



**R. Belkin  
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# **Fundamentals of Criminalistics**



**Progress Publishers**

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**Progress Publishers  
Moscow**

Translated from the Russian by *Joseph Shapiro*  
Designed by *Yuri Davydov*

**Р. Белкин, Ю. Корухов**

**ОСНОВЫ КРИМИНАЛИСТИКИ**

*На английском языке*

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## PREFACE

Most capitalist and developing countries have, in recent years, experienced a rising crime rate and a change in the pattern of crimes, and this has resulted in the need to develop and use effective means for exposing and investigating crimes. In socialist countries, however, this need is not connected with increasing crime, but with the task to completely eradicate crime and its underlying causes.

Criminalistics, a science that develops a system of special techniques and methods for collecting, establishing, investigating and using evidence to be presented in court, is designed to serve the purposes of combatting crime. In addition, criminalistics develops preventive measures for averting crime.

Criminalistics is a relatively young science. Originating around one hundred years ago, it has from the very outset developed in different countries along different lines, and its current state also differs depending on the area. This book is primarily designed to provide basic ideas on criminalistics, its functions and essence, as seen by Soviet criminologists. Still, the authors have sought to select those provisions that are essentially common to all countries and could be used universally.

The book is intended for the layman, and for that reason the authors have tried to combine a scientific approach with readily intelligible explanations.

Those who would like to further their knowledge in some specific field of criminalistics should bear in mind that every chapter in this book is based on extensive literature, chiefly in Russian, English, German and French, and that this work gives an account of only the fundamentals of the science and, hence, cannot replace the special literature that a detective, interrogator or judge should read.

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## PREFACE

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## Chapter 1

### WHAT IS CRIMINALISTICS? CONTEMPORARY IDEAS ON ITS NATURE, SYSTEM AND GOALS

#### 1. THE ORIGINS OF CRIMINALISTICS

Some sciences have appeared within the present generation, others originated in ancient times, when man first learned to count his fingers and observe the stars. As for criminalistics, it is really hard to determine exactly when it appeared.

For ages people in India have known how to recognise animal and human tracks. With time, masters of the art even formed their own caste to pass their secrets from generation to generation. In the Red Indian tribes of North America, every warrior and hunter had to know how to "read tracks".

The ability to follow tracks and shadow a person was an art. In fact, the ancients shadowed both wild animals and criminals, and it is no wonder that *The Laws of Manu*, one of the oldest Indian legal documents, generally likened criminal investigation to hunting.

Initially, community members themselves used to shadow criminals; then, with the emergence of the state and the law, this was done by specially designated officials. Until the beginning of the 19th century, they were only guided by their own professional experience plus quickness of wit. True, there is historical evidence of the existence of special manuals concerning some technical aspects of criminal investigation. For example, the *Hsi Jüan Lu* published in China in the mid-13th century mentioned the rules of a *post mortem* inspection. We also know of two books which mention the examination of documents by experts. Both were published in Paris: one by Desmesle in 1604 and the other by Raveneau in 1665. However, the Chinese manual never reached Europe; Desmesle's book did not find a broad readership; and Raveneau's work on document forgery was burnt at the command of the judiciary on February 10, 1670.

Indeed, the fact that in those times the investigator's only as-

sets were his common sense, experience and professional power of observation made the disclosure of crimes a kind of art, and often simply a matter of luck. It is hardly surprising, therefore, that it could be mastered only by a few.

While crimes were relatively few and not too complicated, society had no great need for more than a handful of individuals who knew how to expose them. But crime changed both quantitatively and qualitatively under capitalism. When organised crime became an established fact and professional criminals began to use modern means of communication and transport and increasingly sophisticated criminal means of committing and concealing their crimes, police and criminal investigation departments in the West were utterly unable to effectively combat the transgressors.

Society could no longer rely on the acumen of investigators; in fact, the business of investigation itself had to be scientifically based. This resulted in the appearance of a new field of knowledge designed to introduce the natural and applied sciences in legal proceedings.

The term *criminalistics* was first used by Hans Gross (1847-1915), a court investigator and later university professor, who in 1892 published a fundamental work entitled *Handbuch für Untersuchungsrichter (A Manual for Court Investigators)*. Here he summarised and systematised the technical aids and techniques for combatting crime developed by his predecessors and himself which were chiefly based on evidence provided by the natural sciences for the needs of criminal investigation. In an article on the tasks and objectives of criminalistics published in 1897 in *Schweizer Zeitschrift für Strafrecht*, Gross based the need for distinguishing among those sciences dealing with criminal law a special science "on the realities of criminal law", which he proposed to call *criminalistics*. The third edition of *A Manual for Court Investigators* (1899) was already entitled *Handbuch für Untersuchungsrichter als System der Kriminalistik (A Manual for Court Investigators as a System of Criminalistics)*.

