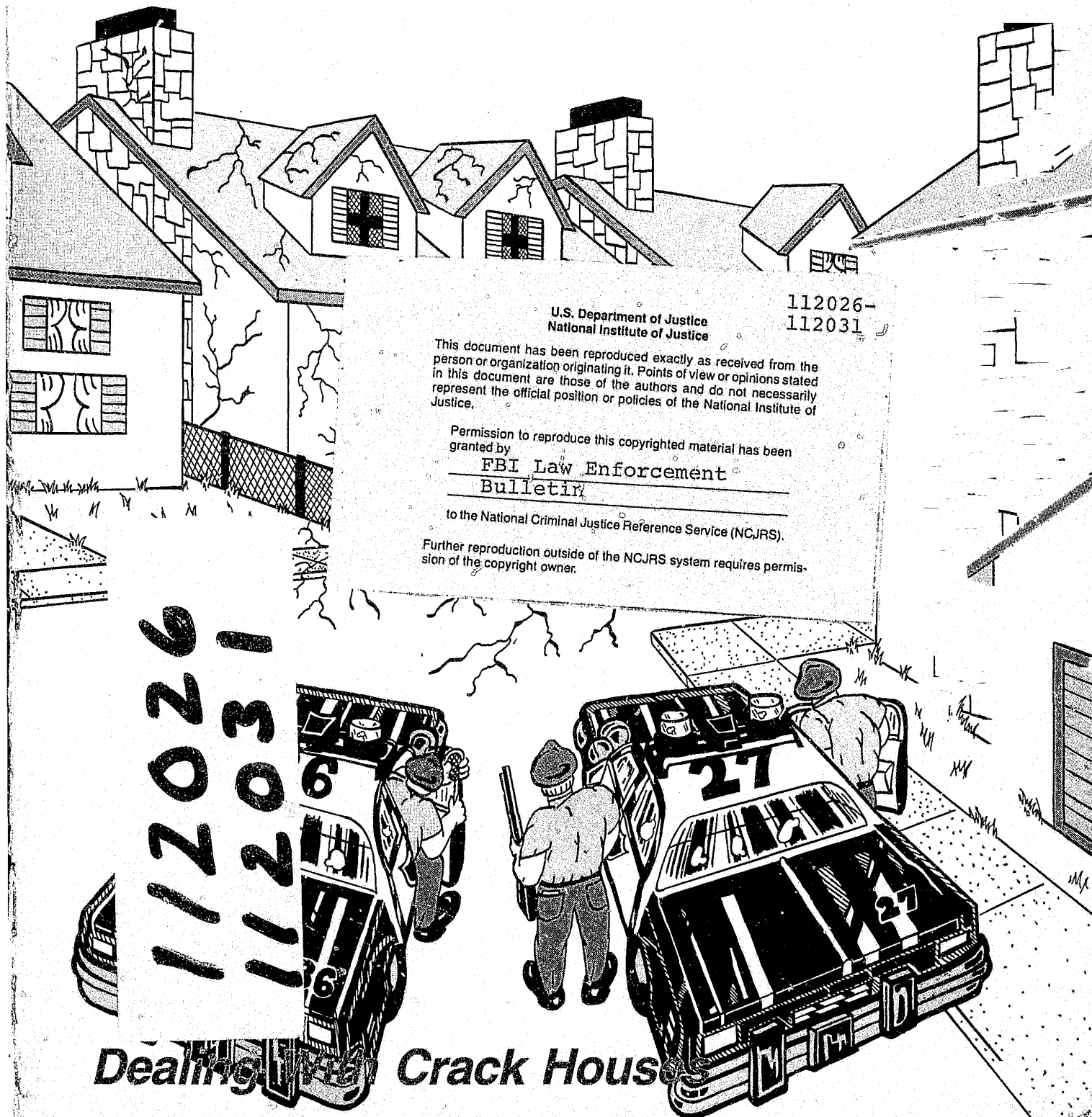


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June 1988

Law Enforcement Bulletin



U.S. Department of Justice
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Dealing With Crack Houses

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FBI

Law Enforcement Bulletin

United States Department of Justice
Federal Bureau of Investigation
Washington, DC 20535

William S. Sessions, Director

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Forensic Science Information Resource System

"The [Forensic Science Information Resource System] was established...to provide information services to...the FBI Laboratory Division and...the nearly 300 State and local crime laboratories throughout the United States."

