



# NEWSLETTER

INTERNATIONAL ORGANISATION FOR FORENSIC ODONTO-STOMATOLOGY

# No.3

December 2008

## Index

Editor's page _____	p2
President's Page _____	p3
FDI Annual World Dental Congress, Stockholm, Sweden _____	p4
IOFOS committee for quality assurance _____	p5
Spring Meeting with the Royal Society of Medicine _____	p6
Courses in Forensic Dentistry _____	p9
Nordic IOFOS course in dental Identification	
Mass Disaster Simulation: Dental Identification Exercised	
News from the Forensic Anthropology Research Centre _____	p11



## Editor's page



Dear Colleagues

This edition of the Newsletter concludes 2008 and I want to thank everyone who sent information and interesting cases this year, especially for this late News letter. I want to urge you to get all the dates for Forensic Dental courses that will take place in 2009 to me before the next news letter and also to send us some feed back on these meetings as soon as they are done. It is always interesting to read a short version of such a meeting and you are invited to read some feedback on the FDI Annual World Dental Congress that took place in Stockholm as well as the Spring Meeting with the Royal Society of Medicine that was held in May this year.

May all have a blessed Christmas season and return to the work desk refreshed and filled with new energy for 2009!

Best wishes to all

Sonja C. Boy

**Editor: IOFOS Newsletter**

## President's Page



Dear Colleagues

As 2008 draws to a close, I look back on a year which saw the realisation of our journal becoming fully electronic, a new international executive and a committee formed to co-ordinate the quality control of forensic dental procedures. All the above are positive events which will ultimately improve the running of our organisation.

Although there have been several mass disasters during the year none have needed a co-ordinated response from I.O.F.O.S. It is however pleasing to see how many of our colleagues are holding mass disaster workshops in preparation for such events should they occur. As I have stated in the past, we need well trained forensic odontologists who can assist in the identification of victims in all eventualities if we are to remain relevant in future DVI teams.

The second edition of our electronic journal will be placed on the web within the week. I encourage you all to support the journal by submitting articles to our editor Jules Kieser. The journal is dedicated to forensic dentistry, and allows researches to publish their work in an open journal which will be cited in Pub-med from this edition.

I wish all our members a happy holiday season.

**Herman Bernitz**

**President: IOFOS**

## FDI Annual World Dental Congress, Stockholm, Sweden

Professors Herman Bernitz and David Sweet were invited to share the forensic dental session at the FDI world dental congress which was held at the Stockholmsmassan, in Stockholm Sweden. The conference was attended by 12 000 delegates from around the globe. As president of IOFOS, Herman was invited to speak on the “Challenges of Globalisation on Forensic Dentistry” while David’s presentation was entitled, “From serial murders to mass disasters- the crucial role of dental evidence”. They were hosted by the Swedish forensic society who made sure that they and their wives were treated to true Swedish hospitality.

Bernitz focussed his address on the challenges faced by forensic dentists in a world in which globalisation has become a reality. People travelling across the globe on daily basis become victims of violent crime, terrorist attacks, human displacement, natural and man made disasters. This has forced colleagues in the profession to participate in joint operations exposing inadequacies which need urgent attention. For the most part, forensic dentists practise in isolation creating their own rules and regulations oblivious to the greater global community. Few international protocols exist for the many procedures practised by the profession. Possible solutions to the complex problems were offered. These included co-operation with colleagues around the globe while striving for the highest levels of quality control, standardisation, reliability, impartiality, reproducibility and ethical accountability. David Sweet focused his talk on traditional and contemporary forensic odontology methods and how they are used in everyday practice to solve crimes, exonerate the innocent and prosecute the guilty. Both talks were very well received.



*From left: David Sweet, Irena Davidson and Herman Bernitz*

## IOFOS committee for quality assurance

*By Tore Solheim*

**Recommendations for quality assurance** in the different fields of forensic odontology have been established by IOFOS. After a meeting in Lillehammer 2004 where a number of outstanding International forensic odontologists met, recommendations for the practice and reporting were designed and published on the IOFOS internet site: [www.iofos.eu](http://www.iofos.eu)

The recommendations result from certain compromises and might not always be so logic. It consists of steps taken not how it should be done. The latter would cause insurmountable different opinions and are thus left to the practitioner or eventually to national associations to decide. Even the steps were not agreed upon. Thus it had to be made a distinction between what was really necessary and which could be only good practice. Thus a distinction was made so that steps which one could agree upon was written in black while steps considered by some or many to be unnecessary was written in blue.

