

Summer 1939

Police Science Notes

Follow this and additional works at: <https://scholarlycommons.law.northwestern.edu/jclc>

 Part of the [Criminal Law Commons](#), [Criminology Commons](#), and the [Criminology and Criminal Justice Commons](#)

Recommended Citation

Police Science Notes, 30 *Am. Inst. Crim. L. & Criminology* 250 (1939-1940)

This Criminology is brought to you for free and open access by Northwestern University School of Law Scholarly Commons. It has been accepted for inclusion in *Journal of Criminal Law and Criminology* by an authorized editor of Northwestern University School of Law Scholarly Commons.

POLICE SCIENCE NOTES

TECHNICAL ABSTRACTS

M. Edwin O'Neill†

The Examination of Glass—The July-September issue of the *Police Journal* (London) contains an article on the examination of glass which will be of interest to investigators and laboratory technicians.¹ The author, Dr. F. G. Tryhorn of University College at Hull, presents an unusually clear description, illustrated by diagrams and photographs, of the effects produced by various types of fractures, including simple breaking, fracture by projectiles and fracture after use of a glass cutter. The article also contains a discussion of the comparison of small fragments of glass such as those frequently recovered in the investigation of burglaries and automobile accidents. The methods of comparison include the determination of form, specific gravity, refractive index, hardness, color, ultra-violet fluorescence and chemical composition. In addition to these standard tests, the author describes rather briefly several special tests which are being developed for the purpose of characterizing specimens of glass more definitely than is possible by the methods now in general use. Some of the special tests are particularly advantageous because they are based upon characteristics present as a result of different treatments to which the glass is subjected after its initial manufacture, so that it is possible to distinguish between samples from the same original batch of glass.

One of the tests consists of a study of the polish marks which are left on the surface by the polishing tool. Although invisible to the eye, they may be revealed by the following procedure: "The glass is cleaned by washing first in soda solution, and then in alcohol. Air is then blown by a small rubber hand-bellows through some moderately strong hydrofluoric acid and allowed to impinge on the surface of the glass. The vapor from the hydrofluoric acid etches the polish marks more deeply into the surface of the glass. After a few minutes' treatment the glass is again washed in alcohol and dried. The 'polish' marks may then be photographed in obliquely incident light through a microscope."

Another method of analysis based upon an "individual" characteristic is one involving an examination of the annealing marks or so-called "Griffith's cracks." With regard to their use as a means of comparison the author writes as follows: "When glass is annealed there are formed on the surface minute cracks, smaller than the 'polish' marks, and invisible even on microscopical examination. Even hydrofluoric acid vapor fails to develop these cracks sufficiently to make them visible. It has, however, been found that if the glass is heated to about 300° C. in an

† Chicago Police Scientific Crime Detection Laboratory.

¹ Tryhorn, F. G., "The Examination of Glass," *The Police Journal* 12 (3):301-318 (1939).

atmosphere of potassium vapor at a pressure of about 1/1000 millimeter these 'cracks' become sufficiently enlarged to be visible when examined in oblique light under the microscope. The Griffith's cracks are different in appearance and structure from the polish marks, but, they are dependent on the history of the glass rather than on its composition."

The author emphasizes the practical difficulties involved in establishing the positive identity of two samples of glass and recommends the application of as many of the tests as possible in making comparisons.

Form Blindness and Proof—The correct solutions of the problems presented in Mr. Osborn's article, pages 243 to 249 are:

Figure 1: A-7, 4, 2, 8, 5, 6, 1, 9, 3; B-2, 4; C-2, 4, 6; D-7, 5, 3, 6, 9, 8, 1, 4, 2; E-5, 3, 7, 2, 6, 8, 4, 9, 1.

Figure 2: Pairs, of the word "that," by twenty-seven writers, are: 1-33; 2-22; 3-40; 4-32; 5-38; 6-17; 7-26; 8-54; 9-44; 10-55; 11-31; 12-29; 13-35; 14-41; 15-50; 16-46; 18-36; 19-49; 20-30; 21-28; 23-48; 24-42; 25-27; 34-43; 37-45; 39-52; 47-51. The unpaired one is 53.

