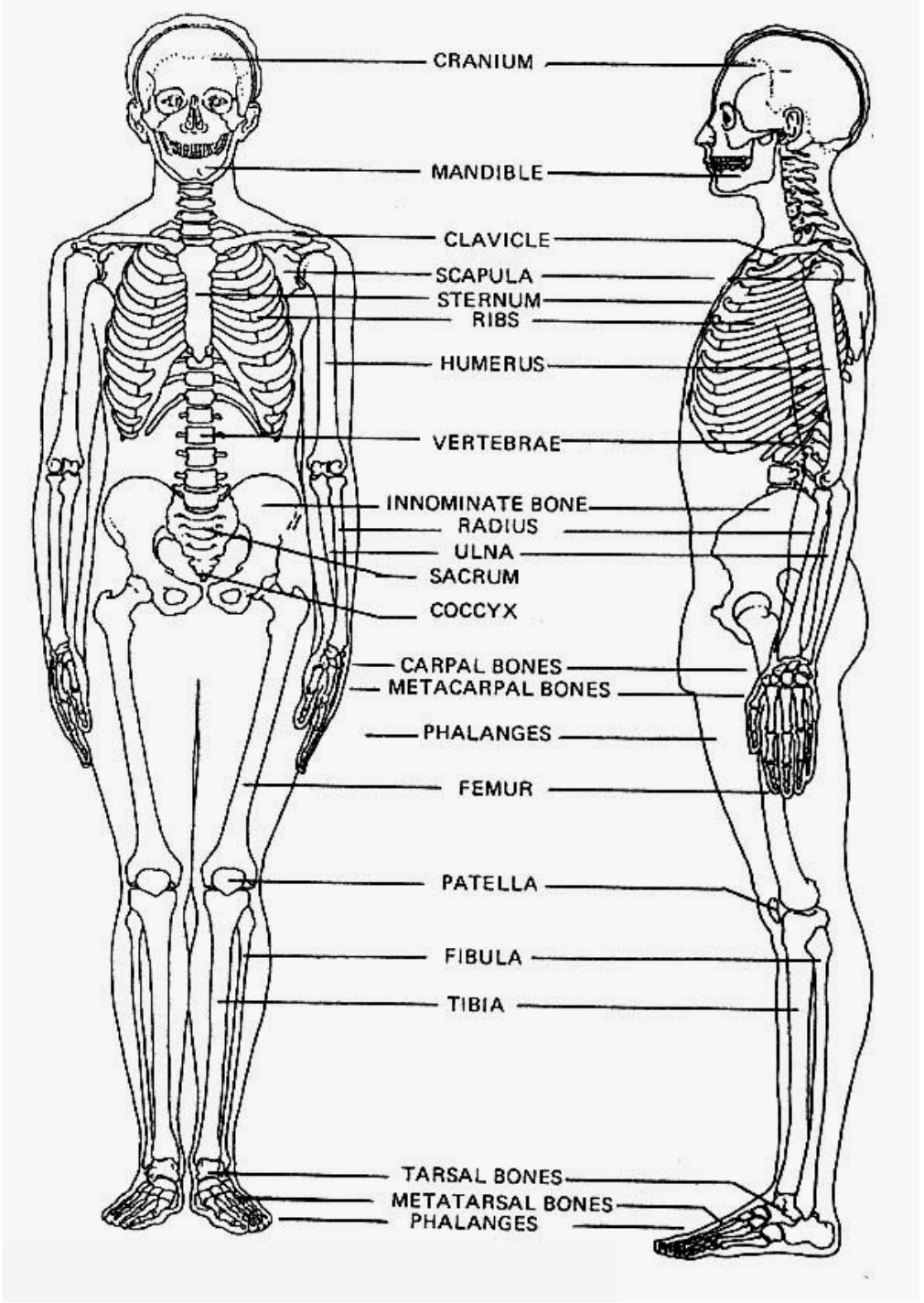
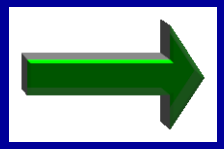
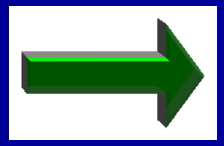

CRANIUM
MANDIBLE
CLAVICLE
SCAPULA
STERNUM
RIBS
HUMERUS
VERTEBRAE
INNOMINATE BONE
RADIUS
ULNA
SACRUM
COCCYX
CARPAL BONES
METACARPAL BONES
PHALANGES
FEMUR
PATELLA
FIBULA
TIBIA
TARSAL BONES
METATARSAL BONES
PHALANGES

# Why study bones ?

- *study of fossil man*
- *racial classification in prehistory*
- *biological comparison of prehistoric peoples with the present living descendents*
- *burial patterns*