The intention was to continue the work and improve the recommendations. So far little has been made and at the IOFOS meeting in New Orleans it was decided to establish a committee to come up with suggestions for improvements or changes. After careful consideration, three well established practitioners were asked to form the committee and they accepted the offer. They are:

Stephen Knot, Australia	<a href="mailto:stephenknott@bigpond.com">stephenknott@bigpond.com</a>
Claus Grundmann, Germany	<a href="mailto:grundmann.claus@web.de">grundmann.claus@web.de</a>
James C Schneider, USA	<a href="mailto:bitedr@sbcglobal.net">bitedr@sbcglobal.net</a>

They will come up with suggestions which will be presented to the IOFOS executive and eventually approved at the next general assembly in Madeira in 2011.

You are strongly encouraged to visit the IOFOS website to review these recommendations and make up your own opinion about them. Please direct any comments or suggestion to the named members of the committee for consideration.

## Spring Meeting with Royal Society of Medicine

**By Paul Phillips,**

**Editor: BAFO newsletter**

A joint meeting with the clinical forensic and legal medicine section of the RSM was held on 10<sup>th</sup> May at the RSM's imposing premises at 1 Wimpole street in London. The theme for the conference was "*Forensic implications of the mouth and face*".

After a short welcome by Ian Wall, the section president, Jim Hardy began the meeting by explaining the role of the Forensic Odontologist. Jim covered this wide subject comprehensively and concisely in the short time allowed him.

He was followed by Geoff Craig who discussed the subject of bite mark individuality. He told how, during the celebrated case involving Leeds united football players, he had been challenged in court to state the number of males in Leeds who had similar patterns of rotations, fractures and displacements of their teeth as the accused. At the time this information was not available. As a result, in conjunction with Ronald Kouble, they had examined the natural dentitions of 200 adults and collected data for intercanine distances, and tooth rotations, displacements, overlaps, fractures and spacing and determined their frequency distributions. They compared the features identified in the accused's lower front teeth with the data obtained for the comparable parameters in the 'normal' population they had studied. They discovered that the biter's lower dentition was not repeated in this sample although individual features of the dentition occurred with variable exclusivity. Geoff concluded that bite mark individuality was important and was worthy of further study.

In the run up to the morning break Dr Felicity Nicholson talked about the risks of infection from bites. Dr Nicholson explained that 75% of bites seen in A&E were caused by dogs and 10-30% of these would be infected. Human bites were 9-50% likely to be infected in comparison with between 1% and 12% of all other wounds. The infection rate increased where wounds were deep, in puncture wounds and those involving fractures. Certain individuals were also more at risk such as diabetics and those suffering from liver dysfunction as in alcoholics. Complications could be serious and common ones were endocarditis, septicaemia and meningitis..

The mouths of dogs contained multiple bacteria such as tetanus and viruses and in the light of recent incidents rabies must now be considered. Humans frequently carried Tuberculosis and syphilis as well as the better know viruses for Hepatitis B and C and HIV. The risk of infection from HepB although found in saliva, was low but if blood was involved the risk of

infection was between 10-30%. Hep C was not found in saliva but the risk from blood in a bite was relatively low at 1.8%. Post exposure prophylaxis for suspected HIV infection should, ideally, be applied within an hour of the injury but can be administered up to two hours later if necessary.

Freddie Martin then discussed the problems of bite mark evidence in court. Having shown a variety of injuries inflicted by the assailants teeth he went on to describe the various ways that the evidence might be presented in court illustrating each technique with examples from his wide experience.

Freddie was followed by Ron Foden who described the case of a police officer who claimed that an assailant had bitten his forearm through his jacket and shirt. Ron came late to the case as a defence adviser but was surprised that the photographs showed a superficial impression of two arches on the forearm of the officer. Impressions and overlays demonstrated that the accused could not have made the marks. Ron compared two photographs of the bite mark taken two days apart and realised that in relation to a mole on the officer's arm the bite marks were in different places on each photograph but the police officer refused to have impressions taken. A full face photograph of the officer showed a midline diastema which was also present in the bite mark. In court the judge, when he learnt that the officer had not submitted himself to impressions, severely criticized the officer and his superiors for their lack of cooperation and dismissed the case. Surprisingly no one pursued the officer for attempting to pervert the course of justice.

John Clement, visiting from Australia, suggested that bite mark analysis was a misnomer. He was concerned on several levels. Firstly he felt that there was an emotional and cohesive pressure on the Odontologist when shown a bite mark. John thought that there were many factors that influence the nature of the bite mark and variability and the difficulty of establishing if all the marks had been inflicted at one time created problems. He went on to illustrate the problem by reference to the Carrol case in Queensland where the conviction was overturned due to the inconsistencies in the dental evidence. Although all of the dentists involved agreed the accused was guilty the dental evidence was regarded as unsafe since their opinions and interpretation of the evidence were different. John also mentioned the Krone case in Arizona where the man accused of rape was convicted by dental evidence only to be released after serving ten years in prison when DNA evidence pointed to a different person. He went on to point out that bite marks are three dimensional but analysed from two dimensional evidence. He was concerned that the increasing use of computers in bite mark analysis gave a spurious scientific view of something that is essentially subjective.