LEGAL DECISIONS

Fred E. Inbau

Legal Status of Confessions or Admissions Obtained as a Result of "Lie-detector" Tests—The Supreme Court of Pennsylvania recently rendered an interesting opinion regarding the admissibility of a confession obtained from an accused person who had been subjected to a "lie-detector" test. Following is a quotation from the court's opinion, in *Commonwealth v. Hipple*, 3 Atl. (2d) 353 (Pa., 1939): "The confession of defendant was properly admitted in evidence. There was no promise, force or threats used in obtaining it. The objection seems to be to the use of the lie detector. The defendant was told when this device was placed upon his arm that he could lie to the officers, but that he could not lie to the machine. It would seem the sole question raised by this issue is whether a confession obtained by a trick can be used, and this question has been repeatedly answered in the affirmative by the authorities. 'Since the exclusion of confessions is not due to any privilege of public faith or of private pledge of secrecy, it follows that the use of a trick or fraud (however reprehensible in itself) does not of itself exclude a confession induced by means of it. So far as the trick involved a promise which would tend to produce an untrue confession, it would operate to exclude,—not, however, because it was a trick (i. e., because the representations were false) but because even if true its tenor would have stimulated a confession irrespective of guilt. This principle is and always has been universally conceded.' Wigmore on Evidence, p. 957, Sec. 841.

"The statement by the officers, 'you can lie to us but you cannot lie to this machine,' in substance amounts to no more than the familiar phrase, 'It would be better for you to tell the truth,' which this court

has often sanctioned. . . . Here no inducement of material reward nor fear of punishment, conducive to eliciting an untrue statement, was employed. A confession, procured by a trick or artifice, not calculated to produce an untruth is never vitiated thereby. . . . It may be that it was the use of the lie detector which procured the confession. This would seem certain if it were not for the fact that it was not until two hours after the use of the device, during which time defendant had time for reflection and composure, that he confessed. It is quite possible that he was persuaded to do so by the use of the machine and what the officers told him concerning it. The record of the lie detector was not offered in evidence. Since the use of the device was for the purpose of inducing the defendant to tell the truth and not anything was done to influence him to do otherwise, an objection based solely on the fact that he was thus induced to confess cannot be sustained."

This decision, admitting the confession obtained by the use of a "lie detector" must be distinguished, of course, from the rule with regard to the admissibility of an expert's opinion as to the test results. Regarding the latter situation see this Journal, 29 (2):287-291 (1938).

Election Fraud Cases—Expert Testimony—In *Lester v. Fairbairn*, 89 Pac. (2d) 1091 (Cal. App., 1939), a question arose as to the validity of certain election ballots. A California statute required these particular ballots (cast by absentee voters) to be marked in either ink or by indelible pencil. The trial judge ruled several ballots invalid because they were not marked with indelible pencil. He based his decision on the fact that since he could and did easily erase the cross mark on them the marks must not have been made with the kind of indelible pencil required by statute. The contestee in the case offered the testimony of an expert upon the questions as to whether or not an indelible pencil had been used. The trial judge refused the offer, but upon appeal his ruling was held erroneous. The appellate court said: "In view of what is frequently done by modern scientific methods it seems incredible that properly qualified persons, by the use of powerful microscopes, chemicals, and other means, could not throw light upon the question as to whether certain of these ballots were or were not marked with an indelible pencil, although the truth in that regard may not clearly appear from an examination with the naked eye. Expert evidence was peculiarly appropriate in this case and should have been received for any possible aid to the court."

POLICE SCIENCE BOOK REVIEWS

Edited by *Paul V. Trovillo*†

Fingerprints: History, Law and Romance. By *George Wilton Wilton* (one of His Majesty's Counsel in Scotland, and of the Middle Temple,

† Forensic Psychologist, Chicago Police Scientific Crime Detection Laboratory.

Barrister-at-Law). William Hodge and Company, Ltd. (London, Edinburgh, Glasgow, 1938.) Pp. xix + 317, with 10 illustrations. 12/6.

The author of this volume came to be interested in the history of finger-print identification by association with a case (1933) in which a chance finger print was the sole evidence of criminal guilt. That interest has led Mr. Wilton through an exhaustive search of source materials and to the making of a book, which presents, in addition to other important matters of history, more complete documentation than any work hitherto available of the individual rôles of two founders of finger-print identification, Faulds and Herschel.