Gross was not the first to turn to the need for developing scientific methods of crime investigation. Back in 1838, L. Jagemann, in the preface to his two-volume *Handbuch der gerichtlichen Untersuchungskunde (A Manual on the Art of Court Investigation)* noted that his objective was no less than to develop

a self-contained new discipline on crime investigation. In the first half of the 19th century, several works on crime investigation also appeared in Russia: Ya. Barshev (*The Basics of Criminal Legal Proceedings*, 1841); N. Orlov (*Concise Handbook for Criminal Investigation*, 1833); N. Kalaidovich (*Instructions on the Execution of Criminal Investigations*, 1849), and so on. Europe was still basically unaware of Gross, when Alphonse Bertillon (France) was already taking the first steps in applying the anthropometric method in recording crime, and William J. Herschel and Henry Faulds (Great Britain) had discovered independently of each other the properties of finger patterns that subsequently formed the basis of dactyloscopy, a major technique for identifying people. Yet Gross was the first to have proposed a system of scientific investigation methods; hence, the origin of criminalistics is usually associated with his name.

The young science of criminalistics was not immediately recognised and used by investigators and judges. In 1907, in a report to the French President, the Minister of Justice stated that no progress had been made in developing new methods for disclosing the truth, and that meanwhile criminals were enjoying all the conveniences of speedy travel to hastily retreat from the scene of the crime and create alibis for themselves. In fact, stressed the Minister, criminal methods improved with the progress of science, whereas the techniques of criminal pursuit remained static. But a few years later the situation began to change. One after another, bourgeois governments in Europe and America began to take radical measures to reorganise their police and provide criminal investigation departments with recommendations of the rapidly developing science of criminalistics.

The latter developed chiefly along two lines. In Great Britain, France, Italy and some other European countries, the accent was on developing technical aids and methods for investigating material evidence. As a result, criminalistics in those countries became a purely technical discipline, and those involved began to call it police technique or investigative police methods. On the other hand, Germany laid greater emphasis on developing the tactics of criminal investigation and procedural recommendations for investigating specific crimes.

In 1889, E.F. Burinsky (1849-1912) an outstanding Russian forensic photographer, used his own money to found a forensic

photo laboratory at the St. Petersburg District Court. This lab was the first expert institution for criminal research in Russia. However, due to a shortage of funds, the lab was unable to function well and officials from the procurator's office and the court avoided scientific methods for investigating evidence, ignoring the opportunities for criminalistic examination.

The forensic photo laboratory under the procurator of the St. Petersburg Chamber of Justice, the first government expert institution in Russia, began to function in January 1893. However, it could not fully satisfy the requirements of tsarist Russia's punitive bodies. It was only in the face of the growing revolutionary movement and the desire to use scientific methods primarily to combat the latter, that the tsarist government, in 1912-1914, set up panels for scientifically-based forensic examination in St. Petersburg, Moscow, Kiev and Odessa. However, these did not function long, and actually broke up at the beginning of the First World War.

Following the victory of the Great October Socialist Revolution, the young Soviet Republic instantly declared that it would relentlessly fight crime and all the social scum that usually rises from the bottom during great social upheavals.

Those were hard times. Battered by fighting, hunger and destruction, the country was compelled to wage a bitter struggle against both internal counter-revolutionaries and bandits. After the tsarist government was overthrown in February 1917, the bourgeois Provisional Government freed criminals who banded together in armed gangs to terrorise the population and commit reprehensible crimes.

The gains of the revolution were defended by members of the All-Russia Extraordinary Commission and militia, whose criminal investigators were, in effect, former workers, peasants and soldiers lacking experience in fighting crime. And it was Soviet criminalistics, a science that emerged in the first years after the October Revolution, that was designed to help them in that struggle.

## 2. THE SUBJECT OF CRIMINALISTICS

Criminalistics plays an important role in investigating and solving problems related to fighting crime.

Like any other independent field of scientific knowledge, the subject of every legal science is essentially the regularities that determine the origin, state, developmental trends and changes in some specific group of phenomena, facts and relationships. The subject of criminalistics likewise involves a definite group of such objective regularities that are studied for subsequent use in combatting crime.