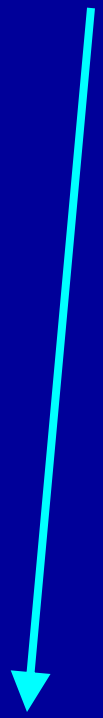


*ancient diseases*
*causes of death*



**forensic cases**

# Physical anthropology



***variation***

***evolution***

**Forensic anthropology**

*forensic pathologists*

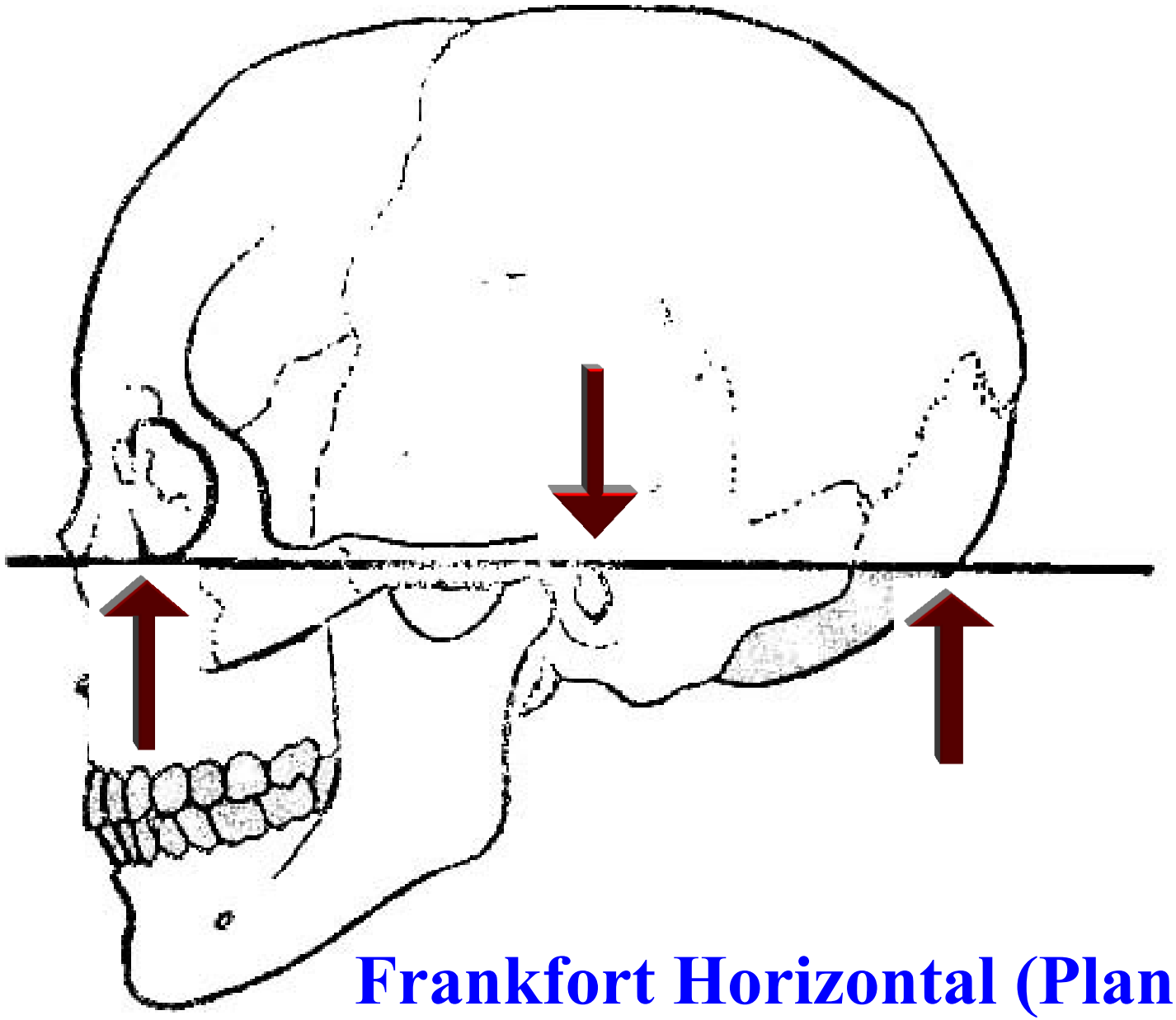
*forensic odontologists*