Dr. Henry Faulds (1843-1930; a Scot, not an Englishman as incorrectly stated in some references) is the central figure in the book. His portrait appears as frontispiece, and a "page of honour" is occupied by acknowledgment to nine writers who have duly credited Faulds with priority of published statement regarding finger-print identification. A large share of the text is devoted to presentation and discussion of the evidences which reveal the respective shares of Faulds and Herschel as pioneers, and the work concludes with the expressed hope that "this book may lead to the highly-deserved recognition of the services of Faulds to the scientific investigation of crime."

It is clear that the letter published by Faulds in *Nature* (October 28, 1880) represents the first item in modern literature directing attention to the practical usefulness of finger impressions. This letter, however, prompted a communication to the same journal (November 25, 1880) by Herschel, who pointed out that for more than twenty years he had been employing finger prints in various phases of identification in India (while Faulds' interest in the subject began only about a year before his letter). The emphasis of the two men differed in the letter text relating to identification, Faulds confining himself to the applicability of chance prints at the scene of crime while Herschel dealt only with the use of prints in obviating false personation. Both conceived the making of finger-print registers, though for unlike purposes in accord with their envisioning of the usefulness of prints in identification. In these circumstances, which call not only for evaluation of what has been set down in cold print but also for consideration of Herschel's practice of the method long prior to publication, the problem of assigning just credit becomes involved. Mr. Wilton has succeeded eminently in laying before his readers all the relevant facts, including developments which followed the letters of 1880.

There is no question but that Faulds has not received due credit by many writers, for example Laufer, who failed to mention Faulds in his monograph on finger-print history, and Galton, who treated him perhaps even more ungenerously. It is equally apparent that Mr. Wilton's zeal in presenting a case for Faulds may have carried him somewhat afield at some points, as in the erroneous statement (p. 252) that the chief importance of finger prints relates not so much to identification of previous offenders as to identification by chance impressions (remembering that Faulds' first emphasis was on such impressions).

Though so much of the book is concerned with discussion bearing on biography and the work of Faulds (in publications dating from 1880 through 1926) and the attitudes toward it of his contemporaries, notably Herschel and Galton, there is a store of interesting material along other lines of finger-print history. The question of ancient use of prints among the Chinese is not neglected, and "Mark Twain" as a finger-print propagandist is reviewed. There is an excellent chapter, among others of no less historical interest, on Vucetich. A bibliography of literature consulted, a list of cited cases and general index conclude the volume. The foreword is contributed by the distinguished Dr. Robert Heindl, criminologist of Berlin.

Mr. Wilton's "Fingerprints" may be recommended to the attention of jurists, workers in the field of identification and to the general reader who desires to follow the story of criminal identification during the last six decades.

Harold Cummins

Professor of Microscopic Anatomy,
Tulane University, School of Medicine.

Secret and Urgent. By *Fletcher Pratt* (327 W. 28th St., New York, N. Y.). The Bobbs Merrill Company. (Indianapolis, Indiana, 1939.) Pp. 282. \$3.75.

Fletcher Pratt's "Secret and Urgent" is the most complete and comprehensive study of the history and development of cryptography that has been published. Exploring the early history of civilization the author has discerned the faint traces of the use of secret writing in the hazy records of the period, and he has followed the development of the art down through the ages in a delightfully educational and entertaining manner.

The book is a remarkable combination of enchanting history, intriguing mystery, and scientific fact, appealing at once to the reader irrespective of whether his interest in the subject of cryptography is passive or intense. The rises and declines in the development of secret communications are tied to historical fact in proper sequence and the story unfolds in an entrancing manner characteristic of the work of Fletcher Pratt the historian. The author's clever introduction of the cipher factor in historical events stimulates the reader's interest anew in such intriguing mysteries as the Man in the Iron Mask and the Dryfus affair and the student of history will find it a delightful excursion from the prosaic approach.

The inventions of the systems of encipherment are traced and their analysis and solution presented in a clear and concise fashion that bespeaks the author's ability as an expert in the field of crypt-analysis. Recognition of the importance of scientific exactness is brilliantly displayed in the many examples of the solution of ciphers that are contained in the volume. The reader is progressively carried through the com-

plex stages of analysis patiently and accurately with a minimum of doubt and confusion.

