proLékaře.cz | 23.11.2026

Many works are based on the assumption of the impact of blood drops in a perpendicular straightforward direction. This model is applicable in our view when the traces of blood spots are on a wall. However, if there are drops of blood on the floor, we think that a linear impact model should not be used, because it ignores the force of gravity. This is also why we decided to use a different method of calculation. The calculations were based on the parabola and its trajectory with a specially modified formula. We will not state the results of this experiment, because of its inaccuracy with regard to the original model. Furthermore, the inaccuracy analogically increased with the distance. At a distance of 10meters, the deviation reached an inaccuracy of 100% from recorded measurements. At this time, this method of the linear model is commonly used around the world. Knock and Davison in their work (9) emphasize the effect of gravity on a blood drop. Their study was based on the variability of the results determining the angle of impact of drops. The work of Wells (16) indicates that the true origin of a drop of blood is dependent on several factors, including flight dynamics of drops of blood. On the other hand, there was no ideal pattern found, because variation is due to the dependence of drag force on droplet diameter and velocity, which is different for each droplet. Bloodstain patterns were evaluated by various techniques to investigate their size, speed and also their formation (7). In the one perfect experimental work by Behrooz et al. (4), which deals with the underlying mechanisms of blood disintegration and its subsequent effect on the area of origin calculations, it was stated that this was found to be very accurate with a maximum offset of only some mm.

In conclusion, we state that we are new to this field, but we have tried to find conclusions which would be as accurate using the method described above. The applied experiment was performed responsibly, and with the intencion of further application of this method in veterinary medicine with regard to shooting of animals. On the level of application we came across some problems. After multiple attempts using the method on different models we offer you reputable conclusions, and we recommend the use of this method during investigations and verification of individual acts in criminal and forensic practice.

ACKNOWLEDGMENT

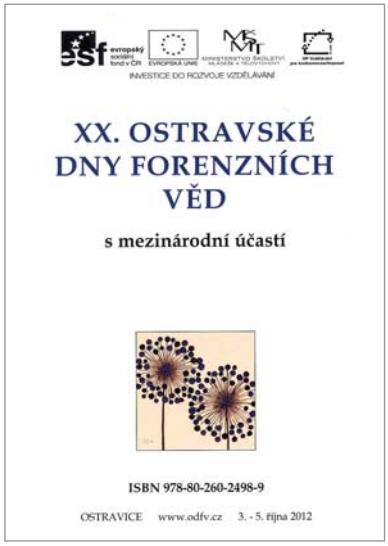
We thank Mrs. Kateřina Žáčková for editorial assistance with this manuscript.

LITERATURA

1. **Avim.**
2. **Baird JB.** "The individuality of blood and bloodstains". *Can Soc Forensic J* 1978; 11: 83.
3. **Balthazard V, Piedelievre R, Desoille H, DeRobert L.** Study of projected drops of blood. *Ann Med Leg Criminol Police Sci Toxicol* 1939; 19:265–323.
4. **Behrooz N, Hulse-Smith L, Chandra S.** An evaluation of the underlying mechanisms of bllodstain pattern analysis error. *J Forensic Sci* 2011; 56: 1136–1142.
5. **Benecke M, Barksdale L.** Distinction of bloodstain patterns from fly artefacts. *Forensic Sci Inter* 2003; 137: 152–159.
6. **Brinkmann B.** Expert opinion on biologic stains. Determination of status, future trends. *Z Rechtsmed* 1988; 100: 39–54.
7. **Carter AL.** The directional analysis of bloodstain patterns, theory and experimental validation. *J Can Soc Forensic Sci* 2001; 34: 173–89.
8. **Hulse-Smith L, Illes M.** A blind trial evaluation of a crime scene methodology for deducing impact velocity and droplet size from circular bloodstains. *J Forensic Sci* 2007; 52: 65–9.
9. **Knock C, Davison M.** Predicting the position of the source of bloodstain for angled impact. *J Forensic Sci* 2007; 52: 1044–1049.
10. **Liesegang J.** Bloodstain pattern analysis – blood source location *J Can Soc Forensic Sci* 2004; 37: 215–222.
11. **Molina DK, DiMaio VJ.** Trends in firearm usage in homicides and suicides in Bexar country Texas from 1982 to 2004. *Am J Forensic Med Pathol* 2008; 29:281–284.
12. **Parkinson GA.** Stringing a crime scene to determine trajectories. *J Forensic Indent* 2003; 53: 435–443.
13. **Rizer C.** Blood drop patterns. *Police* 1960; 4: 18–19.
14. **Rose D, Ekleberry T, Wilgus G.** Introduction to the trigometric shooting reconstruction method. *J Forensic Ident* 2004; 54: 637–644.
15. **Rowe WF.** Errors in the determination of the point of origin of bloodstains. *Forensic Sci Inter* 2006; 161: 47–51.
16. **Wells KJ.** Investigation of factors affecting the region of origin estimate in bloodstain pattern analysis. Thesis: University of Canterbury; 2006: 185.

ZPRÁVY Z KONFERENCE

XX. Ostravské dny forenzních věd



Ve dnech 3. – 5. 10. 2012 se v Ostravici ve velmi pěkném a nově zrekonstruovaném areálu Sepetná konaly již dvacáté a tedy jubilejní Ostravské dny forenzních věd s mezinárodní účastí pořádané Ústavem soudního lékařství FN Ostrava a LF Ostravské univerzity. Hlavní odbornou náplní konference bylo přednesení tří desítek příspěvků z různých forenzních oborů, které byly vhodně doplněny neméně zajímavými kazuistikami z řad orgánů činných v trestním řízení. Většina přednášek účastníky velmi zaujala a byla následně hojně diskutována. Organizátorům se podařilo zajistit kromě odborné části i společenskou stránku sjezdu na vysoké úrovni, a to včetně tematicky laděného zahajovacího večera, na kterém byli přivítáni účastníci a členové výboru Společnosti soudního lékařství a soudní toxikologie ČLS JEP, který zde měl své již pravidelné zasedání. V neposlední řadě všem přálo i počasí, jak ostatně zkonstatoval i prof. Fryc během svého závěrečného slova. Všichni přítomní byli na místě pozváni na další již XXI. ročník, který se bude na stejném místě konat 9.–11.10.2013.

MUDr. Bc. Tomáš Vojtíšek, Ph.D.
MUDr. Margita Smatanová, Ph.D.