By
COLLEEN WADE
*Librarian
Laboratory Division
Federal Bureau of Investigation
Washington, DC*

The chairman of the anthropology department of a major university mailed chocolates laced with deadly poisons to a former colleague and to the Federal judge who, several years earlier, had sentenced him to prison upon his conviction for operating a drug factory in his college laboratory. The colleague's wife and daughter ate the chocolates and became seriously ill, as did the judge's wife. Samples of the chocolates were sent to the FBI's Chemistry/Toxicology Unit for analysis. Analysis determined that toxic quantities of pilocarpine and atropine had been added to the chocolates. Smaller quantities of sparteine were also identified. In an attempt to determine the possible source of sparteine, the case toxicologist requested a literature search from the Forensic Science Information Resource System (FSIRS). The search revealed several plant sources for sparteine and also identified sparteine-related alkaloids.

A suspect in a murder case was taking the antibiotic tetracycline. The investigating agency asked the Chemistry/Toxicology Unit to determine if

tetracycline could be identified in blood stains. A search of the literature determined that high performance liquid chromatography is the preferred application technique in clinical assays of blood. Because of the forensic limitations of this technique, coupled with the nature of the specimen, the investigating agency was advised not to send the samples to the FBI Laboratory for analysis, thus saving considerable time and resources.

These situations illustrate the reference services provided by FSIRS, a forensic science library housed at the FBI Laboratory in Washington, DC, and at the Forensic Science Research and Training Center in Quantico, VA.

The FSIRS was established in October 1985, to provide information services to personnel in the FBI Laboratory Division and to personnel in the nearly 300 State and local crime laboratories throughout the United States. Such information facilitates evidentiary examinations, as well as the research and development of forensic science knowledge, techniques, and instrumentation.



Ms. Wade

Information Dissemination

The FSIRS is the center for the dissemination of forensic science information in the United States. The library is authorized to disseminate copies of the British Crown's Home Office *Central Research Establishment Reports* and the British *Metropolitan Police Forensic Science Laboratory Reports* to crime laboratories.

Additionally, to help forensic scientists keep abreast of new technologies and to facilitate training new examiners, subject bibliographies are prepared to augment the feature articles in the FBI's quarterly *Crime Laboratory Digest*. Permission is obtained from the publishers of the documents cited to disseminate copies of the documents to recipients of the *Digest*.

The FSIRS also provides literature searching services and document delivery services to crime laboratories upon written request.

Reference Collection

The FSIRS consists of approximately 10,000 scientific and technical reference books, the vast majority of which are housed in the unit laboratories and offices of the Laboratory Division. At present, the collection is being cataloged, classified, and entered on a computerized catalog, Bibsrch. The catalog can be searched by author, title, or subject, as well as the International Standard Book Number (ISBN) or call numbers. In the not-too-distant future, Laboratory Division personnel will be able to search the catalog via microcomputers in their individual offices.

The FSIRS subscribes to over 350 journals. However, since information needs are so far-reaching, the FSIRS also accesses the resources of aca-

demic, Federal, private, and public libraries in metropolitan Washington, DC, as well as throughout North America.

Literature Searches

Searching available literature is an essential aspect of information services. An efficient way to do this is by searching online data bases. The FSIRS uses the Dialog Information Retrieval Service, which currently has more than 300 online bibliographic, statistical, and full-text data bases with multidisciplinary coverage.

The field of forensic science is well-covered by numerous data bases. One such data base is the Criminal Justice Periodical Index, a reference guide to leading journals in the areas of forensic science, criminology, criminal law, family law, security systems, corrections, and police science. Over 100 journals, newsletters, and law reports are included in this index which covers American, British, and Canadian publications.

Embase has long been recognized as an important, comprehensive index of the world's literature on human medicine and related disciplines. The forensic science abstract section goes beyond the bounds of forensic medicine to include a multiplicity of subject areas of interest to forensic scientists. Embase provides access to journal articles, books, dissertations, and conference proceedings. The data base indexes articles from more than 3,500 primary journals from over 100 countries.

Legal Resources Index (LRI) is the most comprehensive index available to the legal English-speaking world. It provides subject, author, case name, and

"The FSIRS consists of approximately 10,000 scientific and technical reference books...."

statute name access to over 700 journals from major nations having common law tradition. The LRI specifically indexes forensic science information.

The National Criminal Justice Reference Service (NCJRS) data base represents the document collection of NCJRS. Established by the U.S. Congress, NCJRS is the national and international clearinghouse of practical and theoretical information about criminal justice and law enforcement. Entered into this data base are published and unpublished research reports, program descriptions and evaluations, books, dissertations, studies, journal articles, and audiovisual materials.