Two features render the book particularly valuable to the student of cryptography, namely the section devoted to frequency tables and the detailed index of the subject matter. These features readily adapt the book to use as a manual or guide to the practical solution of cryptic messages.

It is quite impracticable in a short review to evaluate effectively the scope of interest of "Secret and Urgent" and likewise to describe adequately the broad perspective of the subject that is presented. It is a book that will be acclaimed by all readers, and cryptographers both amateur and expert will welcome the work as an outstanding addition to the present literature on the subject.

Don L. Kooker

Supervising Lieutenant,
Indiana State Police.

The Police Yearbook (1938-39). *International Association of Chiefs of Police*. (The Association, 1313 E. 60th St., Chicago.) Pp. 296. \$2.50.

The gathering together annually of most of the outstanding executives of the police departments of the North American continent to discuss their problems and exchange ideas, has added materially to better law enforcement and to a centralized scheme of police control. This record of the 45th annual convention of the International Association of Chiefs of Police, held at Toronto, Canada, clearly demonstrates that the aims, purposes and accomplishments of the I. A. C. P., constitutes a mighty force in working out problems common to all police departments. Contained herein are all of the papers read at this convention, together with the discussions of each.

The aim of this association to expand the systematic collection and distribution of information among police departments is a noteworthy one. So, too, is one of the chief goals of the Association: the reduction of traffic injuries and deaths. The Safety Division of the I. A. C. P. is doing splendid work in collecting and distributing information on the latest and best methods for making streets safer. However, if these conventions did nothing else but bring together the outstanding executives of the police departments to discuss their problems and exchange ideas, this would in itself add materially to better law enforcement. In the four days these men are together nearly every phase of police work is discussed. A solution is sought for their every problem. As a result the cream of thought and argument of the foremost minds in the police field is given us.

This book holds a wealth of important suggestions and ideas on police work, written, discussed, and argued by many leading police officials. The Yearbook shows the I. A. C. P. to be a living force day in and day out in raising the standards of such police functions as: Police Organization and Administration; Police Practice; Techniques for Han-

dling Disorders; Criminal Investigation and Identification; Police Cooperation; Traffic Control and Accident Prevention; Crime Prevention and Juvenile Delinquency; etc.

One of the foremost authorities in America on police organization and administration has a very interesting article on police service in boom and depression years, in which we are shown that police costs in the past 25 years have multiplied four times. It is indicated that almost 95 per cent of police expenditures are for personal service, most of the increase in police costs being due to higher salaries and increased numerical strength. He asks why the entire gas taxes should be applied to new roads when such roads will add greatly to the duties and burdens of police forces and these duties are quickly reflected in police costs. He points out that if highways are to be preferred objects of expenditure from the proceeds of gas taxes, police service should receive a similar preference. He also talks of the loyalty of the American police officer: "Recent years have seen not only many temporary reductions in salary scales but even payless pay days. It is a notable fact, and one which deserves popular acclaim, that in the face of such discouragements the police have not wavered in their duty nor been reluctant to use their lawful powers in the protection of their communities from violent disturbances and other movements designed to be subversive of good order and democratic processes in government. The unquestioned loyalty of police during these trying years will be long remembered by the American public." (One might question this latter statement regarding the memory of the American public on the good deeds of police officers. Occasionally we hear of the police officer that once turned his back on a holdup and took the easiest way out, but of the many who stood their ground, battled and were buried a few days later we hear very little.)

Throughout the book, road blockades are discussed. This has come to be a very important problem in police work. Since the two-way radio has become adaptable this has grown to be an important asset, making cooperation between states a necessity. In one of these articles we are told the difference between the intrastate brockade, and the regional or sectional blockade, and how they operate. The potency of the radio is stressed as the greatest single combatant of crime because in the past the biggest handicap to the efficient functioning of police departments was the lack of prompt communication to officers on patrol duty. We would take issue here. Radio, as important and as necessary as it is, rates in importance after police personnel and police training.

It is most interesting to note that the Committee on Professionalization of Police Service reports that persons preparing for entrance and practice in the police profession must have more qualifications than are necessary in the legal, medical, and teaching professions!

