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IDENTIFICATION, ACQUISITION, AND DOCUMENTATION OF ODOR TRACES DURING THE INVESTIGATION OF CRIMES

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Abstract
This article examines the problems of using the results of odorological research in the process of criminal proof. The scientific, procedural, technical-tactical, and ethical aspects of applying the odorological method are analyzed. Particular attention is given to the debate concerning the evidentiary value and admissibility of odor identification results in criminal proceedings. The positions of scholars supporting and opposing the inclusion of odorological findings in the system of evidence are critically assessed. The author substantiates the possibility of evaluating odorological results in conjunction with other evidence and emphasizes the necessity of procedural safeguards and methodological standards to ensure reliability, objectivity, and respect for human dignity. The study concludes that further improvement of procedural regulation is required to strengthen the evidentiary status of odorological examinations.

Keywords: Odorological method, criminal proof, evidentiary value, forensic identification, scent evidence, operational-search activity, procedural guarantees, ethical issues, reliability of evidence.

Introduction

Olfactory traces, by their nature, are latent and can only be detected during a logical reconstruction of the events that occurred at the scene.
According to Furton et al. (2015), advances in odor detection and the standardization of canine and instrumental methods have significantly improved

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the reliability of odour as a form of forensic evidence, associating an individual with a specific location or object in criminal investigations[1].

Identifying odor traces is a very complex task, requiring the examinee to immediately understand the mechanism of the crime committed and the hypothesis about how the perpetrator might have behaved. A bloodstain or a piece of human skin can be found, for example, where the perpetrator should have used physical force and, accordingly, where there is a high probability of inflicting bodily harm. It is necessary to photograph fallen or plucked hair, broken nails, and other particles that have separated directly from the human body, and describe in the report why they should be placed in a glass test tube with a stopper, polished with tweezers. These particles can be used to isolate odorous substances and conduct other biological examinations.

Clothes, shoes, and personal belongings left at the scene are, of course, much easier to find. Practice shows that at the crime scene, a person often loses, for example, shoes, gloves, a wallet.

If the necessary procedural rules for obtaining odor traces and professionally performed laboratory identification are observed, the odor left at the scene can be used as material evidence along with other traces[2].

Such objects serve as primary sources of information about the personality of the criminal, therefore their preservation as sources of odorological information is a primary task.

It should be remembered that prolonged contact with the found item by a stranger “contaminates” its odor characteristic.

Thus, when working with objects containing human odor traces, it is necessary to observe the following rules:

- all instruments must be sterile;
- small objects should be taken with tweezers, and large objects should be examined only in gloves;

[1] Furton, K. G., Caraballo, N. I., Cerreta, M. M., & Holness, H. K. (2015). Advances in the use of odour as forensic evidence through optimizing and standardizing instruments and canines. Philosophical Transactions of the Royal Society B: Biological Sciences, 370(1674), 20140262. https://doi.org/10.1098/rstb.2014.0262

[2] Davronov Atobek Ravshanovich. (2023). ODOROLOGICAL EXAMINATION IN THE CRIME INVESTIGATION PROCESS. THEORY, METHODS AND PRACTICE. World Bulletin of Management and Law, 18, 27-32. Retrieved from https://scholarexpress.net/index.php/wbml/article/view/1925

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- first of all, it is necessary to check the item for traces of papillary patterns and overlapping traces;

After inspection, the product should be packaged in aluminum foil.

It should also be remembered that odor traces are very well preserved in the body.

in enclosed spaces, in the cold, on relief and rough surfaces (therefore, firearms are an excellent source of smell information).

However, traces of objects exposed to extreme humidity or sunlight, trampled by people, and with smooth surfaces are almost always unsuitable for identification research.

While methods for detecting odor traces have not undergone significant changes since the discovery of the odorological method, methods of fixation and removal, on the contrary, have significantly developed since the 1980s.

In the 70s and 80s of the 20th century, three main methods of separating an odor trace from a carrier were used:

a) obtaining odor molecules with a syringe;

b) obtaining odor molecules with a container;

d) adsorption of the odor trace onto artificial carriers.

At the scene of the crime, when a chair or armchair, a footprint of a shoe, or, say, a men's boot, where the suspect was sitting, was found, a syringe suction of odor molecules was used[3].

For this, a syringe with a volume of 100-200 cm was brought close to the surface of the trace and air containing odor molecules was “collected”, then the air sample was sent to a glass container with a lowered opening. Small pieces of bandage or flannel are placed in the container to better preserve the smell trace. Similarly, to fill the container, the process is repeated five times or more, then it is hermetically sealed and sealed. From one source of the odor trace, several containers with odor samples are often taken.