Scisearch is an interdisciplinary index to the literature of science and technology prepared by the Institute for Scientific Information. It contains all the records published in Science Citation Index and additional records from the Current Contents series of publications. Over 4,100 major scientific and technical journals are indexed.

Forensic science information may also be retrieved from other data base categories, such as biography, biology, business, chemistry, computers, defense, education, energy, engineering, geology, humanities, languages and linguistics, law, marine science, medicine, metals, nutrition and foods, patents, pharmacology, physics, product information, public affairs, toxicology, and government research and documents.

The Dialog Information Retrieval Service provides selective dissemination of information on certain data bases. This capability allows the Dialog user to have a search automatically updated. The most recent literature on a

topic is cited on a printout and is mailed to the user.

Document Delivery

Providing the documents cited in online literature search bibliographies, as well as the documents cited in other bibliographies, is an important aspect of reference work. The online ordering service of the Dialog Information Retrieval Service allows direct ordering of documents by transferring requests to suppliers electronically. Other document delivery services offer electronic ordering and are used extensively to meet the document needs of the Laboratory Division personnel.

The UMI Article Clearinghouse developed by University Microfilm International provides 48-hour document delivery for photocopies or reprints of articles from over 9,000 journals, as well as photocopies of proceedings, newspapers, and government documents. The Genuine Article provides access to the Institute for Scientific Information's collection of over 8,000 journals published during the current year and the past 4 calendar years. The Genuine Article provides tear sheets or photocopies of documents.

IFI/Plenum Data Company provides copies of U.S. and non-U.S. patents, and the Congressional Information Service (CIS) is an index to the publications of the U.S. House, Senate, and joint committees and subcommittees. CIS provides full text copies of any title indexed in the data base. In addition to ordering documents online, it is often necessary to retrieve documents by searching the collections of academic, Federal, private, and public libraries in metropolitan Washington, DC.

Interlibrary loans are another means of procuring documents. The FSIRS electronically requests and tracks interlibrary loans via the Online Computer Library Center (OCLC) system. By telephonically accessing a mainframe computer in Ohio, many of the collections of the major libraries in North America are searched to determine if a book or journal can be borrowed. This is an efficient means of providing rare reference items for library users.

Reference Requests

The FBI Laboratory Division is divided into four sections. A brief description of each section and examples of reference requests will further illustrate how the FSIRS meets forensic science information needs.

Document Section

The Document Section conducts scientific examinations of physical evidence for the Federal Bureau of Investigation and other Federal agencies in criminal and civil matters. Document examinations are also conducted for all duly constituted State and local law enforcement agencies. Questioned document examinations include handwriting, typewriting, printing, paper and ink, as well as shoe print and tire tread comparisons. The Document Section also assists law enforcement agencies in matters involving stolen art objects, evidence in gambling cases, extortionate credit matters, cryptanalytic examinations of communications, mathematical analyses, foreign language translations, and polygraph testing.

Examples of information requests from personnel in the Document Section include a request for selected dissemination of information (automatic literature search updates) on the morphology and biomechanics of feet. A Special Agent, in cooperation with a researcher from the Forensic Science Research and Training Center, is working on a project concerning the individuality of impressions made by the human foot. The Questioned Document Unit #2 frequently receives crime scene impressions of footprints made by naked or stocking-clad feet. In addition, examiners compare insole impressions in shoes for possible correlation with a suspect. These impressions rarely leave the skin ridge detail necessary for a fingerprint-type identification. The impressions do, however, contain size, shape, and contouring characteristics left by the plantar surface of the foot. The literature obtained from the FSIRS is being applied to the research project and has assisted the examiner in casework.

In another case involving recovery of a stolen painting, Special Agents from the Buffalo Office found small pieces of torn paper in a suspect's van which resembled the damaged protective paper backing of the painting. The fragments were sent to the Laboratory Division for analysis. Due to the delicate nature of the fragmented paper, the document examiner requested a literature search from the FSIRS to determine a safe means of handling, mounting, and transporting paper. The search produced a polyester film encapsulation technique originally used by the Library of Congress to preserve documents.

Forensic Science Research and Training Center

The Forensic Science Research and Training Center (FSRTC) conducts research to develop new forensic science knowledge, techniques, and instrumentation and provides forensic science instruction to Federal, State, and local crime laboratory and law enforcement personnel. The FSRTC is also responsible for disseminating scientific information to the Nation's crime laboratories through the *Crime Laboratory Digest* and for assisting crime laboratories in professional growth through annual symposia.