The I. A. C. P. is making rapid strides in the furtherance of its several purposes: to advance the art of police administration and crime prevention; to develop and disseminate improved administrative and technical practices and promote their use in police work; to foster police cooperation and the exchange of information and experience among police administrators throughout the world; to bring about enlistment

and training in the police profession of qualified persons; and to encourage adherence of all police officers to high professional standards of conduct. The constant policy of the I. A. C. P. has been to cooperate with existing police organizations of recognized professional and technical standing, to further the organizing of investigation officers, traffic officials, crime prevention officers, and other specialized police groups, and to bring about a close relationship with state police chiefs' organizations.

Although it is impossible here to review every one of the articles in the Yearbook, one can only stress the importance of all of them. Each article is the result of years of study and application by a police official who is a specialist on the matter discussed by him. For this reason the I. A. C. P. Yearbook is the bible of the 20th Century police official.

John I. Howe

Captain,
Chicago Police Department.

The Expert Witness. By *Arthur L. Mundo* (Judge of the Superior Court, San Diego, California). Parker & Baird Co. (Los Angeles, 1938.) Pp. XI, 365. \$5.00.

Here is a book whose title will undoubtedly excite the interest of expert witnesses and many members of the legal profession as well. For quite some time there has been much need for a comprehensive publication upon this subject. Unfortunately, however, the present work does not measure up to the standards required for a truly helpful contribution.

This book consists of twenty chapters, titled as follows: Expert and Opinion Evidence; The Hypothetical Question; Medical History of Patient; Scientific Books; Privileged Communications; Compensation; Subjects of Expert Testimony; Handwriting; Subjects of Expert Testimony (Continued); Malpractice; Subjects of Expert Testimony (Continued); State of Mind; Value; Subjects of Expert Testimony (Continued); Miscellaneous Subjects of Opinion Evidence; Opinions of Ordinary Witnesses; Instances Where Non-Expert May Give Opinion; Weight and Sufficiency of Evidence; Expert Witnesses as Officers of the Court; Act Empowering Court to Appoint Expert Witnesses. The number of pages (365) comprising these twenty chapters tends to be misleading as to the amount of material contained therein. The pages are small and the type large and well-spaced. Moreover, page after page is devoted to lengthy quotations from legal decisions or to collections of case citations. For example, page 260 in the chapter on "Miscellaneous Subjects of Opinion Evidence" is devoted entirely to an alphabetical listing of eleven subjects (Lumber, Mining, Machinist, Mechanical Operation, Medicine, Miscarriage, Map, Method, Millwright, Mill, and Nuisance) and a citation under these various topics of a total of

nineteen cases. The complete contents of this page, as well as of many others, could have been incorporated in far less space.

The lawyer seeking case citations or helpful information concerning the legal aspects of the subject will find very little in this book that cannot be obtained by consulting the "American Digest" or "Corpus Juris," or "American Jurisprudence." However, to a person with no legal training, or to an expert with only limited court experience, the book does have some merit for its elementary discussion of legal rules and principles concerning expert testimony.

The discussion of scientific methods of proof is very superficial and at times inaccurate. For example, in an inadequate (page and a half) treatment of "Fingerprints" the author makes the following inaccurate statement: "The various markings found on the human hand are classified as 'arches,' 'loops,' 'whorls,' and 'deltas.'" ("Deltas" do not represent a classification but rather one of the two principal characteristics found on most fingerprint patterns. "Composites" is the word which should have been used.)

With the foregoing considerations in mind it would be difficult to recommend this book, and particularly so in view of its present listed price.

Fred E. Inbau

Director, Chicago Police Scientific
Crime Detection Laboratory.

Recent Advances in Forensic Medicine. (Second Edition.) By *Sydney Smith* (Regius Professor of Forensic Medicine, University of Edinburgh) and *John Glaister* (Regius Professor of Forensic Medicine, University of Glasgow.) P. Blakiston's Son and Co. (Philadelphia, 1939.) Pp. 264, with 85 illustrations. \$4.50.

This book was reviewed in the last issue of this Journal, but through an unfortunate mistake was entitled *Recent Advances in Forensic Chemistry*.