In John's department in Melbourne they had been working on simulated bites and photographing them in both two and three dimensions. All were within the 4.4mm mean but the three dimensional images were all more accurate. Arising from this work they found that depending on the level of detail selected bite marks are not unique and that several different dentitions could be matched to a bite mark in skin. In conclusion John thought that although the value of bite mark evidence should not be disregarded the evidential weight that was assigned to bite marks was sometimes inappropriately high.

Following what was certainly the most imaginative lunch I can remember enjoying at a conference, though admittedly not to everyone's taste, the afternoon began with Graham Ritchie discussing age estimation. This talk was covered in the last edition of the newsletter. Dr Deborah Hodes a Community Paediatric consultant then talked about child protection issues affecting the face and mouth. Dr Hodes explained that 1 in every 11 children in the UK was subjected to physical abuse and abused children represented 1% of all A&E attendances with the highest risk amongst those children under twelve months old. The signs of abuse might be various but, for instance, a history of A&E attendances or repetitive injury may raise suspicion. Other common causes of suspicion were unexplainable accidents or unlikely circumstances and, sadly, poverty was also a factor in suggesting abuse in children. A systematic review of papers by a team from Wales described patterns of bruising by position and by frequency that might indicate abuse. Some injuries, for instance were rarely accidental but common in cases of abuse and Dr Hodes suggested that in non mobile infants bruises in clusters or away from bony prominences would arouse suspicion. 49% of cases of abuse showed oro-facial injuries and 8% have intra-oral injuries. Intra-oral injuries include bruises to the lips and mucosa and dental and gingival trauma but Dr Hodes emphasised that a torn fraenum is not pathognomonic of child abuse. Finally she thought that dentists had little knowledge of Child Protection Guidelines and may, in any case have many reasons not to report suspicions such as fear of litigation or violence to the child or themselves. This was an interesting paper which perhaps confirmed the findings of Vanessa Lee reported in the last newsletter that Paediatricians had little understanding of dentists or their ability to contribute to various forensic issues. Dr Hodes bravely, but perhaps unwisely in this audience, articulated the discredited idea that child and adult bites could be distinguished by measuring the inter-canine distance, a suggestion that was gently and tactfully refuted by session Chairman Geoff Craig demonstrating masterly restraint.

Mr James Gallaghaer, a Consultant Oral and Maxillae Facial Surgeon from Northampton then spoke on Jaw and facial injuries a subject probably familiar, in theory at least, to half the audience. Of interest, however were the remarkable statistics he quoted. 40% of the injuries he saw were due to falls in the home and mostly involved children. However 11% of these

falls were due to alcohol abuse. Overall 90% of those victims over the age of 15 years had sustained their injuries due to abuse of alcohol.

John Robson followed by discussing the Teeth in Mass Disasters and gave a comprehensive tour of the role of forensic odontology in these situations illustrated by reference to the many disasters that he has attended. He concluded by appealing for better records and radiographs to be kept by general practitioners and hospitals. John was followed by Bill Shardlow who presented the successful identification using facial superimposition of a father and son killed in the Sri Lanka Tsunami. This case he presented at the Buxton Conference and it was more fully reported in the last edition of the newsletter.

Sadly, at the last minute, Cath Adams was unable to attend what had proved to be a thoroughly enjoyable and interesting day so hopefully she will present her enigmatically entitled paper "*The future is not an Inheritance, it is an opportunity and an obligation*" at a later date.

## **Courses in Forensic Dentistry - 2009**

### **Nordic IOFOS course in Identification by dental means**

***By Tore Solheim***

Every second or third year a one week IOFOS course in Identification by dental means is arranged in one of the Nordic countries, Finland, Denmark Iceland, Norway or Sweden. In **2009 the course will be arranged in Helsinki, Finland, August 17<sup>th</sup> to 23<sup>rd</sup>**. Teachers will be from all 5 the above countries. The course is in English and aimed at participants from all over the world. We have had participants from most continents but the majority from Europe. Many of our participants have later served as forensic odontologists in their countries and for us it was especially rewarding to see many of our previous participants in Thailand after the tsunami.

This is a one week course which is aimed at dental identification both in cases where the police already have a positive identification as well as where they have none. In these cases anthropological techniques such as assessment of age and sex will be performed. The course introduces the basic concepts by **short lectures** after which the participants will get a chance to **practice the techniques on a real material** such as jaws and records from old cases. All techniques will be introduced from basics, but experienced forensic odontologists

will also benefit from this course if they are not yet well acquainted with the Interpol technique.

