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DACTILOSCOPIC INFORMATION IN THE INVESTIGATION OF CRIMES: TOPICAL ISSUES OF THE XXI CENTURY

The article deals with a brief historical journey, devoted to the development of dactyloscopic science. The article emphasis the existing main problematic issues in this activity for certain three directions of the collection and use dactyloscopic information. To solve problematic issues, it is proposed to develop a long-term phased Concept of the state policy in the field of reforming activities on technical and criminalistic support, expert and forensic support of justice in Ukraine.

Keywords: dactyloscopic information, technical and criminalistic support of justice, expert and forensic support of justice, standardization of forensic science.

From the scientific works of R. Handl and E. Locar it is known that the main provisions of dactyloscopy are based on the experience of centuries. Dactyloscopic science appeared, at least, 500 years earlier than the foundation of the oldest European University. Summarizing in general terms history of dactyloscopy E. Lokar pointed out that prehistoric people had already paid attention to the pattern of papillary lines. However, only in the countries of the East (for example, Babylon and Nineveh) or the Far East (for example, China and Japan) this observation continued its way and embodied in the use of papillary patterns at certification of contracts and, even, the appearance of fingerprints in criminal cases. The use of fingerprints to certify the identity of the person happened most likely due to the mystical notions of them than correct understanding of their meaning for identification.

In science, the papillary lines noticed by Marcello Malpighi in 1686 were really discovered, described and classified by Purkinje in 1823 and discovered again in 1886 by Francis Galton. Since then, the development of dactyloscopy had two sources: practical experience and science. Herschel, followed by Henry – in India, Folds – in Japan, Pottechter – in Indochina began to apply fingerprints at authentication of documents and identification of people. Galton's works gave impetus to further research on morphology and comparative anatomy of papillary lines with the subsequent application of them in criminalistics. At the same time in South America, Vutsetich and his followers were developing numerous fingerprint registration systems.

In 1899, E. Henry returned to England from India and introduced his own Dactyloscopic system to the British Association for the Development of Sciences and already in 1900 the world saw the first edition of his book «Classification and Application of fingerprints», which became a desktop guide for English dactyloscopists. From this time, in fact, dactyloscopy has begun its way as the common method of identifying criminals [1; 2].

On the territory of Ukraine the only possible evidence of use fingerprints during the Kievan Rus (the end of the IX century – the middle of XIII century) is the statement of the famous Russian ethnographer of the nineteenth century Maksimov S. about the existence of a custom to certify documents with a fingerprint, from where the expression went: «I put my hand» [3, p. 537].

It is definitely known that the ancestor of both Ukrainian and Russian dactyloscopy is considered to be G. Rudy – the head of the search department of Kyiv city police – who in 1903 on behalf of the Kyiv Police Chief visited the Dresden exhibition, where he drew attention to «...a new way to identify the identity of criminals with fingerprinting, i.e. imprints of 10 fingers of both hands» and already, despite the bureaucratic obstacles, since January 1, 1904, organized a new dactyloscopic department at the search bureau, whose staff fingerprinted 1987 criminals during the first year of the department's existence. In January, 1905 there was published Instructions to officers of the Kyiv Detective Police, developed by G. Rudy, consisted of 10 chapters and 205 paragraphs, 29 of which were devoted to fingerprinting, it was the first normative legal act not only in Ukraine, but also in Russian Empire, which legally fixed

application in the police practice of fingerprinting not only as a method of criminalistic registration of criminals, but also a method for detecting trace fingerprint information at the scene or at anthropological cabinet [4, p. 43–44; 5, p. 305–319].

History knows, at least, the first two positive facts of use special knowledge on fingerprinting in the Russian Empire that took place in Ukraine and relate to 1911:

- expert examination in the case of the robber-recidivist Babytsky, conducted in Odesa search department [4, p. 52];

- expert examination in the case of «expropriator of money», the conclusions on which was represented in Kharkiv court by a well-known forensic physician and honored professor M. Bokarius [6, p. 360], the results of those examinations were imposed by the courts in the basis of the indictment sentences.

