THE JUDICIAL VIEW OF BITEMARKS WITHIN THE UNITED STATES CRIMINAL JUSTICE SYSTEM

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When examining most traditional sciences a thorough review of the relevant primary literature is usually sufficient to provide the investigator with a sound insight into the discipline. Forensic science differs in this regard, as it is presented in two main arenas: the peer-reviewed forensic journals and the Courts of Law where testimony is proffered. Because of this duality of scientific assessment the following legal review is presented. The review analysed Appellate Court rulings from the United States and identified trends of objections to bitemark testimony.

Nine major trends were identified within the cases assessed: bitemark evidence not sufficiently reliable or accepted, arguments regarding the uniqueness of the human dentition, constitutional arguments, inflammatory photographs, inaccuracy of techniques and errors in protocol, use of historical bitemarks and previous biting behavior, funds for defence witnesses and objections pertaining to witness credibility.

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GOOD BITE MARK EVIDENCE: A CASE REPORT

H. James

Bite mark analysis is unquestionably the most difficult, and contentious, work undertaken by forensic odontologists. Each injury must be assessed to determine if it was made by human or animal teeth, if the quality of the evidence allows presentation to a Court of Law, and if the pattern can be reasonably compared to a suspect dentition. Many injuries examined by forensic odontologists do not meet
these criteria. A case is presented in which a victim statement could be corroborated, with evidence of good probative value.

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**BITE MARK ANALYSIS AND COMPARISON USING IMAGE PERCEPTION TECHNOLOGY**

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To analyse and compare a bite mark left on human skin with a suspect’s dentition is a difficult procedure. The assumption that the human dentition is unique plays an important role in this process. However, it is near impossible to prove that a particular bite mark was produced by a specific dentition. Key elements to analyse a bite mark are the amount of detail available in the information about the bite mark and the suspected biter’s dentition. Both are of vital importance to the investigating forensic odontologists. In this article a new method of analysing bite marks using image perception technology is described. With the technology it is possible to artificially colour areas with equal intensity values and depict a 2-D image as a pseudo-3-D surface object. The use of image perception technology may allow visualization of a degree of detail unavailable with any other method.

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**UNUSUAL FOREIGN METALLIC OBJECT (NAIL) IN THE DENTITION OF A SKULL FROM THE ANTHROPOLOGICAL COLLECTION OF RUDOLF VIRCHOW (BERLIN)**

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Foreign bodies in the dentition of present day patients are frequently diagnosed. They are more rare in mediaeval and anthropological specimens. Rudolf Virchow, the doyen of pathology in Germany formed a huge collection of anthropological specimens in the 19th century. Among these specimens one skull from Tiflis (Tbilisi, Georgia) found its way into the collection of Virchow in 1881. The skull is that of a prisoner of war who died in 1877 due to dysentery. The skull is remarkable in that a metallic nail was adapted around the second right maxillary molar. Both radiological and clinical findings indicate that the nail was adapted to the tooth while the individual was still alive. In particular, erosion of the cortical bone plate in the affected area and osseous healing between the first and second maxillary molar may be taken as proof of adaptation of the nail *in vivo*. The reasons why the nail was applied, however, are difficult to explain. The authors assume that the nail was applied not by the individual himself. Probably, the nail was adapted as an amulet to protect the individual from injury or death.
DENTAL RECORDS: A BELGIUM STUDY

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The aim of this study was to deduce the quality of the average dental record kept by Belgian dentists and to evaluate its potential use for forensic dental casework. The evaluated material originated from 598 Dutch speaking and 124 French speaking Belgian dentists who completed a questionnaire and returned it by mail or through the internet. The age of the participating dentists ranged from 22 to 72 years of age. The results of the inquiry were statistically analysed taking parameters such as language, gender, age, university and ZIP code into account. In general there was a tendency for the young dentists from the age category 22 to 34 years of age, especially those living in larger cities, to perform better on several of the questions asked such as completion of the dental record, storage of x-rays, working with digital x-rays and a digital dental record.

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