In Nordic countries the identification technique is based on the principles laid down by **Interpol**. The technique of dental registration and comparison is also based on the guide by Interpol and the Interpol forms are used which differs from the American system. In addition the computer program recommended by Interpol, the so-called “**DVI System International**” will be presented and the participants will have opportunity to work with it. Experience from Thailand tsunami showed that this will be the preferred system used in international disasters where Interpol is involved. Interpol feels strongly that participants in international operations have knowledge and experience in both the practical aspects as well as the use of the computer program before being accepted to work in international disasters again. This decision follows after many problems arose in Thailand where many countries sent dentists with no experience in the “DVI System International”.

A detailed invitation will follow in the next Newsletter. I urge you to consider whether this course would be good for you or if you know about someone else who might benefit from the course. Information about the course can be obtained from Tore Solheim ([solheim@odont.uio.no](mailto:solheim@odont.uio.no)) or from the coordinator of the course in Helsinki, Dr. Helena Ranta ([helena.ranta@helsinki.fi](mailto:helena.ranta@helsinki.fi))

## **Mass Disaster Simulation: Dental Identification Exercised**

***By Vince Phillips***

In preparation for 2010 World Cup Soccer to be held in South Africa a Mass Disaster Simulation has been arranged for the end of January 2009. This exercise is in preparation for a disaster in which numerous victims need to be identified by means of Forensic Dentistry. This a one day course, mainly hands-on exercise, in which specimens will be used to demonstrate the techniques used by the dentists to identify human remains. Numerous dentists have attended this type of exercise in the past and the objective is to refresh the memories of those who participate and to hone their skills in anticipation of a possible future mass disaster.

Forensic Pathologists and District Surgeons are also welcome to attend as this course that will provide insight into Forensic Dentistry.

If you are interested in attending this course please send an e-mail to Professor Vince Phillips, Cellphone number (South Africa): 0827257845. E-mail: [vmphillips@uwc.ac.za](mailto:vmphillips@uwc.ac.za)

Date: 31<sup>st</sup> January (Saturday)  
Venue: Dental Faculty Tygerberg (D – Floor) Main Lecture Theatre  
Time: 08h30 to 17h00  
Cost: Free of charge

## News from the Forensic Anthropology Research Centre

*By Maryna Steyn*

### Forensic Anthropology Research Centre



**“We owe respect to the living. To the dead we owe only truth.” Voltaire (1694 – 1772)**

In 2008 a Forensic Anthropology Research Centre (FARC) was formed in the Faculty of Health Sciences, University of Pretoria. This centre will mainly be involved in research, but due to the nature of its activities aspects thereof will fall within the ambit of the Social Responsibility and Education Streams, since its activities have high relevance to the society in which we live. In particular, the FARC aims to help solve problems which resulted from our high crime rate, and in this context results in unacceptably high numbers of human remains that remain unidentified and are buried as paupers.

The Forensic Anthropology Research Centre will firstly aspire to produce research of international standard on all aspects regarding the recovery and study of human skeletal

remains. Current research problems that are being addressed include estimating sex, age and stature; describing population affinity; analysing traumatic changes to bone; evaluating the accuracy of photo-superimposition and facial reconstruction, as well as estimating the post-mortem interval. As part of the research effort, modern and forensic trauma skeletal collections were established to assist with research. The storage of forensic remains also ensures that remains are not destroyed, and that they will be available for collection by families should they be identified at a later stage. This has already happened with several investigations from the TRC (Truth and Reconciliation Commission), where some of the remains they managed to identify were preserved in the collection.

Secondly, FARC will provide professional anthropological and archaeological services (Community service). Members of FARC have analysed human remains of forensic origin for the SAPS for more than 10 years including excavation of remains, cleaning, analysis and sometimes testifying in court cases), and will continue to do so. They have also received a mandate from SAHRA (South African Heritage Resources Agency) and the SAPS to recover remains of archaeological origin, which have been reported to the SAPS as forensic cases. This ensures the preservation of heritage, as well as removing unnecessary casework from an already overloaded law enforcement structures, permitting available SAPS staff to focus on real cases. If sufficient funding can be obtained, a system can be developed to have teams of experts on call to assist with excavations of buried remains and to ensure scientific documentation of recovered remains. This could also provide senior postgraduate students with valuable training. Humanitarian work involving graves and human remains (investigating mass graves of victims of natural disasters, identification of victims of mass disasters and the repatriation of the remains of victims of Apartheid and the search for missing persons from both historical and more recent contexts) are also undertaken.

FARC will thirdly contribute to the education and training of the private and formal sectors, graduate students, and professionals in the fields of anthropology, archaeology and law enforcement. Several students have already graduated from this programme, and it is foreseen that more students will continue their studies on honours, masters and PhD level. A number of workshops, including a workshop on interpretation of skeletal trauma presented by Prof. S Symes from the US, are planned for 2009.

For more information, contact Prof M Steyn at the following address:  
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