*homicide investigators*

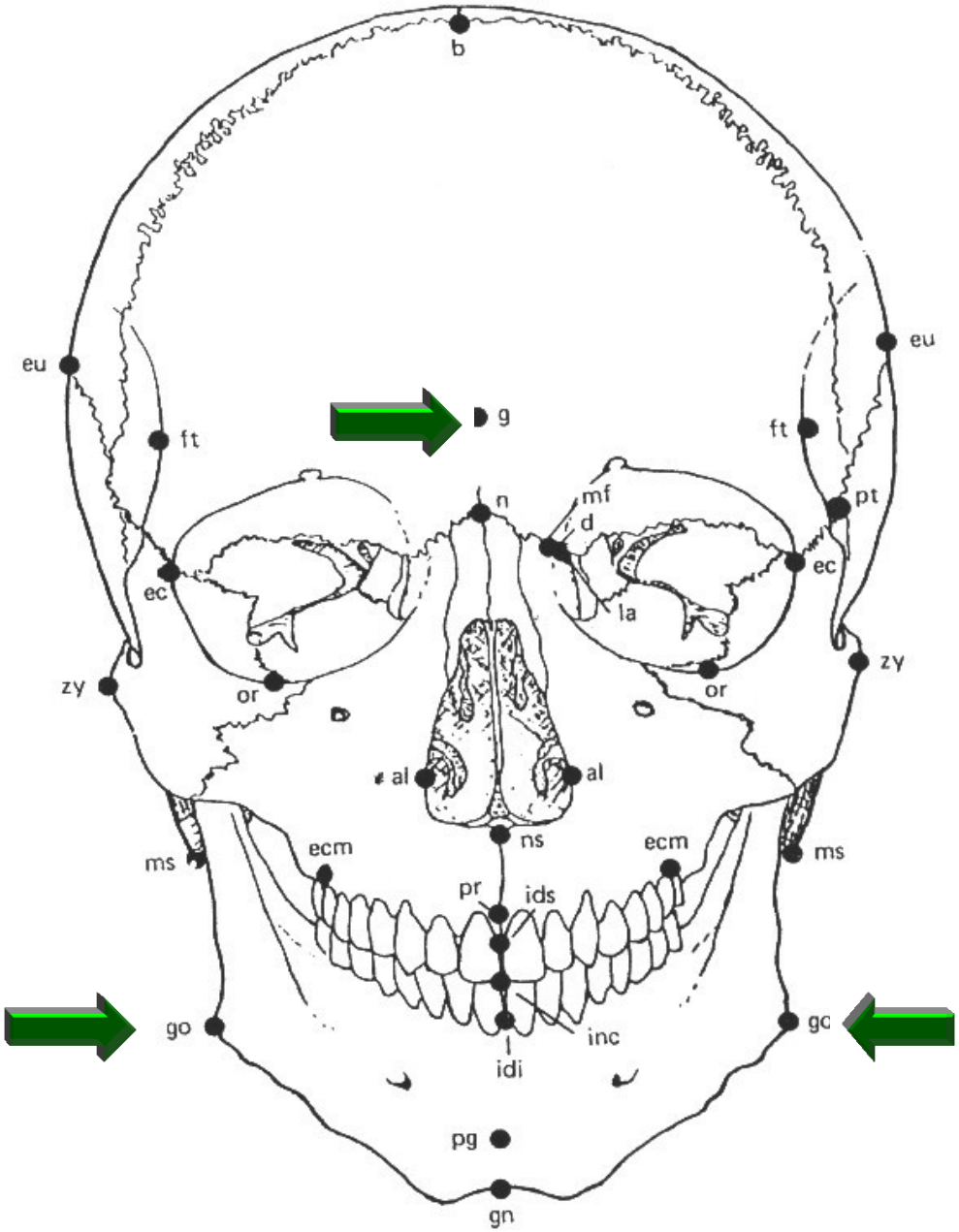
**positive identification**

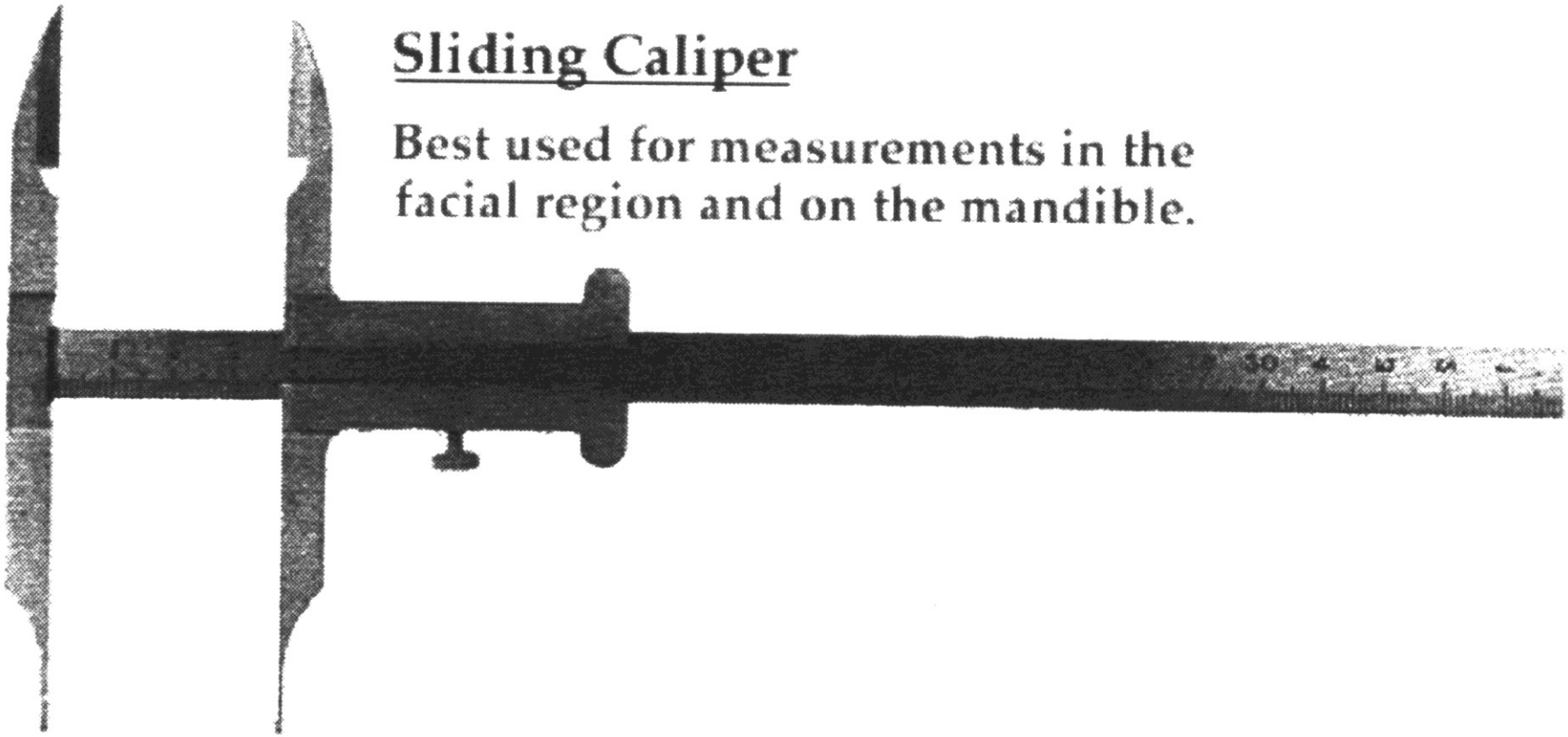
# Anthropometry

- ***Somatometry***
- ***Cephalometry***
- ***Osteometry***
- ***Craniometry***



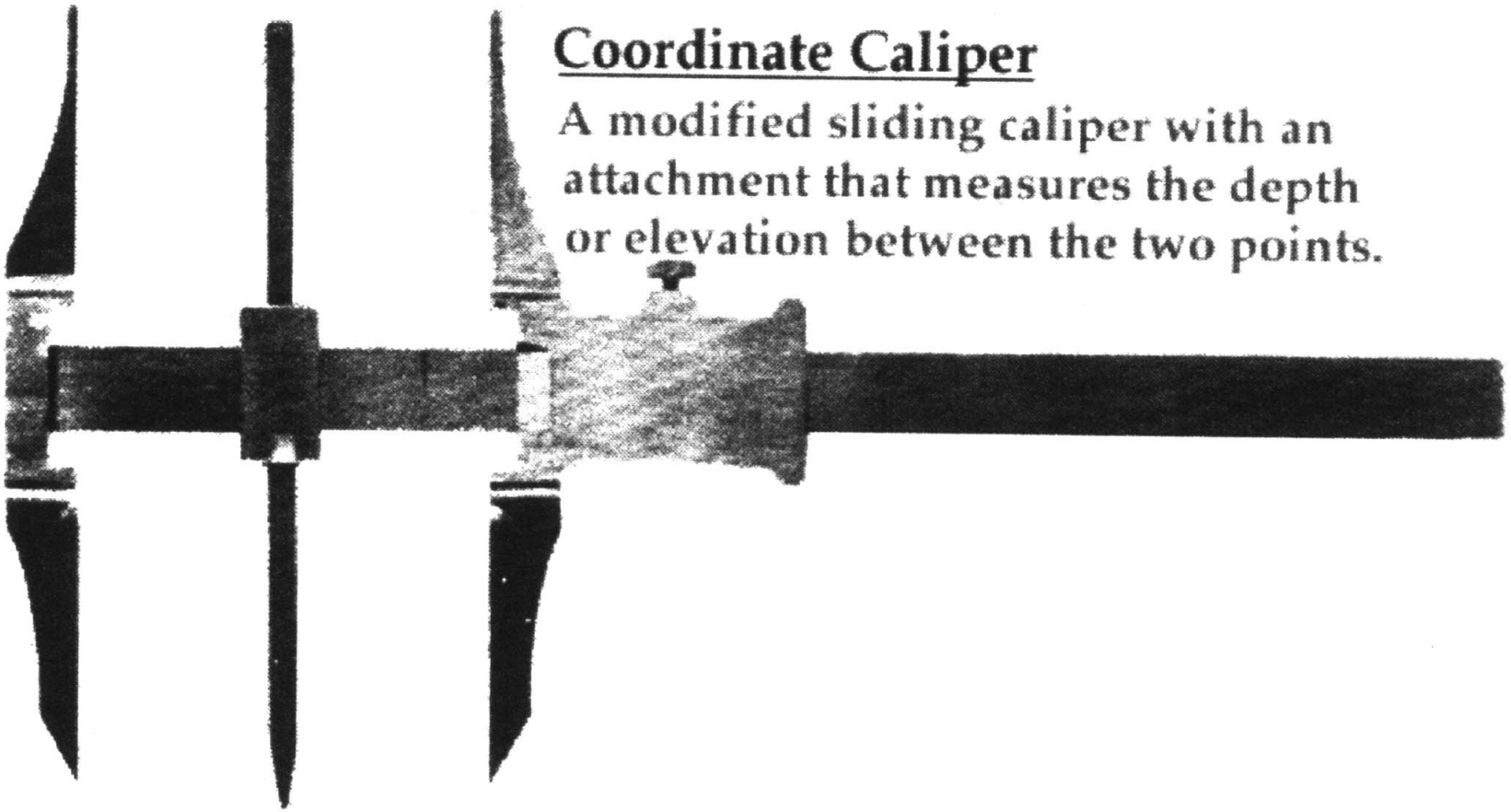
