ON SOME PROBLEMS OF FORENSIC RESEARCH OF SCENT TRACES

ᵃALBINA A. SHAKIROVA, ᵇRADIK N. KHAMITOV, ᶜFARIT F. SITDIKOV, ᵈLIANA A. KAMALIEVA, ᵉELVIRA A. KHARISOVA

Kazan Federal University, 18 Kremlyovskaya street, Kazan 420008, Russian Federation
email: ᵃeditor@ores.su,ᵇinfo@ores.su,ᶜglobal@ores.su,
ᵈrussia@prescopus.com, ᵉzahrakhosravi1327@gmail.com

Abstract: In this article we are talking about the section of criminalistic technique, called the odorology. The importance of odorprints in the work of law enforcement agencies can not be overestimated. The smell of a man has two most significant properties: individuality and stability. The individual human smell easily penetrates into clothing, shoes and other objects and materials and is kept there for a long time. In the investigative practice, an odorology examination is carried out in those cases when the crime scene does not leave common traces left by the perpetrator, except for the odorprints, since it is more difficult to get rid of them than from such traces of a person as traces of hands, legs or blood. When executing the procedurally necessary rules for seizures of odorprints and professionally performed laboratory identification, the smell left at the crime scene can be used as material evidence on an equal basis with other tracks. In this article methods of detection and seizure, as well as methods for studying odorprints are considered. In addition, scientific experiments carried out with odorprints were analysed to determine the period of preservation of such traces under different conditions.

Keywords: Forensics, odorprint, identification, odorology, odorological method, physical evidence, olfactory examination.

1 Introduction

As you know, the preparation and implementation of criminal intent is always accompanied by the formation of various traces. Even if the perpetrator attempts to destroy and hide the traces of the crime, there may be quite a few of them at the crime scene.

Informative, in terms of crime case solving, can be not only visible and tangible traces of the offender. It is justly noted that taking into account the current level of crimes, with the increase in the number of robberies, "ordered" murders and other serious crimes, the quality of their preparation and concealment of possible traces also increases. At the same time traditional footprints - hands, feet, shoes, etc. - are coming to light less and less. Therefore, in the investigation of crimes, the role of odorprints which can not be destroyed or masked naturally increases (Levchenkova, 2016).

Detection, fixation and investigation of odorprints are concerned with the odorology (from Latin odor - smell and Greek logos - science). Odorprints are of equal importance with traces being studied in trasology, but due to their specification, their removal and investigation must occur in a specific way.

Criminalistic odorology as a branch of scientific knowledge arose in 1965 when a group of Soviet forensic scientists (A.I. Vinberg, M.G. Mayorov, R.M. Todorov, and V.V. Bezrukov) developed techniques for collecting and preserving odorprints, as well as the possibility of identifying a person according to them. The essence of the odorology method offered by these scientists summarized by using the simplest devices, in particular plastic bags, to preserve the odorprint and store it until the moment when it becomes tactically advantageous to use police tracking dogs (Bezrukov and Vinberg, 1965). However, the overwhelming majority of forensic scientists, as well as representatives of the criminal procedure science, spoke against the method proposed by A.I. Vinberg and his colleagues. In the opinion of the method opponents, the techniques described for collecting and storing odorprints are ineffective in selecting portions of air with a low content of odoriferous substances, and storing odorprints in plastic bags is impossible, since they have a porous structure and volatile substances quickly volatilize.

In subsequent years, on the basis of deep knowledge in the field of biology, genetics, zoology, etc. scientific basis and ways of identifying a person by odorprints have been successfully developed. Today, the study of odorprints allows to establish information about participants in a criminal event, the origin of the smell from a particular person, as well as about the belonging of certain items to the victim or others. M.V. Saltewski identifies two groups of sources of odor: 1) traces - sources of the smell of a person; 2) traces - sources of own smell. The author refers to the first group all solid and liquid substances, separated from the human body (hair, blood, sweat, etc.); objects that are in temporary contact with the human body (tools of crime, household appliances); objects that are in constant contact with the human body (clothing, shoes, etc.). To the second group M.V. Saltewski refers items and objects of organic and inorganic origin, which have their own smell (combustible and lubricating substances, drugs, plants, etc.) (Saltievsky, 1976; Villalobos Antúnez, 2001).