If it was necessary to obtain odor samples from a closed room where the perpetrator was located, or from a flat or volumetric track, the method of obtaining odor molecules directly with a container was used. For this, they

[3] Салтевский М.В. Криминалистическая одорология (работа с запаховыми следами): лекция. Киев, 1976. С. 24-28.

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squeezed the polyethylene flask, brought its mouth closer to the track, and stopped squeezing, as a result of which the air containing odor molecules was drawn into the flask.

Levashova (2023) emphasises that in modern forensic practice, odorological research often provides sufficient ground for identifying perpetrators when only a person's scent traces remain at a crime scene, underscoring the practical value of the method[4].

The adsorption method is used to register the odor traces of the criminal's hands, feet, and objects. For this, a sterilized flannel napkin is placed on the odor-emitting object and left in contact for 20-30 minutes. Then the napkin is placed in a container and the lid is closed.

However, Professor Kisin, who led research on the study of human odor traces and their use in solving crimes, concluded that the methods of collecting odors proposed by the founders of odorology were ineffective and even unsuitable for practice. Methods such as collecting odor traces from the air using syringes, flasks, and polyethylene bags are unsuitable for subject identification, as odor molecules are dispersed in their main mass[5].

At that time, domestic criminologists turned to the experience of their foreign colleagues, primarily German and Hungarian scientists who achieved the highest results in this field.

It was German specialists who, instead of preserving unusable air samples, began collecting odor traces on cotton and viscose wipes and applying them to odorous items. To reliably preserve the odor trace, the napkin is squeezed with aluminum foil on all sides. They also proposed methods for preparing odor traces and laboratory analysis.

Currently, it is difficult for forensic experts to find tools for working with odor traces detected at the scene in the "Criminalist" suitcase. Such a suitcase must have an adsorbent - most often these are pieces of sturgeon or flannel measuring 10x15 cm (treated in a drying cabinet at 120 degrees), glass containers, a roll of

[4] Levashova, O. V. (2023). Application of the method of forensic odorology in the detection and investigation of crimes: problems and prospects. Current Issues of the State and Law, 7(4), 637–644. Retrieved from https://journal-vniispk.ru/2587-9340/article/view/303761
[5] Салтевский М.В. Использование запаховых следов для раскрытия и расследования преступлений: лекция. Киев, 1982. С. 31-33.

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aluminum foil, rubber gloves, a wide set of tools - a handle, tweezers, medical scissors.

Marchal and Ferry (2017) demonstrated that specially trained dogs can match human scent samples from the same individual with high accuracy after extensive training, highlighting the potential validity of canine-based odor identification in forensic settings[6].

If the object carrying the odor trace is small, it is placed in a glass jar with a sterile forceps or cornsang, or wrapped in aluminum foil and placed in a paper bag.

If a large object or for other reasons cannot be removed for olfactory (previously odorological) examination, an adsorbent is used. First, water is sprayed on the object several times (scientists have found that moistening stimulates the release of odorous substances), then a piece of bayka or flannel is placed and covered with several layers of aluminum foil, which ensures close contact between the adsorbent and the odor tracer object. For the odorous substances in the product to pass into the adsorbent, the product must remain in this state for at least 1 hour[7].

Also, an item not placed in a storage jar must be accompanied by a label indicating the place, time, date, and characteristics of the obtained impression.

As noted in criminalistics research, although canine detectors serve as valuable tools for identifying odor traces, there is no consensus among specialists regarding the admissibility of odorological results as evidence in criminal proceedings due to methodological and evidentiary concerns[8].

The time required for contact between the odor-emitting substance and the adsorbent to occur is determined experimentally by specialists. For this, a piece of flannel measuring 10x15 cm, properly prepared, i.e., dried in a drying cabinet and weighed on analytical scales, is placed on the trouser belt over the shirts of the experiment participants. Then, every 15 minutes, the flaps were pulled again and returned to the participants of the experiment.

[6] Marchal, S., & Ferry, B. (2017). Identification of human odors by police dogs. Techniques de l'Ingénieur. Retrieved from https://www.techniques-ingenieur.fr/en/resources/article/ti958/identification-of-human-odors-by-police-dogs-re182/
[7] Гриценко В. В., Обидин А. Б., Старовойтов В. И. Влияние фактора времени на образование, сохраняемость и возможность исследования запаховых следов человека: Методические рекомендации. М., 2000. С. 14.
[8] Rossinskaya, E. R. (1999). Criminalistic odorology. In Criminalistics. Retrieved from https://be5.biz/pravo/k010/2-5.html

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As a result, it was found that in the first 30 minutes, the mass of the flakes increased significantly due to an increase in the concentration of moisture and aromatic substances. In the next 15 minutes (i.e., a total of 45 minutes of the experiment), the mass of the flakes increases slightly again, and then practically does not change to the bottom of the experiment (the experiment lasted a total of 120 minutes). The mass of the flaps in the experiment participants differed slightly, which is associated with the amount of sweat released and the level of general psychophysiological state.

