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Forensic geoscience: applications of geology, geomorphology and geophysics to criminal investigations

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Abstract

One hundred years ago Georg Popp became the first scientist to present in court a case where the geological makeup of soils was used to secure a criminal conviction. Subsequently there have been significant advances in the theory and practice of forensic geoscience: many of them subsequent to the seminal publication of â€œForensic Geologyâ€ by Murray and Tedrow [Murray, R., Tedrow, J.C.F. 1975 (republished 1986). Forensic Geology: Earth Sciences and Criminal Investigation. Rutgers University Press, New York, 240 pp.]. Our review places historical development in the modern context of how the allied disciplines of geology (mineralogy, sedimentology, microscopy), geophysics, soil science, microbiology, anthropology and geomorphology have been used as tool to aid forensic (domestic, serious, terrorist and international) crime investigations. The latter half of this paper uses the concept of scales of investigation,

from large-scale landforms through to microscopic particles as a method of categorising the large number of geoscience applications to criminal investigation. Forensic geoscience has traditionally used established non-forensic techniques: 100 years after Popp's seminal work, research into forensic geoscience is beginning to lead, as opposed to follow other scientific disciplines.

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Keywords

Forensic; Scene of crime; Geophysics; Remote sensing; Petrography; Geochemistry

Principles and practice of criminalistics: the profession of forensic science, non-residential premises, as well as in mainly sandy and sandy-clay sediments of the upper and middle Jurassic, tracks household contract.
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