To date, work with fingerprint information is multi-faceted in relation to other types of criminalistic significant trace information, and we conditionally divide it (work) into three stages, proceeding from the provisions of the current Criminal Procedural Code (hereinafter – CPC) of Ukraine (of 2012), namely:

- 1) collection (detection, fixation, withdrawal, storage and transportation) of dactyloscopic information during inspection of crime scene and other investigative (search) and secret investigative (search) actions (hereinafter – investigative actions) (except for the examination):

- detection of objects-bearers on which during the commission of a crime traces of hands could be formed, which (objects-bearers) can be collected; detecting traces of hands on objects-bearers that cannot be collected; fixation, seizure, packing of objects-bearers and detected traces of hands;

- storage and transportation of the withdrawn objects-bearers on which during the commission of a crime traces of hands could be formed, detected traces of hands, withdrawn during investigative actions to institutions of forensic examination;

- obtaining samples for examination and unauthorized samples, necessary for conducting comparative research (prints (impressions) of fingers and hands);

- transportation of traces of hands and samples to institutions of forensic examination;

2) conducting expert researches of traces of hands and provided samples in laboratory conditions at the forensic examination institutions:

- detection of traces of hands on objects-bearers on which during the commission of a crime traces of hands could be formed;
- expert research of detected traces of hands on objects-bearers (in case if detected), as well as traces of hands detected during investigative actions;
- determining the suitability of hand traces for identification and of samples provided – for comparative study;
- conducting an identification study in the presence of samples;
- in case of suitability of traces of hands for identification, absence of samples for comparative study or their presence and getting a negative result of a comparative study, the traces of hands, suitable for identification, are sent for verification by dactyloscopic records;

3) functioning (formation, maintenance, use) of the system of dactyloscopic registration (dactyloscopic records):

- verification of traces of hands withdrawn at crime scene or unknown disappearance of persons by dactyloscopic records; in the case of a negative result when checking – adding trace information to dactyloscopic records;
- criminalistic dactyloscopic registration, during which the relevant units of law enforcement bodies conduct fingerprinting of persons suspected or accused of committing crimes, persons who are subject to administrative arrest, persons who cannot report about themselves, unidentified corpses, whose dactyl cards are checked and, in case of a negative result, are placed in the operative-search collections of dactyloscopic records that are part of the system forensic registration of the Ministry of Internal Affairs of Ukraine.

Problematic issues on the application of the achievements of dactyloscopic science in detecting and investigating crimes in various aspects were considered by V. Bakhin, V. Bernas, V. Biryukov, B. Brudovsky, A. Fokina, I. Fridman, G. Granovsky, G. Ejubov, A. Ishchenko, N. Klimenko, S. Kobzar, I. Krasnyuk, V. Lysychenko, A. Paliashvili, O. Petelyuk, G. Prokhorov-Lukin, E. Razumov, O. Sadchenko, E. Svoboda, M. Saltevisky, M. Segay, Yu. Yaroslav, O. Volkova, other scientists and practitioners.

Analysis of many information sources on the history of development fingerprinting and its use in detecting and investigating crimes in more than century period (since 1904) on the territory of

Ukraine during its stay in the Russian Empire and the USSR, the implementation of more than 25 years of monitoring during the practical and scientific work of the author in the field of dactyloscopic information, allows us to state that there are a number of problematic issues that remain unresolved in this activity, on what we have repeatedly stressed, and that are grouped as follows.

The main problems of collecting fingerprint information:

- not ensuring timely and qualitative protection of the crime scene after a signal about the event by law enforcement units, unprofessional actions of emergency rescue services and units that may come to crime scene before investigative-operational groups (hereinafter – IOG), which results a change in arrangement things at crime scene, the insertion of unnecessary trace information not related to the event;

- after inspecting the scene, the relevant employees do not always check the range of people who could leave traces not related to the event (victims, their relatives, etc.), because that entails spending extra time and attraction of additional personnel to work with «superfluous» dactyloscopic information;

- when committing crimes in large territories and large premises, in public places, it is necessary to conduct prompt and qualitative inspection, which requires additional forces and resources that are not always involved;

- criminalists do not apply the full range of methods for detecting fingerprint information (as a rule, they apply only dactyloscopic powders, although expert kits should contain means for detecting traces of hands with iodine and cyanoacrylic acid vapors, dark and light sprays for detecting traces of hands on wet, greasy surfaces, etc.), that results the damage or not detecting of traces;

- non-use of indicative order algorithms for collecting trace information (first of all, hormonal, dactyloscopic and biological (on genetic levels), with which one can identify offenders);

- there is no trace detection algorithm for collecting trace information (in particular dactyloscopic and biological (at the genetic level) on the body of alive persons and corpses;

- objects-bearers are not withdrawn, for their qualitative laboratory research, that leads to loss of trace information;

- when describing the detected traces of hands in the protocols of investigative actions there are not specified the type of papillary

patterns, their size, localization (place location and their relative position and position relative to the real the situation), the traces of hands are not photographed, not packed and not sealed, which may lead to the recognition of them (proofs) and conclusions experts on the results of their (traces of hands) examination as unreliable evidence;

- after inspecting scene dactyloscopic examination is not always immediately appointed, that results a change in the initial state of traces (objects of expert research) up to their destruction, etc.