The main conclusion of this experiment was as follows: the minimum period for collecting the odorous substance is 45 minutes.

However, when choosing an odorous substance at the crime scene, it should be taken into account that such selection from the odorous substance to the adsorbent is carried out in most cases at a temperature below human body temperature. Therefore, it is necessary to increase the contact time of the odorant and adsorbing wipes to one hour, and if possible, even more[9].

The adsorption method can undoubtedly be used to collect odorous traces, but it is preferable to take the odor-giving object itself or part of it, since the cryogenic-vacuum method allows for the preservation of a larger amount of odorous substances.

The following must be reflected in the record of investigative actions related to obtaining odor traces:

a) the location of the objects carrying the odor trace, the properties of their material, the nature of their mutual arrangement and surface;

b) by what method are odor traces obtained (full removal of the odor carrier or only the odor trace), what removal means and packaging materials were used (with confirmation of their sterility).

Photographs reflecting the relative position of the objects carrying the odor trace may be attached to the record of investigative actions.

Also, diagrams and plans of the premises and locations where the investigative actions were carried out must be attached to the protocol of investigative actions, indicating the location of the seized trace evidence.

[9] Гриценко В. В., Обидин А. Б., Старовойтов В. И. Влияние фактора времени на образование, сохраняемость и возможность исследования запаховых следов человека: Методические рекомендации. М., 2000. С. 42.

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In conclusion, it should be noted that obtaining odor traces from objects carrying odor information should be carried out before other exposure to the object.
It is not advisable to work with other traces found on objects until odor traces are obtained, as this creates a risk of bringing unwanted impurities or even losing the odor trace[10].

References

1. Furton, K. G., Caraballo, N. I., Cerreta, M. M., & Holness, H. K. (2015). Advances in the use of odour as forensic evidence through optimizing and standardizing instruments and canines. Philosophical Transactions of the Royal Society B: Biological Sciences, 370(1674), 20140262. https://doi.org/10.1098/rstb.2014.0262
2. Davronov Atobek Ravshanovich. (2023). ODOROLOGICAL EXAMINATION IN THE CRIME INVESTIGATION PROCESS. THEORY, METHODS AND PRACTICE. World Bulletin of Management and Law, 18, 27-32. Retrieved from https://scholarexpress.net/index.php/wbml/article/view/1925
3. Салтевский М.В. Криминалистическая одорология (работа с запаховыми следами): лекция. Киев, 1976. С. 24-28.
4. Levashova, O. V. (2023). Application of the method of forensic odorology in the detection and investigation of crimes: problems and prospects. Current Issues of the State and Law, 7(4), 637–644. Retrieved from https://journal-vniispk.ru/2587-9340/article/view/303761
5. Салтевский М.В. Использование запаховых следов для раскрытия и расследования преступлений: лекция. Киев, 1982. С. 31-33.
6. Marchal, S., & Ferry, B. (2017). Identification of human odors by police dogs. Techniques de l'Ingénieur. Retrieved from https://www.techniques-ingenieur.fr/en/resources/article/ti958/identification-of-human-odors-by-police-dogs-re182/
7. Гриценко В. В., Обидин А. Б., Старовойтов В. И. Влияние фактора времени на образование, сохраняемость и возможность исследования

[10] Балашов Д.Н., Балашов Н.М., Маликов С.В. Учебник по криминалистике. М., 2005. С. 257.

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ISSN (E): 3067-7203
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Website: usajournals.org

запаховых следов человека: Методические рекомендации. М., 2000. С. 14.

8. Rossinskaya, E. R. (1999). Criminalistic odorology. In Criminalistics. Retrieved from https://be5.biz/pravo/k010/2-5.html
9. Гриценко В. В., Обидин А. Б., Старовойтов В. И. Влияние фактора времени на образование, сохраняемость и возможность исследования запаховых следов человека: Методические рекомендации. М., 2000. С. 42.
10. Балашов Д.Н., Балашов Н.М., Маликов С.В. Учебник по криминалистике. М., 2005. С. 257.