

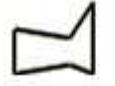
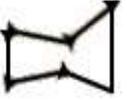
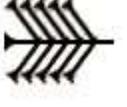
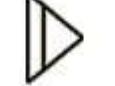
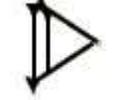
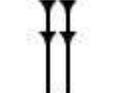
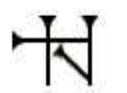
FORENSIC SCIENCE  
IV SEMESTER

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Compiled by -ANJALI GUPTA  
ASSISTANT PROFESSOR  
FORENSIC SCIENCE  
BTIE, SAGAR

# INTRODUCTION

- Started somewhere around 3200 B.C
- In Sumer (Sumerian) southern region of Babylonia
- Present day Iraq
- Earliest known civilization
- Sumerian scribes used to write on long, vertical tablets of wet clay, from top to bottom, right to left

|                  | 3200 BCE  | 3000 BCE  | 2400 BCE  | 1000 BCE  |
|------------------|---|---|---|---|
| sag<br>'head'    |    |    |    |    |
| gin<br>'to walk' |    |    |    |    |
| šu<br>'hand'     |    |    |    |    |
| še<br>'barley'   |    |    |    |    |
| ninda<br>'bread' |    |    |    |    |
| a<br>'water'     |  |  |  |  |
| ud<br>'day'      |  |  |  |  |
| mušen<br>'bird'  |  |  |  |  |

# Egyptians

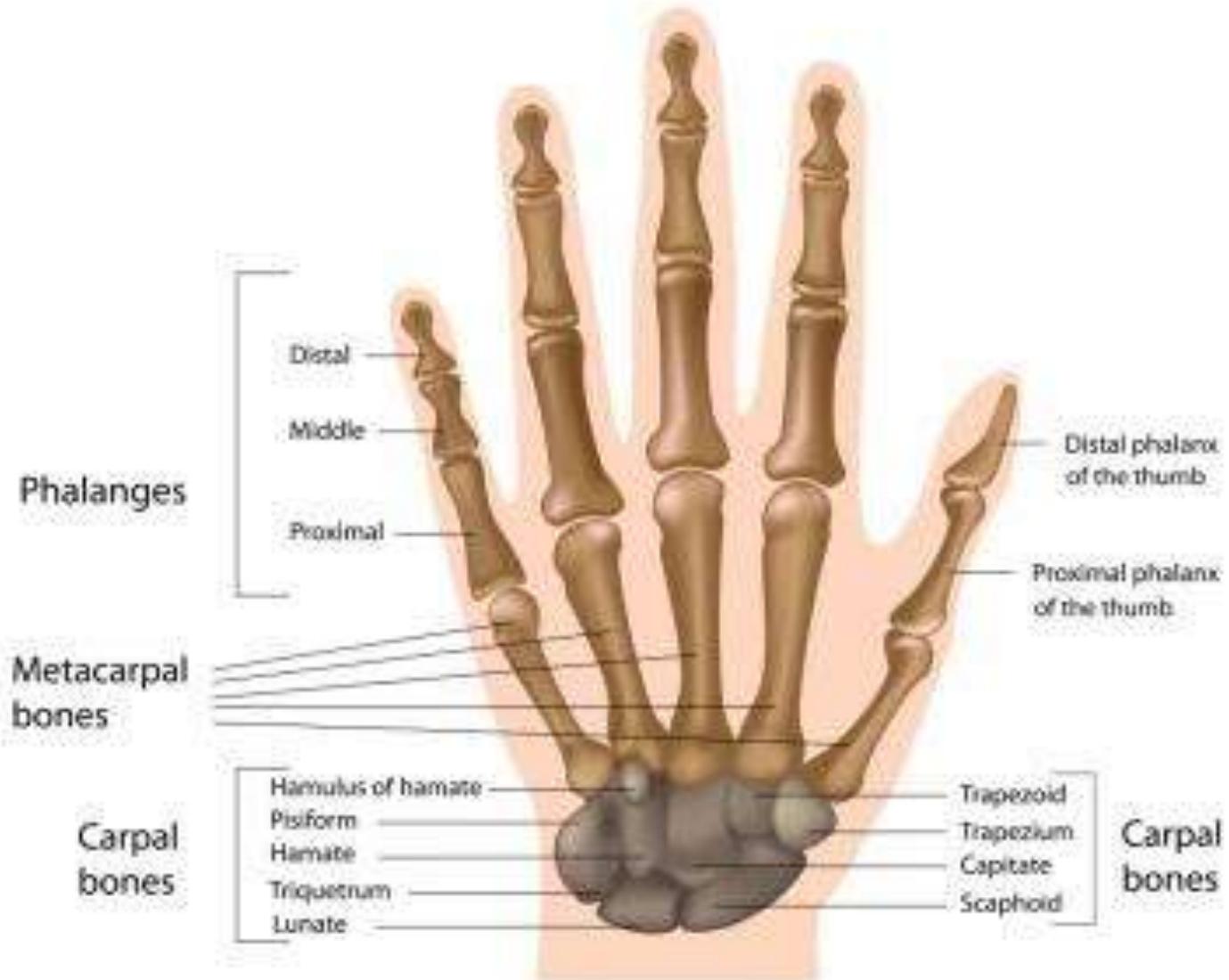
- In 2400 BC, the Egyptians started using papyrus writing