Depending on the methods of seizing and analysing odorprints, criminality is subdivided into cynological and instrumental. In cynological odorology, as an analyser of odorous substances, the olfactory organ of a police tracking dog is used. In instrumental odorology, as analysers of odorous substances, physicochemical methods and instruments are used.

2 Methodology

To date, in the investigation and expert practice, cases of appointment of expensive examinations are quite common. The results of these examinations are successfully used as evidences on the criminal case. However, the attention of scientists and practitioners is attracted by the question of the possibility of establishing specific objects by smell. The fact that the accuracy of the conclusions which can be obtained by sampling performed by police tracking dog, is still raises some doubts. On the other hand, specific cases are known when the results of the use of a police tracking dog have been used in judicial evidence as sources of evidence and have yielded undeniable results, and therefore the further prospects of development of criminalistic odorology do not cause doubts (Kaldenbach, 1998).

Meanwhile, in modern forensic literature, very little attention has been given to questions of the study of orthodontics. This circumstance, as well as the weakness of the corresponding technical base and the lack of sufficient experience of using the canned smell in the detection of crimes, create serious difficulties for the effective implementation of the described methods in the daily practice of the law enforcement agencies (Makogon & Kosareva, 2015; Sulkarnaeva et al, 2018).

Odorprints can not be perceived with the help of sight, or special technical devices for their visual detection, but they are detected through the use of police tracking dogs, whose perception abilities are much greater than the human, being the microquantity of a specific gaseous substance. In addition, the removal and fixation of odorprints most often corresponds to a tactical-technical algorithm for microobjects collecting. Odorprints are the tiniest formations of a smelling substance that remain at the site of the accident as a result of the interaction of the odor source with the objects of the environment and individualize the subject who left this smell (Chernyshova, 2017).

If for the expert analysis of some substances, such as explosives and drugs, laboratory testing is expedient to carry out by instrumental methods (police tracking dogs are indispensable for the search of such substances in operational work at airports, railway stations, etc.), then the study of odorprints by instrumental methods at present it is not possible, because it does not decipher what substances and how to determine the individuality of a person when it is detected by a dog. Only olfactory research using police tracking dogs of an individual smell allows to identify a person by his odorprints. In addition, the undoubted advantage of the olfactory method is not so much in the high sensitivity of the nose of the dog (modern analytical instruments have detectors comparable in sensitivity to the dog), but in high selectivity, which makes it possible to identify each individual from a mixture of others' smells (Schoon and Haak, 2002). Russian criminalists have established and widely used in

the practice of disclosure and investigation of crimes the so-called "phenomenon of spilled blood", when the victim's blood absorbs the smell of the offender, it only costs a moment to touch it. In this case, the blood of the victim permanently retains the smell of the offender.

The forensic olfactory examination of odorprints is made in stationary conditions by comparing olfactory samples seized at the scene of the incident and presented for comparison olfactory samples obtained from the persons inspected by the case. For this purpose, specially trained laboratory dogs and sets of externally monotonous olfactory objects are used, which, in its reactions to bio-detectors, allow one or another sign to be detected in the test smell. The bio-detector should demonstrate a stable reaction of recognition of the individual's personal smell on the object under study. The results obtained must necessarily be reproduced by another (other one) police tracking dog.

Olfactory laboratory is an isolated room where glass jars with olfactory specimens-witnesses are arranged at random on special tripods. Among them is the explored olfactory object. After it, in the course of movement of the detector dog, there is a control sample - an olfactory probe obtained from the suspect. A dog-detector at the entrance is allowed to sniff a sample from the scene. Further, the dog moves along a row of jars and sequentially sniffs the placed objects. When perceive a familiar smell, the dog gives a sign with signal posture. If no match is found, the dog takes the signal posture of the control olfactory sample.

