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# TWO-PART WORKSHOP ON FORENSIC ODONTOLOGY

Date: 9th and 23rd October, 2021

## RESOURCE PERSONS:

- Dr. Muhammad Nasir Ahmed, Anthropologist & Assistant Professor in Yenepoya Medical College.
- Dr. Akhil Shetty, Oral Pathologist and Forensic Odontologist, Yenepoya University.
- Dr. Shrivya Saloni Mahaveeran, Pedodontist, Yenepoya University.

On 9th & 23rd October 2021, The Unit of Forensic Science, Kristu Jayanti College, organized a two-part workshop on Forensic Odontology. With more than 250 participants, the workshop was to enlighten participants about the structure of teeth, to estimate the age of a given set of teeth, and also to write a report on the same along with rugae analysis and lip print analysis.

Prof. Don Caeiro, Co-ordinator, Unit of Forensic Science, gave a prelude to the workshop where he explained what the workshop entailed, and that the workshop would have 6 sessions with a wide variety of topics.

## INAUGURAL SESSION:

The workshop was inaugurated by Dr. Muhammad Nasir Ahmed, a renowned forensic anthropologist with more than 10 years of experience in the practical aspect of anthropology. The presidential address during the inauguration was delivered by Fr. Augustine George, Principal, Kristu Jayanti College. The Chief Guest, Dr. Muhammad Nasir Ahmed, proceeded to explain by using a presentation, how the fields of Forensic Anthropology and Forensic Odontology were allied and why we need more experts in the same. He introduced to the participants the concept of using Forensic Science in humanitarian action using the knowledge and skills obtained from anthropology and odontology. He also enlightened the participants about why we need Forensic Anthropology and its importance in the court of law. He stated that “Forensic anthropologists focus on the origin, in terms of evolution and the origin of the specimen given to them.” He emphasized what forensic anthropologists do and the questions they try to answer when they find evidence. He further described the scope of Forensic Anthropology in India, and for students who were planning on making a career out of it, he explained ways in which to plan their career.

# FIRST PART OF THE ODONTOLOGY WORKSHOP

Date: 9th October, 2021



## SESSION 1: DENTITION AND DENTAL ANOMALIES - POINTS OF IDENTIFICATION OF A TOOTH

The first session was handled by Dr. Shrivya Saloni Mahaveeran. Dr. Shrivya began the session with a basic overview of 'Human Dentition and Its Forensic Significance' and emphasized how Forensic Odontology can help solve legal cases by providing valuable scientific backing. She spoke about how a detailed examination of dental evidence can be used for identification purposes as well. Dr. Shrivya further stated that dental identification is based on the principle of 'No two oral cavities are alike' and the structural and morphological features of teeth make them unique for each individual. She then went on to explain the sequence of eruption in both primary teeth and permanent teeth, and touched upon the points of identification, focusing on the maxillary central incisor, maxillary canine, and mandibular first molar. Towards the end, she briefed the participants about the common tooth anomalies seen and the specific features of each. She talked about how such anomalies can be used as unique identifying dental features.

## **SESSION 2: IDENTIFICATION OF DENTITION AND ARCHES and Radiographs (IOPA & OPG)**

The second session of the workshop was conducted by Dr. Shrivya Saloni Mahaveeran who continued with the workshop. She enlightened the students on the different types of dental arches and dentitions and practically demonstrated how to identify them. The workshop on dental identification was divided into two parts – Firstly the delegates were taught how to identify the arches and dentitions using casts. The students were actively engaged in exercises where they had to identify the dental arches and dentitions shown to us in the presentation and note them down. Secondly, the resource person showed the participants the dental identification using two types of radiographs – OPG (Orthopantomogram) and IOPA (Intraoral Periapical) radiograph along with the exercises on the identification of the same. Towards the end, Dr. Shrivya summarized the session by emphasizing the importance of radiography in Forensic Odontology concerning identification.