The main problems at expert research of traces of hands:

- not all directions of dactyloscopic research are methodically secured improperly (for example, on the defining little informative hand traces suitable for identification, conducting identification for them, timing traces of hands, etc.);

- proper conditions to detect traces of hands at laboratory are not always organized (no general ventilation, exhaust cabinets, laboratory utensils for the preparing reagents, etc.);

- non-use of full range of methods for detecting hand traces on different surfaces;

- incorrect use of methods for detecting traces of hands (for example: fingerprint powder is used to identify traces of hands on wet, contaminated surfaces; magnetic fingerprint powder and magnetic brush are used to detect traces of hands on metal surfaces; an attempt to detect traces of hands with fingerprint powder while at the time of the examination the old of probable traces exceeds the limits of efficiency for the chosen method);

- the tracing mechanism is not investigated (for example, it is not cleared how the trace appeared – by papillary lines (positive trace), by interpapillary grooves (negative trace) or both (positive-negative trace);

- not understanding the difference between the mechanisms of prints and impressions of hands, experts determine all their as imprints;

- there are no images (pictures) of the package, as well as the objects (or part of them) provided to research;

- failure to comply with the sequence of the course of expert research, the content of the conclusion is unreasonably reduced;

- expert conclusions do not contain special terminology, scientific style of the text is not respected;

- conclusions contain in the formulation of responses the conditional numbering of sticky tapes (traces), which was entered in the text for convenience of description;

- stylistic and punctuation errors that result the phrases formulated by the expert in the conclusion may have ambiguous interpretation etc.

The main problems at the operation of dactyloscopic records:

- in some units of the National Police of Ukraine (hereinafter – NPU) there are no designated places for fingerprinting; no orders on appointment responsible persons for fingerprinting in the areas of activity;

- no fingerprinting of the persons subject to mandatory dactyloscopic registration, unidentified corpses;

- incomplete dactyl cards for alive people and unidentified corpses, they might contain unconfirmed personal data of individuals, information about unidentified corpses that are fingerprinted;

- not always provided lists of the persons subject to dactyloscopic registration, from the interested services, there are no objective verifications concerning dactyl card of such persons, after the verifications there are no reports to the heads of departments of the NPU with the provision of copies to the head of the Scientific-research Expert-Forensic Centers (hereinafter – SREFC);

- not always dactyl cards received during fingerprint registration, are provided within 3 days to the units of the expert service;

- the registration cards of the traces of hands subject to registering are not always completed;

- the registration cards of traces of hands are not always sent from the local level for registration at the regional and central level, terms for sending are violated: 5 days from the moment of examination – to send from the local to the regional level, 5 days – from the regional to central level;

- not regular semi-annual verifications (December, June) of information available in trace libraries with records of criminal proceedings (cases), no reports to the SREFC on the results of the verifications, on which traces collected at scenes of discovered crimes are removed from the records;

- the deadline for verifications is not respected – 15 days;

- the existing automated system dactyloscopic records of the Ministry of Internal Affairs of Ukraine needs to be improved by

creating a united automated data bank with increasing capacity of existing ones central, regional and local software and technical complexes for the sake of real-time checks and authorized access to databases for employees of all law enforcement agencies, etc.

Finally, it should be mentioned the fact that with the adoption of the existing Criminal Procedural Code of Ukraine in 2012, by direct norms specialists-criminalists in fact were forbidden to take any action with detected, fixed, withdrawn and packed tracks before registration the events in the Unified Register of Pre-trial Investigations. This is, in particular, about carrying out preliminary research while inspecting the scene of the event with the assembling according to its results of indicative information about the criminal, urgent sending photos of traces of hands to check for automated dactyloscopic records of the Ministry of Internal Affairs of Ukraine, etc. for the disclosure of crimes for «hot footprints».

The situation is aggravated due to the reform of the internal affairs bodies in particular the separation from the units of the expert service Ministry of Internal Affairs of Ukraine of employees who were assigned to newly created units responsible on technical and forensic provision of investigation of crimes within the structure bodies of pre-trial investigation of the NPU, which perform functions of specialists – forensic investigators. Much of the posts in the mentioned units were staffed by persons who did not have special training and the experience of such work, this resulted sharply increased total number of collected traces of hands at their low quality which the experts of the expert service consider unsuitable for identification.