3 Results and discussion

Some scientists have expressed an opinion about the illegitimacy of using as evidence data obtained with the use of police tracking dogs. Generally, this opinion is argued by the fact that the dog identifies the person and, since the mechanism of perception and analysis of the dog's odors is unknown, it is impossible to build evidence based on the behavior of the dog.

Proponents of the use of the results of an odor sample as evidence offered several options for deciding how, in what procedural quality, in what kind of evidence, its results should be entered into the process: in the form of a certificate that will appear in the case as "another document"(Winberg A.I.); as a result of an investigative experiment (Belkin R.S.) or a kind of identification (Saltievsky M.V.) (Moiseeva, 2015).

Now the results of the use of police tracking dogs are presented in the form of an expert opinion. However, a number of questions arise here. Firstly, in the maintenance of an odor sample, neither the cynologist who organizes it, nor another forensic scientist-participant in the study of odor samples are specialists in the field of odorology. Secondly, a specialist can not indicate in his opinion, as required by Art. 191 of the Criminal Procedure Code (hereinafter referred to as the CPC), can not specify what researches he produced, can not give a motivated answer to the questions posed. In the maintenance of such an examination, it is difficult to secure the rights of the accused provided in Art. 185 of the Criminal Procedure Code. How can the investigator and the court verify the reliability of the expert's conclusion that they are obliged to do according to the law (part 3, article 70; part 3, article 80 of the Criminal Procedure Code).

The main problems, as practice shows, at various stages of work with fragrant objects are the inopportune collection of odor samples from seized objects, delay in directing odorants to the study, a violation of the method of collecting the packaging of odorants (Straus and Kloubek, 2010).

4 Summary

However, the use of achievements in the field of odorology in criminology are not limited only by the use of a police tracking dogs as an operational-search facility, as well as to identify a person on canned traces of smell. The range of use of the achievements of the odorology is much wider (Schoon, 1991).

In this connection, it is expedient to distinguish the following directions of the use of the odorology method in criminology:

1. Use of the abilities of animals, in particular dogs: in the search and detection of drugs, potent and poisonous substances at border crossing points, at customs, airports, etc., when inspecting persons, vehicles, cargo and other objects; when inspecting the crime scene; when searching for and finding weapons, ammunition, explosives; when searching for and finding corpses and their parts, living people at crash sites, debris, accidents, disasters, in natural disasters and other accidents.

2. Use of instrumental (olfactory) methods: when searching for and detecting mono-products of substances that have caused or could cause accidents, disasters, crashes, mass poisonings, also prepared for use or used to commit crimes (nerve agents, psychotropic and other potent substance); in prophylactic purposes for passage through pharmaceutical, chemical and other factories associated with the production of hazardous substances.

To the above, it is necessary to add the use of odor traps for the purpose of preventing or securing the detection of a crime, forming additional odorprints that facilitate a quick search and successful detection of the offender (for example, such a sufficient effective means as SP-80 used in the places where the alleged the offender) (Joynt, 2018).   Each of these areas contributes to the resolution of operational and investigative tasks, the nomination and verification of versions, the search for and collection of evidence, and the identification of ways to investigate crimes.

5 Conclusion

From the above, it can be concluded that the odorprints, and the items on which they are preserved, fully meet the requirements for physical evidence. It is known that the material evidence is the items that served as instruments of crime, or have retained the traces of the crime, as well as all other items that can serve as a means to detect a crime, establish the facts of the case, identify the perpetrators or to refute the charge or mitigate the responsibility. The odorprints detected at the scene, as well as items with such traces, fully correspond to the presented wording of Article 81 of the Criminal Procedure Code of the Russian Federation and allow to solve the tasks assigned to them by the criminal procedure law.

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