**Frankfort Horizontal (Plane)**


b
eu
eu
ft
ft
g
n
mf
d
pt
ec
ec
la
zy
zy
or
or
al
al
ns
ecm
ecm
ms
ms
pr
ids
go
gc
inc
idi
pg
gn



## Sliding Caliper

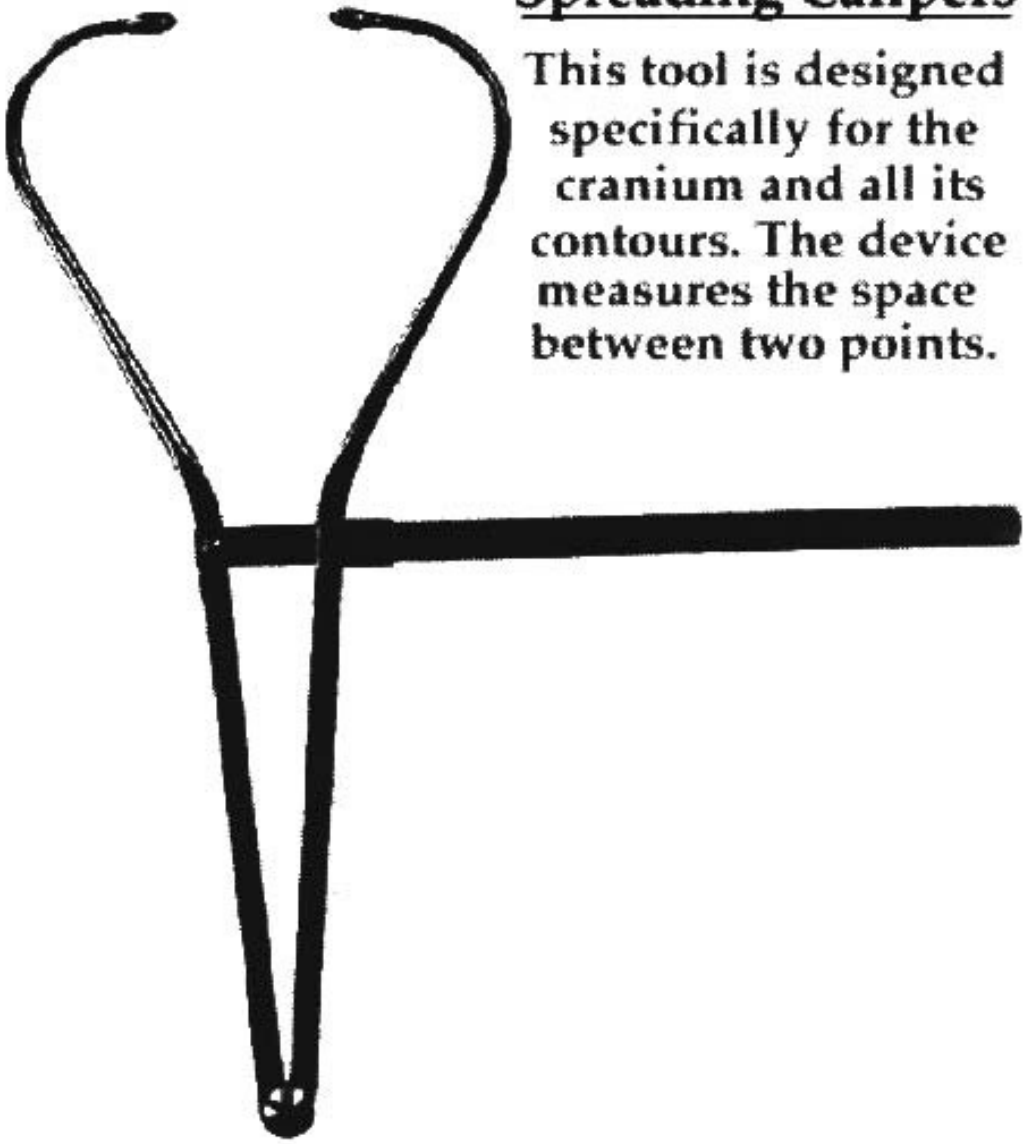
Best used for measurements in the facial region and on the mandible.