## **SESSION 3: AGE ESTIMATION OF A PERSON USING PRINCIPLES OF ODONTOLOGY**

The resource person for this session was Dr. Akhil S Shetty, Oral Pathologist and Forensic Odontologist. During this session, Dr. Akhil provided the delegates with a detailed explanation on how to estimate the age of a person using casts and radiographs. He further taught how to identify dental anomalies using casts and radiographs and along with the orientation of OPG (Orthopantomogram). The explanation was given along with real-life examples, performed as tasks for the participants of the workshop to give us a better insight into the application of the principles of odontology in authentic crime scenarios and their study.

The tasks conducted answered questions like the ones mentioned below:

- a) Was the individual a minor or a major?
- b) Is he/she above 18 years of age or below?
- c) Is it a maxillary or mandibular cast?
- d) Are there any dental anomalies? If yes, what are the anomalies? Etc.

Dr. Akhil also introduced the format of the reports of forensic odontologists. He also provided an assignment for the delegates to write a report in a case which he provided them.

# PART TWO OF THE ODONTOLOGY WORKSHOP

Date: 23rd October, 2021



## SESSION 4: RUGAE PATTERN - BRIEF INTRODUCTION ON TYPES OF RUGAE

The second part of the workshop on Forensic Odontology was held on 23rd October 2021. The resource person for the first session of this part was Dr. Akhil.S. Shetty, an oral pathologist and forensic odontologist started the session by defining the word “rugae pattern”, followed by its history. Students were intrigued to know that it dated long back to 1932. He had demonstrated the picture of the rugae pattern making it easily understandable for the students. In his explanation, he also mentioned what they are called otherwise along with their benefits or their role in the human body.

The resource person, thereafter, stated that the process of collecting the rugae pattern from an individual was divided into 3-4 steps. “These rugae pattern impressions that are collected are then analysed with the help of divider, cast, pencil and scale measurement”, stated Dr. Akhil. The resource person also explained the different classifications of these patterns with the help of images of the same. Before ending the session, he included an example of how the rugae patterns helped solve a case of a five-year-old.

## **SESSION 5: RUGAE PATTERN ANALYSIS AND REPORT WRITING**

The fifth scientific session of the two-part online workshop on Forensic Odontology was a demonstration session on analyzing rugae patterns and report writing in cases involving rugae patterns. The resource person for the session was Dr. Akhil S.Shetty, Oral Pathologist and Forensic Odontologist.

Following the briefing on palatal rugae and the methods to record and trace the rugae patterns in the previous session, Dr. Akhil explained the types of palatal rugae found in the maxillary arch based on their shape, unification, and direction. He discussed the occurrence of specific types of rugae patterns depending on the topography and sexes of individuals. The use of detailed images and practice questions helped the participants comprehend the concept.

The next part of the session focused on the aspect of report writing after analyzing the rugae patterns.

Dr. Akhil guided the participants on how to prepare reports following the analysis of rugae patterns. He elaborated on the importance of preparing an organized report to explain the findings after the analysis.

The participants were also provided with practice questions to polish their skills in preparing such reports.