The scientists at the FSRTC use the information services of the FSIRS extensively. For example, a polygraph research specialist requested scientific, technical, legal, and popular media information on polygraph examinations of personnel. The literature searches and document delivery services provided by the FSIRS are being used in preparing a major report on polygraph applications.

The opiates codeine, morphine, and heroin are derived from the resin of the opium poppy. All three opiates are transformed in the liver and excreted in the urine. A research chemist at the FSRTC requested literature searches and cited documents to determine if after the ingestion of poppy seed bagels, a urine drug screen of the opiates would be positive. After a review of the literature and laboratory experiments, it was determined that the opiates could be detected by testing the urine of individuals who ingested poppy seed bagels.

Scientific Analysis Section

The Scientific Analysis Section applies the knowledge, techniques, and

instruments of chemistry, biochemistry, serology, physics, microscopy, petrography, metallurgy, and other disciplines to the examination of evidentiary materials submitted by Federal, State, and local law enforcement agencies. The types of evidence examined include body fluids, poisons, hair, fibers, paints, dyes, stains, tools, ammunition, firearms, explosives, sabotage devices, soils, safe insulations, building materials, metals, and others.

A forensic science information request from the Scientific Analysis Section entailed researching the history of forensic hair testimony. To prepare for a speech at a meeting of the Mid-Atlantic Association of Forensic Scientists and to provide background for an article to be published in a trade journal, a hairs and fibers examiner requested research to determine how forensic hair examinations and testimony have changed over the past 100 years. Of particular interest was how hair comparisons fit into general criminal investigations and their significance to the investigations.

To cite another case, a Bureau field office forwarded a sample of commercial skunk oil to the Chemistry/Toxicology Unit to identify the material in the bottle and possibly to identify the manufacturer of the product. The sample was placed in a theater which would be host to a performance of a foreign dance troupe. Standards of the components and an analysis of skunk oil were not on file in the Chemistry/Toxicology Unit. Upon request, the FSIRS searched the literature and retrieved references on the gas chromatography-mass spectrometry analysis of skunk oil which greatly facilitated the examination.

Special Projects Section

The Special Projects Section is divided into two basic services. The exhibits and graphics service provide trial charts and exhibits, artist's conceptions, and highly specialized investigative aids to investigators and prosecutors. The photographic service provides assistance in investigations involving unusual surveillance situations, conducts forensic photographic examinations, and processes film for motion pictures and stills in direct support of the FBI's investigative efforts.

One of the responsibilities of the Graphic Design Unit is the design and layout of journals, booklets, brochures, forms, and investigative flyers. The work is done on an automated print publishing system using laser print technology. The onsite publication system provides increased efficiency, as well as establishes good design standards for publications. Literature searches and document delivery services on typographic standards requested from the FSIRS enhance the quality of the publications.

Summary

The Forensic Science Information Resource System (FSIRS) is dedicated to meeting the information needs of Special Agents and support personnel in the FBI Laboratory Division. The FSIRS is also committed to providing forensic science information support to duly authorized crime laboratories in the United States and abroad.

To obtain additional information, contact:

Coleen Wade
Librarian
Federal Bureau of Investigation
Room 3589
Tenth and Pennsylvania Avenue,
N.W.
Washington, DC 20535

FBI

Crime Rises Again In 1987

The number of serious crimes known to law enforcement agencies nationwide rose 2 percent from 1986 to 1987, according to preliminary annual statistics compiled by the FBI's Uniform Crime Reporting Program. The trend marked the third consecutive annual increase, following rises of 5 percent in 1985 and 6 percent in 1986. The Uniform Crime Reporting statistics, based on an Index of selected offenses, showed the property crime level, like the Index, rose 2 percent last year, while the violent crime total dropped 1 percent.

Among the violent crimes reported, aggravated assault was up 2 percent from 1986, while murder decreased 4 percent, forcible rape was down 1 percent, and robbery dropped 5 percent. The individual property crimes of larceny-theft and motor vehicle theft registered Index upswings of 3 and 5 percent, respectively. The burglary volume dropped 1 percent, and arson recorded a 5-percent decrease.

Following the trend for the Nation as a whole, the Index volume in cities with populations over 50,000 and in suburban and rural areas nationwide was also up 2 percent. Geographically, the Crime Index level was up 1 percent in the Midwest, 3 percent in the Northeast, and 4 percent in the South. The West experienced the only decline, a 1-percent drop.