All crimes are committed in conditions of existing reality, are associated with the environment and reflected therein. No matter how fleeting the crime may be, it is never a one-time deed. It is, rather, a complex system of deeds and actions committed by the perpetrator before, during, and after the criminal deed. The deeds and actions of the victims, and also of other individuals who were intentionally or unintentionally drawn into the criminal event, should likewise be added to the above-mentioned deeds and actions. All these leave numerous traces of the criminal event that may subsequently become evidence in the case. These traces contain bits of information linked with the criminal event that make it possible for the inquiry, preliminary investigation and court to establish the objective truth in every concrete case.

Whereas any criminal event (like any event and/or phenomenon in general) is necessarily reflected in the environment, the information concerning a given crime is essential, recurring, stable and universal; in other words, it is an objective norm of reality. The regularities that "control" the process in which traces of a given crime appear include the following factors.

First: the recurrence of the process in which traces appear. For instance, when the hand touches a polished surface, fingerprints appear, and when someone walks over a dusty floor, footprints appear, and so on. In fact, no matter how many times these actions recur, the appearance of corresponding reflecting traces would recur an equal number of times in corresponding conditions and with the required regularity.

Second: the regularity in the relationship between the deeds of the criminal and the criminal result that arises as evidence in the case. This would signify that the criminal result proves the presence of a criminal deed and its character, and that the regularity of the given criminal result makes it possible to return to the event under investigation.

Third: the regularity of the relationship between the method by which the crime was perpetrated and the traces of that method. In other words, knowledge of the method by which the crime was committed allows one to surmise the traces that will inevitably appear.

Four: the dependence of the choice of the method for perpetrating the crime on concrete subjective and objective circumstances; the dependence that permits, proceeding from the method that serves as evidence, the establishment of those circumstances and, vice versa, the discovery of the method by which the crime was perpetrated according to those circumstances.

Finally, five: the regularities with which information on the crime disappears, i.e. those characterising the process whereby the trace reflections are eliminated.

Information about a given crime primarily comes from its traces, which may be either material or ideal. Material information is all that remains after the crime and is readily perceptible, e.g. the criminal's hand- and footprints, the victim's body, a broken safe, a bullet stuck in the wall, a blood drop on the sill of a broken window. Ideal traces are traces of events in people's minds, in the memory of those who committed the crime, of those against whom it was perpetrated, and of those who were eyewitnesses.

Naturally, ideal traces are imperceptible to the investigator, whereas material traces may normally be revealed, provided they are not microtraces or scents. However, one could uncover a scent and establish its source with the help of a police dog.

The possibility of using dogs to track people and animals was known long ago. In 1909, a police dog called Tref became widely known in Moscow for his unique sense of smell. In one case, he tracked three murderers for 115 km and finally caught up with them.

An equally famous police dog was Sultan, who served for fifteen years with the Leningrad militia. During that time, he helped arrest over two thousand persons and found stolen property worth more than two million roubles. During the Second World War, Sultan tracked several nazi saboteurs. Once, he took part in arresting a nazi parachutist who murdered several Soviet servicemen. After committing one of the murders, the nazi sought to escape on a highway with intense traffic. But Sultan caught

his scent from a Finnish dagger found at the scene of the crime and was able to track the criminal down.

Until just recently, police dogs could be used only if the tracks were fresh. In fact, if more than a few hours had passed after the crime was committed, the scent became either too weak for even the dog to sense, or disappeared altogether. In addition, modern cities make it increasingly difficult to track a man by his smell, because of the many interfering odours. Yet, even in such complex conditions, dogs occasionally are able to perform almost unbelievable feats. For example, once a police dog caught scent near a body found in a cemetery in the suburbs of Riga. He led his guide across the city all the way to the railway terminal and began barking at a man who was boarding the Moscow-Riga train. The man was so stunned that he instantly pleaded guilty.

In 1965, a group of Soviet crime experts headed by Professor A.I. Vinberg proposed an original and, at the same time, very simple method of preserving scent samples and scent-bearing objects taken on the spot. They called this method criminalistic odorology. Experiments have shown that the scent sample taken where an incident occurred would remain unchanged for several years, and could be used at any time when employing a police dog.

Under the law, traces of the crime and the criminal can be used as evidence in the case. In addition to the regularities that govern the occurrence of these traces, criminalistics also studies the regularities involved in work with evidence, i.e. its collection, examination, assessment and use in the course of proving guilt in crime.

*Collection of evidence* is a multi-stage process wherein:

(a) the said evidence is uncovered; various significant facts are brought to light;

(b) the said evidence is fixed (secured) as prescribed by law. In addition to imparting conclusive validity to the revealed facts, the fixation of evidence is designed to preserve it for subsequent investigation, assessment, and use;

(c) the said evidence is removed to ensure the possibility of using that evidence, to file it and to examine it (chiefly with reference to material evidence); and

(d) the said evidence is preserved, i.e. measures are taken to