## Coordinate Caliper

A modified sliding caliper with an attachment that measures the depth or elevation between the two points.

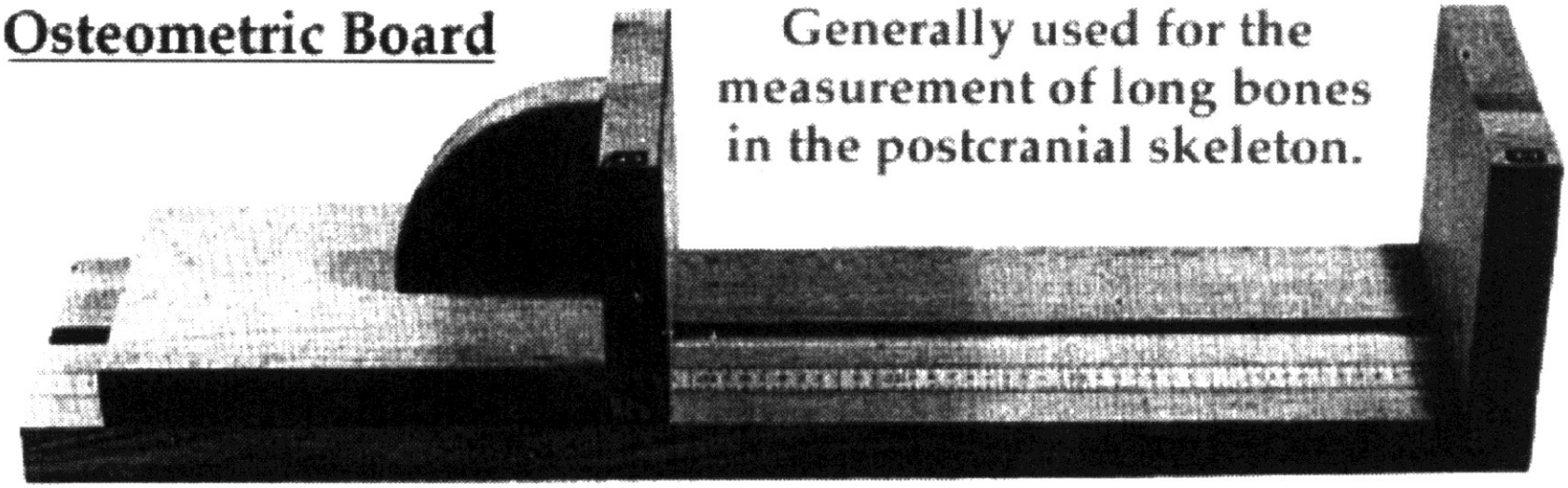
## Spreading Calipers



This tool is designed specifically for the cranium and all its contours. The device measures the space between two points.