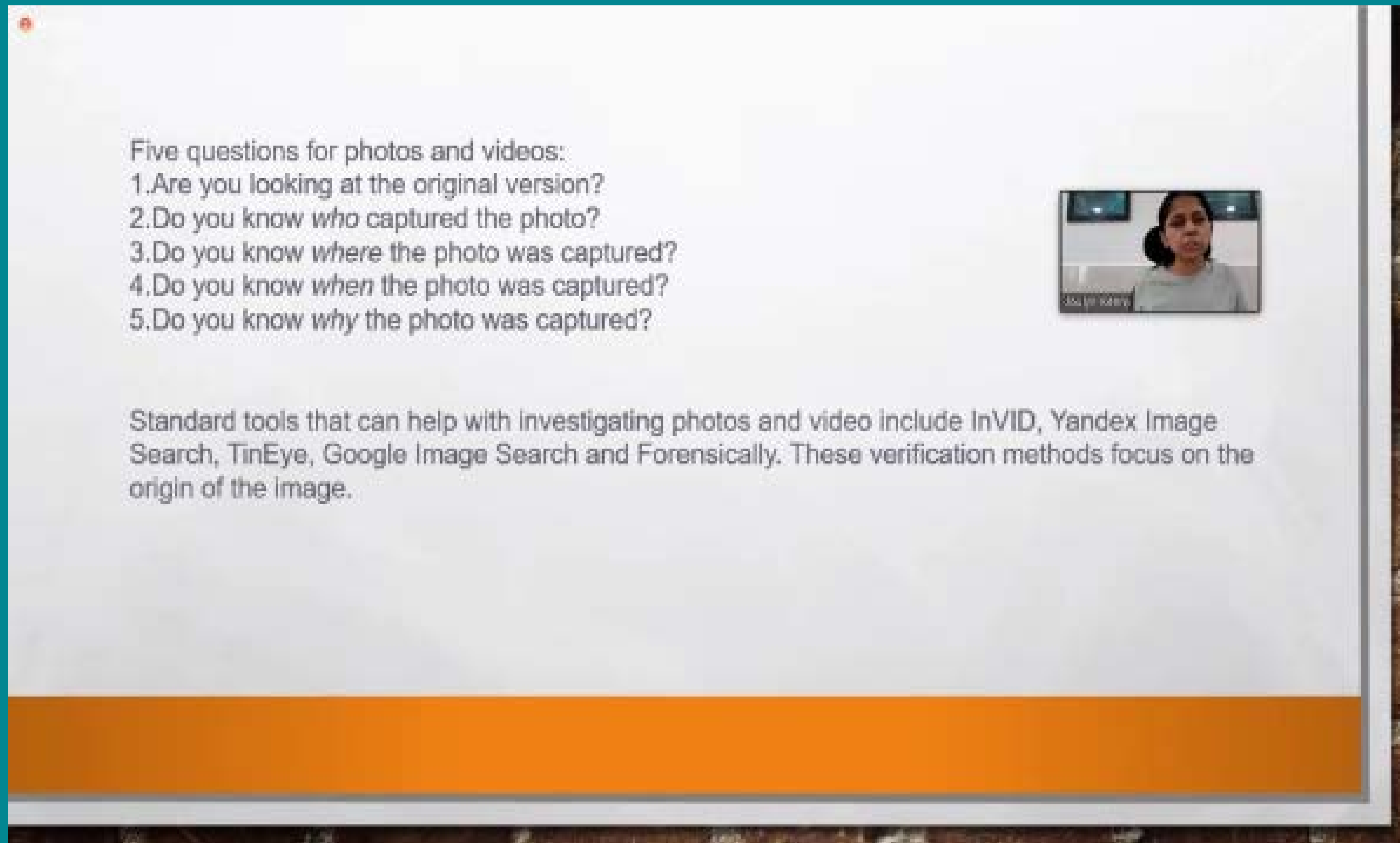
Towards the end of the session, Dr. Akhil briefed upon edentulous cast and dentures. He concluded the session by acknowledging the relevance of rugae pattern analysis in the domain of Forensic Science.

## **SESSION 6: LIP PRINTS - BRIEF INTRODUCTION OF LIP PRINTS, ANALYSIS AND REPORT WRITING**

The resource person for this session was Dr. Shrivya Saloni Mahaveeran Pedodontist, Yenepoya University, Mangalore, Karnataka. She introduced cheiloscopy, which is the study of lip prints and then proceeded with the history of cheiloscopy, how it is used and sources of lip prints in a crime scene. Topics such as identification features, topographic division, position, shape and measurements of length and width of lips were also covered. The participants thereafter learnt to classify and analyse lip prints and also the method used to collect and record the lip prints. She also touched upon the lip characteristics according to gender, ethnic race and also discussed the various studies done in the field. The session continued with the introduction on report writing and after which the participants were given exercises regarding the classification and identification of shapes. Towards the end of the session, Dr Shrivya talked about how cheiloscopy proved to be emerging as a promising field in forensic odontology and concluded by answering the queries of the participants.

# GUEST LECTURE ON “CAREERS IN FORENSIC SCIENCE (FORENSIC JOURNALISM)”

Dates: 11th November 2021



## Resource Person:

Ms. Joulyn Kenny, independent Forensic Consultant & HOD, UG Program, Communication Education, St. Paul's Institute of Communication Education, Mumbai.