It should also be mentioned that in 2001 and in 2004 under the auspices of the State Scientific Research Expert Forensic Center of the Ministry of Internal Affairs of Ukraine there were held two international scientific-practical conferences on use of fingerprint information in disclosure and investigation crimes (the latest of which was dedicated to the 100th anniversary of implementation fingerprinting in the practice of law enforcement agencies in Ukraine), for the results of which there were published two collections of materials in which topical issues are covered, many of them still remain without proper response.

There is no doubt that to solve the raised issues it is necessary to use a set of measures for managerial, functional, organizational,

personnel, normative, scientific and methodical, information, resource and other types of security.

Part of the raised issues is regulated. Example, immediate appointment of forensic examinations and referral of decisions on appointments along with research objects to prevent damage or loss of trace information – in the Operating Instructions on forensic records of the expert service of the Ministry of Internal Affairs of Ukraine [7], but the proper organization of the implementation of the specified norm at the level of the NPU units is absent. Other normative document developed by us – Typical methods of Quality Management System QTM 19/6-001.2006 «Quality management in activities of the units of the expert service of the Ministry of Internal Affairs of Ukraine in the field of dactyloscopic research» – identifies, in particular, typical inconsistencies (disadvantages), indicating measures to control all areas of collection and use of fingerprint information [8].

However, some of the raised issues remain unresolved, in particular:

- actualization of mastered and development of new methods to detect traces of hands;

- adjustment of the preliminary research of the trace information on a crime scene, use of forensic registration system, updating of the list of samples for carrying out examinations or secretly obtained for comparative research, etc. at the level of the CPC of Ukraine;

- adoption of the Law of Ukraine «On Biometric Registration» with definition of categories of persons subject to mandatory dactyloscopic registration, in particular, persons who are detained for vagrancy, introduction of voluntary dactyloscopic registration, etc.;

- accreditation of institutions for technical and criminalistic, forensic and expert provision and development of detailed regulations (at the level of standards, guidelines, instructions, etc.) in accordance with the requirements of international system of Quality management standards of State Standard of Ukraine ISO/IEC 17020:2014 «General criteria for the activities of various types of inspectorates» (under which units for collecting trace information get accreditation) and State Standard of Ukraine ISO/IEC 17025:2006 «General requirements for the competence of testing and calibration laboratories» (for which the institutions of forensic examinations are accredited), other international standards harmonized in Ukraine, best practices in collecting and

expert researching evidence, in particular, on the defining the procedure (algorithm) of the actions of inspectors-criminalists and leaders of the IOG while inspecting the event scene;

- update existing and develop new algorithms to collect trace information during investigative actions;

- update existing and develop new methods of conducting expert examinations in accordance with prospective plans on research work of the state institutions of forensic examinations, agreed with the Coordination-methodical council on problems of forensic examination under the Ministry of Justice of Ukraine;

- use of the system of civil fingerprint registration, in which the units of the Migration Service coordinated by The Cabinet of Ministers of Ukraine through the Minister of Internal Affairs obtain digital fingerprint information that is placed into the appropriate databases and is entered into the RFID chip of external and internal passport documents of Ukraine, for identification of unidentified corpses, persons who cannot report data;

- proper resource support for the activities providing the technical and forensic support of justice etc.

These disadvantages are also inherent in activities with other types of trace information, at least, the hydrological and biological (at the gene level).

Actualization of the activity on collecting and using the trace information, including fingerprints, in the investigation of crimes lies in the standardization of the work of investigators, inspectors and forensic experts by harmonizing international standards, developing national standards for detecting, fixing, collecting, packaging, transporting and expert research of trace information. For this aim the Kiev Scientific Research Institute of Forensic Expertise the Ministry of Justice of Ukraine initiated the creation of the Technical Committee «Forensic examination» of the National standardization body of Ukraine, which will start work in the near future.

In order to solve the raised complex of problematic issues, to our mind, there is a need to develop a long-term Concept of State Policy in the field of reforming the technical-forensic and forensic-expert support of legal proceedings in the framework of judicial reform, which must radically change the work of the justice system in Ukraine, namely provide reliable evidence base in criminal proceedin.

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**Дактилоскопічна інформація в розслідуванні злочинів:
актуальні питання XXI століття**

Висвітлено становлення та розвиток дактилоскопічної науки. Визначено напрями діяльності зі збирання та використання дактилоскопічної інформації на сучасному етапі розвитку криміналістики й судової експертизи, особливості положень Кримінального процесуального кодексу України. Окреслено основні проблеми в цій діяльності, запропоновано способи їх розв'язання.

Ключові слова: дактилоскопічна інформація, техніко-криміналістичне забезпечення правосуддя, судово-експертне забезпечення правосуддя, стандартизація судової науки.