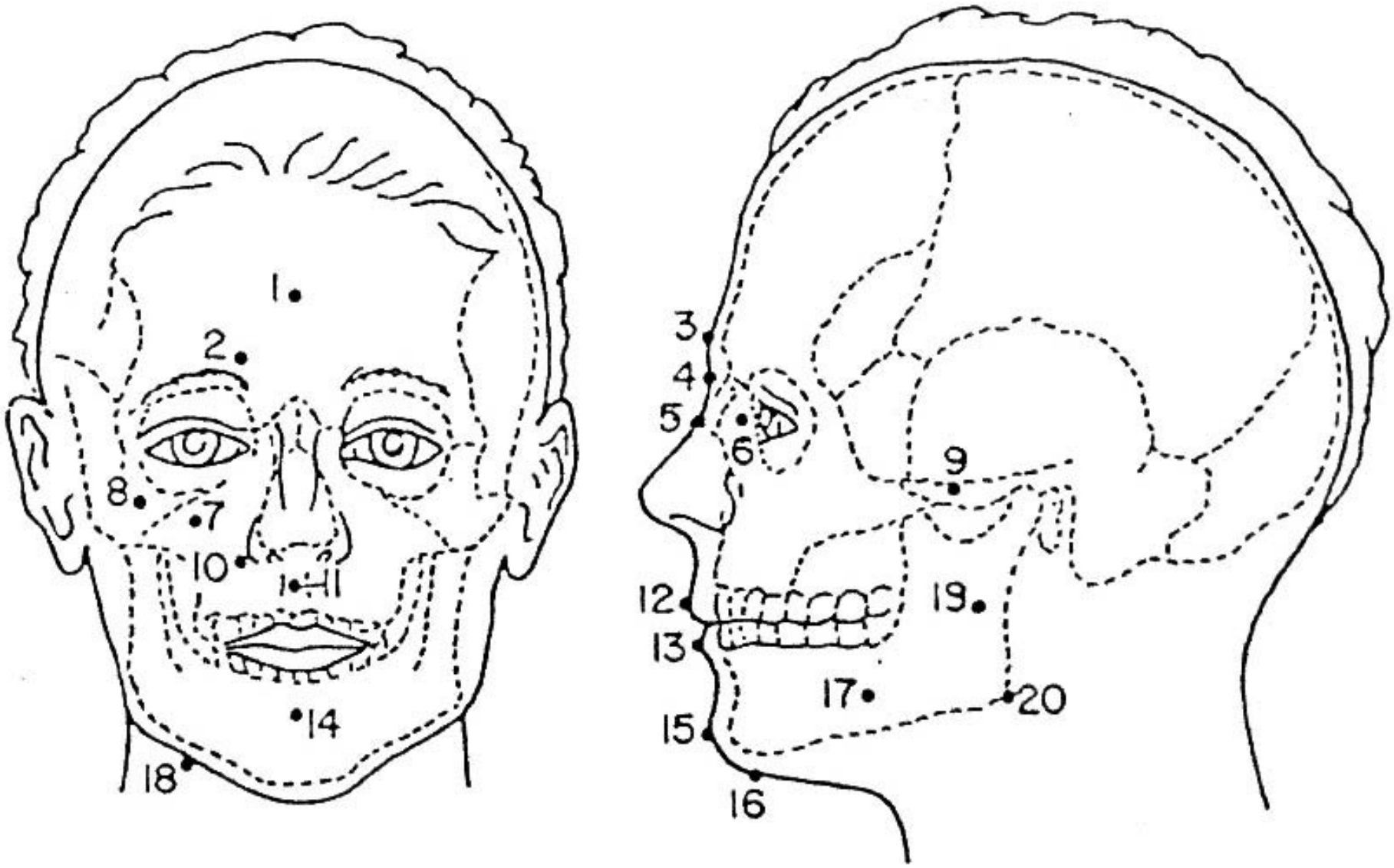
## Osteometric Board

Generally used for the measurement of long bones in the postcranial skeleton.