A guest lecture on the topic “Careers in Forensic Science (Forensic Journalism)” was conducted on 11th November 2021 at 3 PM by Ms. Joulyn Kenny, who is an independent Forensic Consultant and also serves as a Head of the Department of the Communication Education programmes at St. Paul's Institute of Communication Education, Mumbai.

The resource person gave the students new knowledge about the use of forensics in the field of journalism. She also gave a detailed explanation on the following topics:

- Investigative Journalism
- How media evidence is essential for Forensic Journalism.
- How forensic can assist investigative reporters.
- How to know the authenticity of an image or video.
- Usage of new digital tools.
- Discussion on famous case studies related to the topic.

The entire session was innovative and encouraged the students to have a look at the career option of Forensic Science in the field of Journalism.

# FACULTY DEVELOPMENT PROGRAMME ON MiScope MP3

Date: 20th November 2021, 10 AM

*Venue: Forensic Science Laboratory, 3rd Floor, Main Block.*

*Participants: Faculty members of the Department of Life Sciences, Kristu Jayanti College, Bangalore.*

*Resource Persons: Mr. Suraj G (Director) and Mr. Senthil Kumar (Manager), Metronic Services, Bangalore.*

A Faculty Development Programme (FDP) on the MiScope MP3, a digital forensic microscope was organized for the faculty members of the Department of Life Sciences at Kristu Jayanti College, Bangalore, on 20th November 2021. The session was held offline at the Forensic Science Laboratory, 3rd floor, Main Block. The resource persons for the session were Mr. Suraj G (Director) and Mr. Senthil Kumar (Manager), Metronic Services, Bangalore, which was a knowledge partner for the FDP.

The objective of the FDP was to provide hands-on training on the use of the MiScope MP3, which is a new technology available in the field of Forensic Science.

The session started with a silent prayer, after which Prof. Jeremiah Justus M, a faculty member of the Unit of Forensic Science, welcomed the resource persons and the participants.

The resource people unboxed the MiScope MP3 instrument purchased for the Forensic Science Laboratory, Kristu Jayanti College, and went through the installation procedures with the participants. The MiScope MP3 is a Digital Forensic microscope that uses alternate light sources while magnifying images. It is highly useful in the field of Questioned Documents examination and is also suitable for studying biological specimens and physical evidence. It is a handy and portable device that can be very useful in field-work as well. The features, handling, and troubleshooting of the device were explained elaborately by the resource people. The participants were also given hands-on time to work and learn about the equipment in detail.

Prof. Chetna Tidke, faculty member, Unit of Forensic Science, concluded the session with a vote of thanks.



# GUEST LECTURE ON “CAREERS IN FORENSIC SCIENCE (FORENSIC EXAMINER IN USA)”

Date: 27th November 2021, 9 AM



## Resource Person:

Ms. Bincy Mariyam Thankachan, Forensic Examiner, Rapid City Police Department, South Dakota, USA.

A guest lecture on the topic “Careers in Forensic Science (Forensic Examiner in USA)” was conducted on 27th November 2021 at 9 AM by Ms. Bincy Thankachan, who is a forensic examiner working at the Rapid City Police Department in South Dakota, USA.

The resource person started her lecture by explaining her role as a Forensic Examiner in the Rapid Police Department in South Dakota, USA. Further, she went on to describe how her journey started in Forensic Science, and how she built her career on the same in the USA. She then highlighted the advantages and disadvantages of being a student in India and pursuing higher studies in the USA with specific relation to Forensic Science and her role. She elaborately explained the complete process of joining such programmes, how to apply for jobs, how to manage both the studies and jobs in a country like the USA by giving examples of different individuals. She also ensured to explain the various departments that are offering many working opportunities for students in the USA. She had attracted the whole gathering by explaining her efforts and hard work that made her reach the higher levels, and she also encouraged students to work hard and to perform well to build a great career in this field. At the end of the session, the resource person patiently addressed the questions that were raised by the students regarding the opportunities in the USA pertaining to Forensic Science.