# Handwriting

- Its an acquired skill basically a neuromuscular task
- Hand contains around 27 bones and is controlled by around 40 muscles
- First true alphabet surfaced between the years 1730 to 1580 B.C.
- Two classes of writing evolved
  - Calligraphy ( beautiful writing)
  - tachygraphy ( method of writing rapidly)
- A lot happened during the roman empire (26 alphabets)

# Bones of human hand and wrist



# VARIATION IN GENUINE WRITING

- Genuine writing by the same writer does vary
- Arm, hand and fingers under the direction of the brain do not constitute an absolutely accurate reproducing machine, like an engraved plate or a printing press, and certain natural divergencies are inevitable.
- Writing varies as speech varies
- It becomes habit of the individual acquired by thousands of repetitions of the same act.
- Writing is practically visible speech, or the "talking paper,"
- A persons writing is never twice alike, meaning that its primary characteristics differ,

# CHARACTERISTIC FEATURES OF HANDWRITING

- Characteristic - "that which distinguishes or helps to distinguish,"
- Natural writing is the almost unconscious visible expression

## Movements in writing

- Finger movement
- Hand movement,
- Forearm movement
- Whole-arm movement and
- Their combinations.

- **Finger movement** is that method of writing in which the letters are made almost entirely by the action of the thumb and the first and second fingers.
- Writing is very slow
- Letter size is small, rhythm is absent or very poor.
- This movement employed by children and illiterates and generally by those with whom writing is an unfamiliar process.
- Finger movement writing shows lack of clearcut, smooth strokes and contains numerous broad curves.

- **Hand movement** writing is that produced with the wrist as a center of action, but with slight action of the fingers.
  - Writing is often very illegible although it may be very rapid.
  - Alignment of writing is very uneven and many words have an upward tendency.
- 
- **Forearm movement** comes from the shoulder with the elbow as the center of lateral motion.
  - Superior penmen write in this manner.
  - Forearm movement writing shows smooth, clear-cut, rapid strokes.
  - Forearm movement writing shows a uniform base line.

- **Whole-arm movement** in writing is the action of the entire arm without rest.
- Whole-arm movement is employed in very large writing, blackboard writing.

### Note

- A free uninterrupted stroke or motion makes a smooth, continuous curved or straight line while a change of direction, tremor, or unevenness in the intermediate part of what ordinarily is a single stroke indicates a hesitation or changing movement impulse.