*X-rays*

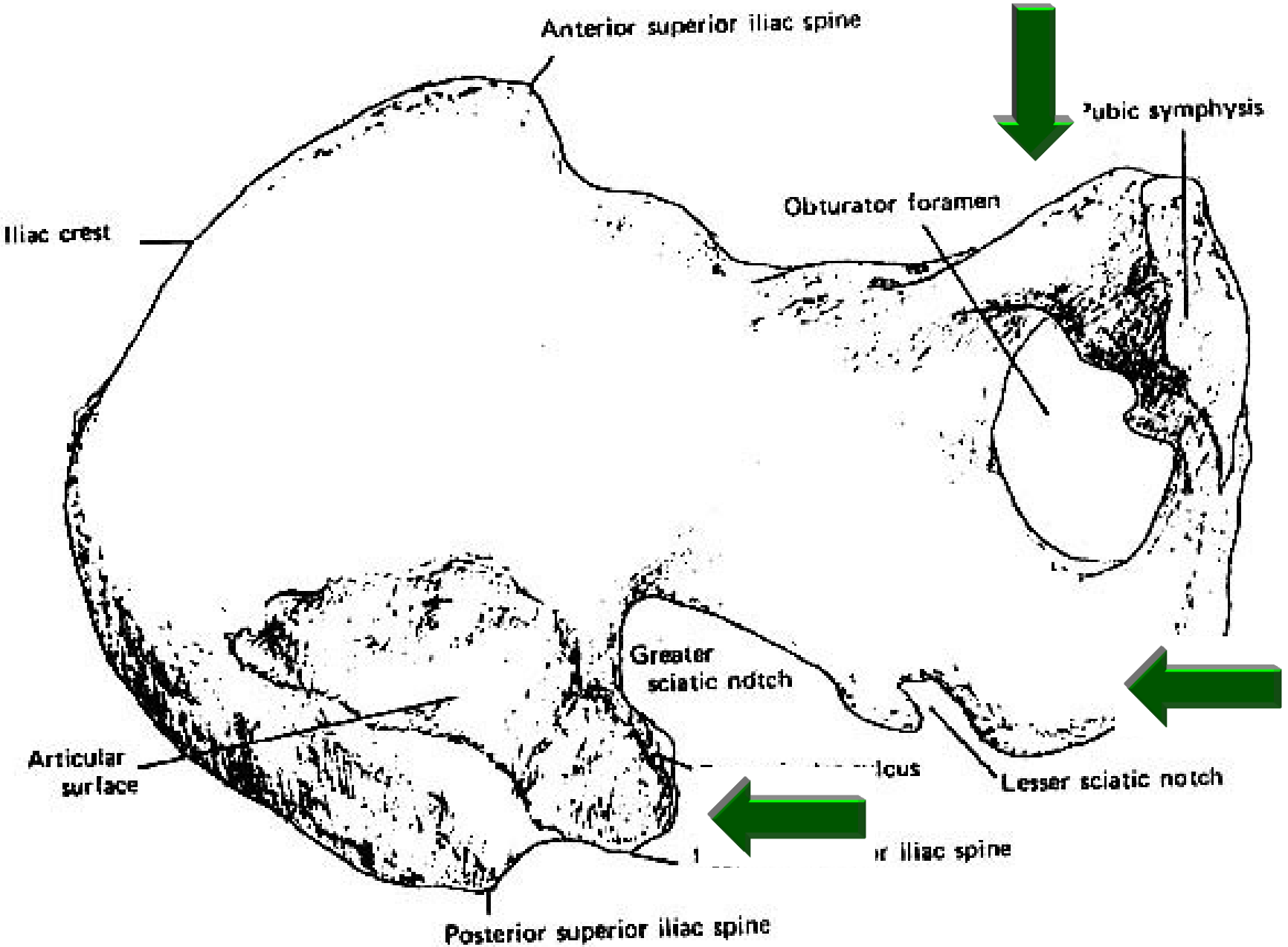
*Facial reconstruction*

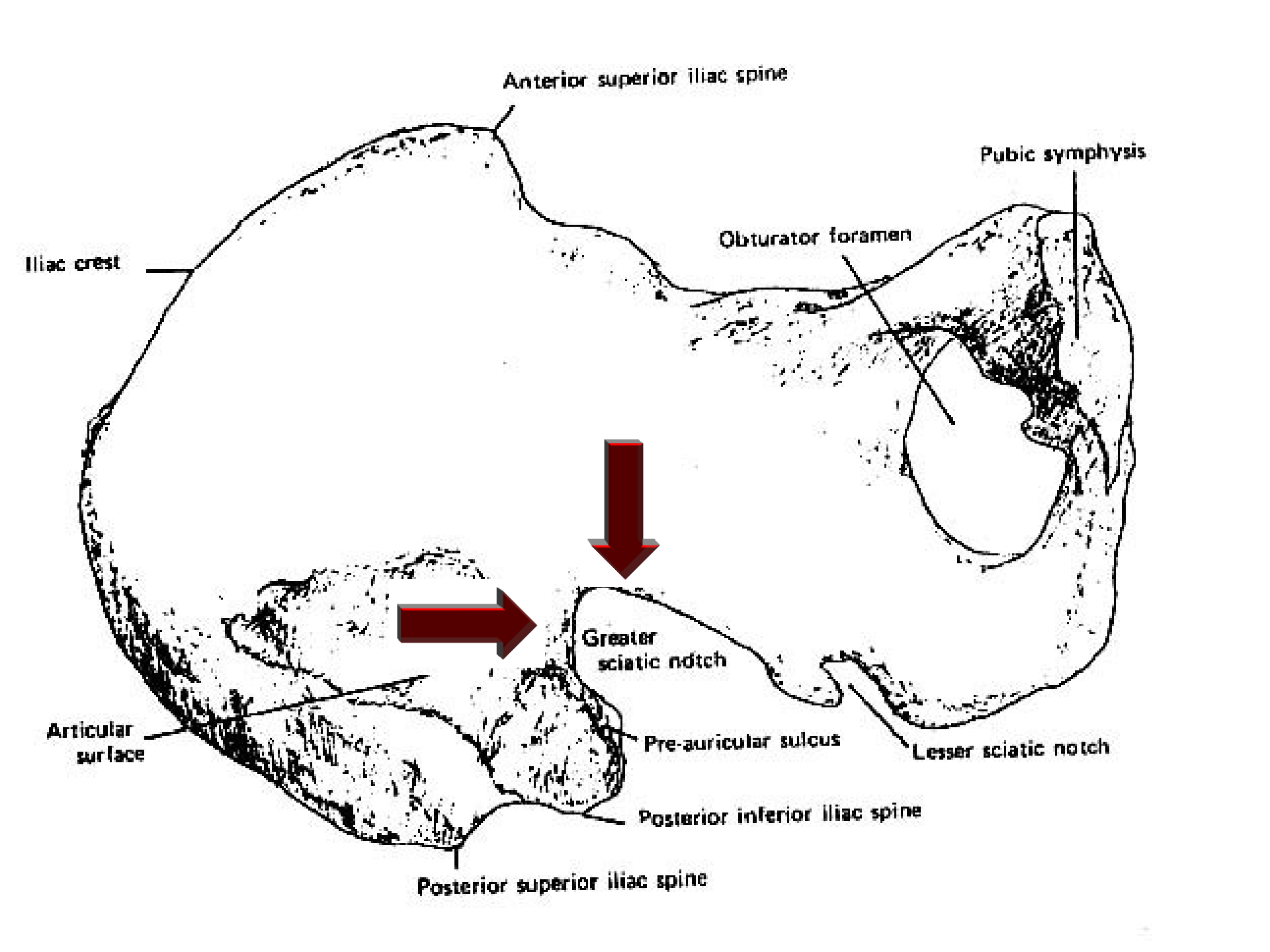

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20

*Superprojection*
*(superimposition)*

***Results of subprojection of the skull N 4 and two photographic portraits of Nikolai II***

# Determination of sex


Anterior superior iliac spine
Pubic symphysis
Obturator foramen
Iliac crest
Greater sciatic notch
Articular surface
Lesser sciatic notch
Posterior superior iliac spine


Anterior superior iliac spine
Pubic symphysis
Obturator foramen
Iliac crest
Greater sciatic notch
Articular surface
Pre-auricular sulcus
Lesser sciatic notch
Posterior inferior iliac spine
Posterior superior iliac spine

