A₂ B group. The defendant in this case is entitled to accurate testimony on the part of the prosecution.

What can be done in regard to this problem? The general technical excellence of the average police science technician may be improved in some measure, by an orderly dissemination of 1) scientific data, 2) methods of procedure and analysis, and by 3) recommendations for the standardization of the work which is peculiar to the police laboratory. A steering committee, composed of representative experts from several fields, could select representative groups which would organize and assemble data which is urgently needed in each particular phase of the work. Research could be assigned to capable and interested workers. The committee would then study and pass on the data or findings and arrange for its distribution. This distribution could be in the form of a special journal created for the purpose, the publication of bulletins or monographs, the publication of books, or the existing facilities of the American Journal of Police Science may be utilized. The important point is to get the data properly organized in a reference source that one day may become official. Finances, of course, would present a problem. Possibly with the aid of a research grant, the work could be sponsored by a college or university.

There might be some objection to the plan on the grounds that there exist wide differences of opinion among certain experts particularly with regard to matters of technic. However, this type of controversy is usually a healthy indication of a progressive spirit. More than enough basic information and standards exist which would be of invaluable aid to the average technician if properly assembled.

Once this type of information were *properly disseminated*, we could find fewer decisions in the records of one court upholding a scientific finding and another court refusing to acknowledge it. Also, many members of this distinguished audience would have less occasion to criticize the efforts of a technician in handling a piece of evidence prior to submitting it for further study.

Questionnaires which are reproduced later in the article were distributed to members of the two audiences. The Michigan-Ontario Identification group consisted largely of law enforcement officers engaged in fingerprint identification work, but also, as is so frequently the case in many departments, members of this group were engaged in other fields of police science.

Those present at the Medico-Legal Congress represented a cross section of pathologists, toxicologists, medical examiners, firearms experts, and law enforcement officials. The variations in general interests of each group were anticipated, and the questionnaires were changed slightly.

Following is a tabulation of the results. Answers in response to the questions indicating the specific interests of the participant were not listed because of their wide variety.

QUESTIONNAIRE

Distributed at Michigan-Ontario Identification Association
Meeting, 9-27-47.

	Yes	No
1. Do you think that there is a need for the organization and standardization of scientific criminal investigation technics?	17	0
2. How should this be accomplished?		
A. Create a large organization with unlimited membership	0	
B. Create a small but highly specialized group of well qualified persons who would formulate the policy for a subsequent larger group	8	
C. Administer the affairs of the group through some already existent organization.....	11	
3. Do you have need for a carefully compiled and generally accepted volume on laboratory technics commonly used in police science?.....	16	1
4. Do you have any problems peculiar to your work		

	Yes	No
which would require a certain amount of research work for their solution?.....	17	1
5. Would you be willing to submit such problems to a college or university for study providing that institution was associated in some way with police science or police administration work?.....	16	0
6. What particular problems would you be interested in having explored? Fingerprints 16, Firearms 12, Documents 10, Serology 4, Toxicology 4, Records and Statistics 9, Others (list) 1.		
7. If certain requests were made of you by an organized group to contribute information or data on a specific problem for subsequent publication for the general good of fellow workers, would you be willing to participate?	15	0

QUESTIONNAIRE

Distributed at American Medico-Legal Congress, 1-17-48.

	Yes	No
1. Do you think there is a need for the organization and standardization of scientific criminal investigation technics?	28	0
2. How should this be accomplished? A. Create a large organization with unlimited membership?	3	
B. Create a small but highly specialized group of well qualified persons who would formulate the policy for a subsequent larger group?	20	
3. A. Should the organization be an individual one?	12	
B. Should it be affiliated with a parent group?..	10	
4. If affiliated; with what group? A. American Medico-Legal Congress.....	16	
B. International Association of Chiefs of Police	0	
C. College or University.....	1	
D. Other	1	
5. Would you be willing to engage in necessary research work or assist in the compilation of scientific data?	22	1
6. How should this data be disseminated? A. Create a new Journal.....	11	
B. Use the facilities of the Journal of Criminal Law and Criminology.....	12	
C. Distribute monographs at periodical intervals	11	
D. Publish findings in book form.....	4	
7. What fields-would you be interested in contributing data? Fingerprints 1, Firearms 5, Documents 4, Serology 3, Toxicology 7, Records and statistics 3,		

Others (list) 5. The last part of question 7 included: Psychiatry 4, Chemical Tests for Intoxication 2, Pathology 1, Legal Medicine 1 and 5 unidentified.

No attempt has been made to draw any conclusions from the two surveys for obvious reasons. The sampling is not large enough and is not truly representative; however, in an effort to present an opinion which may be of some assistance in further considerations of the subject, it is believed one can safely infer that:

1. There is a definite need for some responsible guidance in the field of police science.
2. Forensic scientists are interested in forming an organization which would afford such guidance and provide a medium for exchange of information through journals, monographs, meetings, etc.
3. Apparently there is a definite cooperative spirit among the interested parties. (The word "apparently" is used with trepidation for similar attempts to organize police science societies have met with failure in the past.)²

The author is aware of the fact that this survey does not necessarily represent a true section of the opinion which may be held by a large majority of forensic scientists. Readers are invited to express their views in personal communication. If the opportunity presents itself for the sampling of opinion of groups similar to these described in the article, the author will, on request, supply any interested party with sufficient questionnaires. Should the response to such a proposal be deemed of general value and interest the results will be published in a future article.

² The American Society of Questioned Document Examiner, an active organization of prominent document examiners, appears as the possible exception. Over the years its members have carried on research and from time to time made available through technical literature the results.