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"...Every contact leaves a trace...", Locard 1920

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The adjective “forensic” placed next to a word indicating any branch of Science means apply scientific methods and techniques to the investigation of crime. Therefore, a variety of forensic specialists exist: anthropologists, biologists, entomologists, geologists and many others. In particular geologists are involved in investigations for everything related to Geosciences. Geosciences in Forensics have a relatively long but not well known history especially if we think to newborn areas of research such as Forensic Paleontology (*sensu* Sacchi & Nicosia, 2013).

The interest is focused on Paleoichnology (branch of Paleontology developed essentially to study fossil footprints) in Forensics because gives well consolidated techniques to detect, recovery and analyze footwear impressions trackways (at least a sequence of three consecutive footprints). According to Locard’s Exchange Principle people involved in a crime could leave footwear impressions *en route* to, at, and exiting from the crime scene (Bodziak, 2000). The Principle, summarized in “every contact leaves a trace” and inferred from Edmond Locard’s perception that it is impossible for a criminal to act, especially considering the intensity of a crime, without leaving traces of his presence. This concept has to be kept in mind during every crime scene investigation; even more from an ichnological point of view because of footwear impressions evanescence. The right approach to inspect the place where the crime occurred should be with the expectation and awareness that it always could contain traces.

All the previous researches were focused on the analysis of a single footprint (Forensic Podology) and most striking, without a real ichnological approach. The detection of a trackway on a crime scene expects the use of the same tools and analysis methods to those used for fossil trackways. Precisely for this, I want to prove that footwear impressions and trackways, analyzed with paleoichnological methodologies, can give distinctive information such as the locomotion type that is necessarily related to the trackmaker’s deambulation. Indeed, the attempt to extrapolate characters from trackways has been done based on the rationale that many characters of human locomotion derive from biomechanical constraints which are strongly related to the physical structure. The results suggest a very high possibility to discriminate the males from the females by their trackways as well a high possibility to recognize the trackways imprinted by the same individual.

Bodziak W.J. 2000. Footwear Impression Evidence: Detection, Recovery and Examination, 2nd Edition. CRC Press, Boca Raton, Florida.

Sacchi E. & Nicosia U. 2013. Forensic Paleontology: A Tool for “Intelligence” and Investigation. Journal of Forensic Sciences, 58, 651-657.