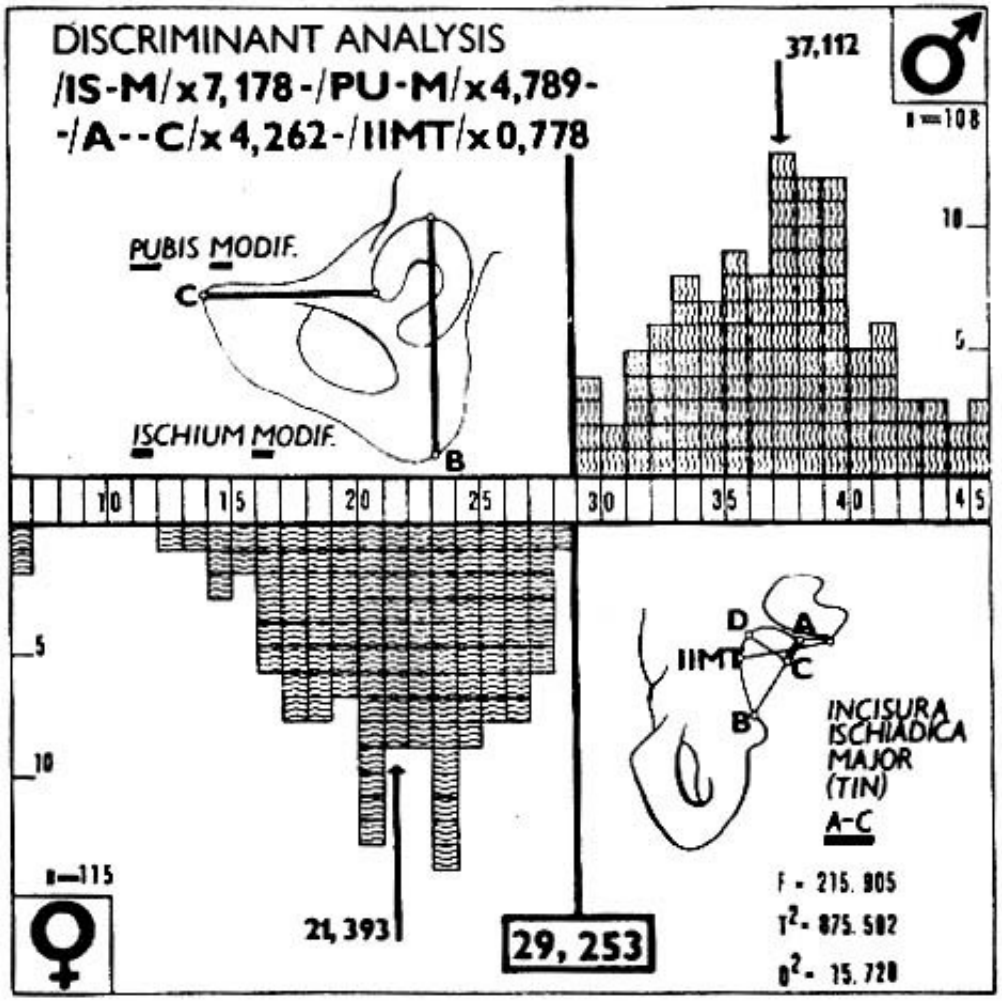
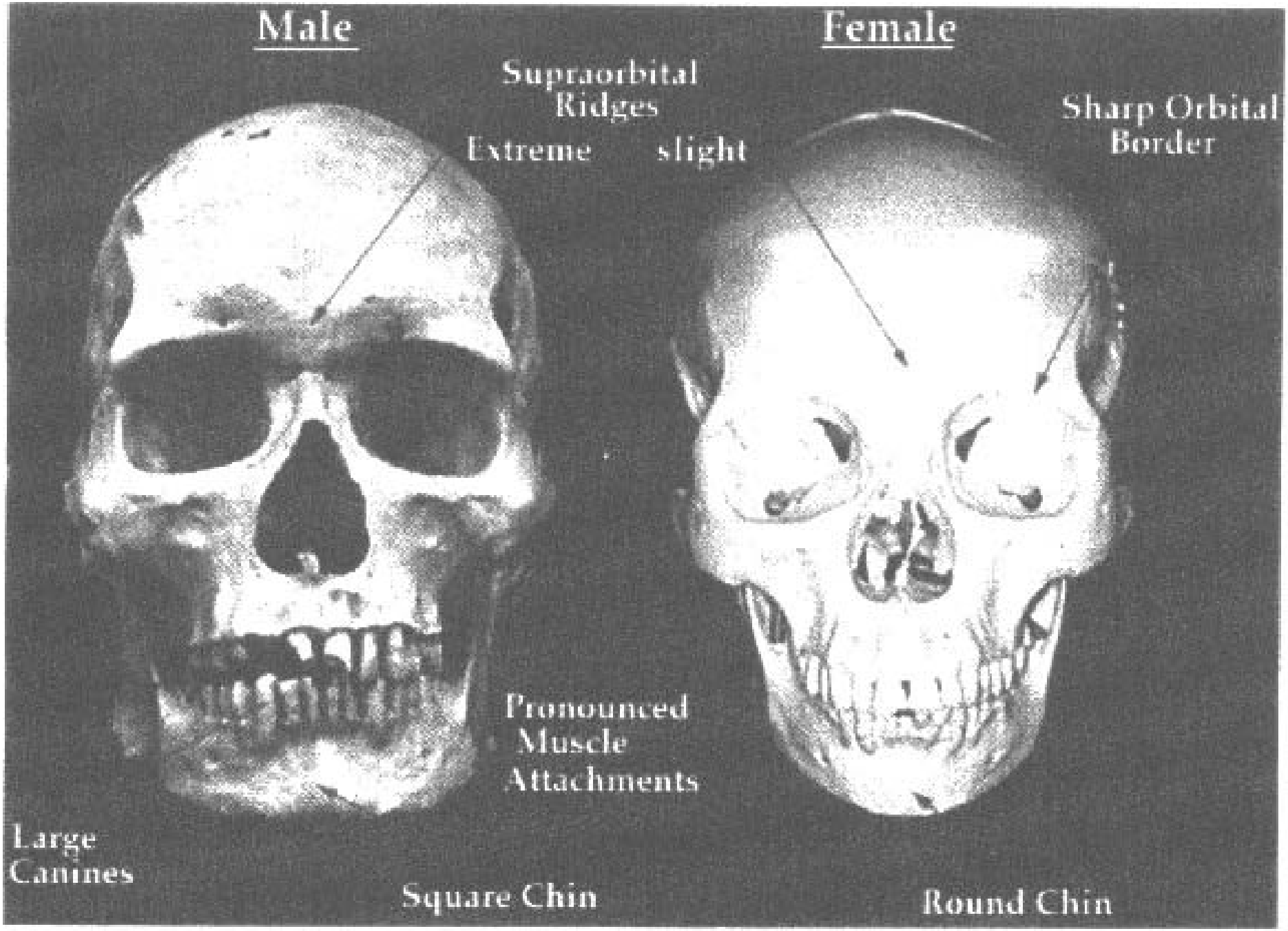
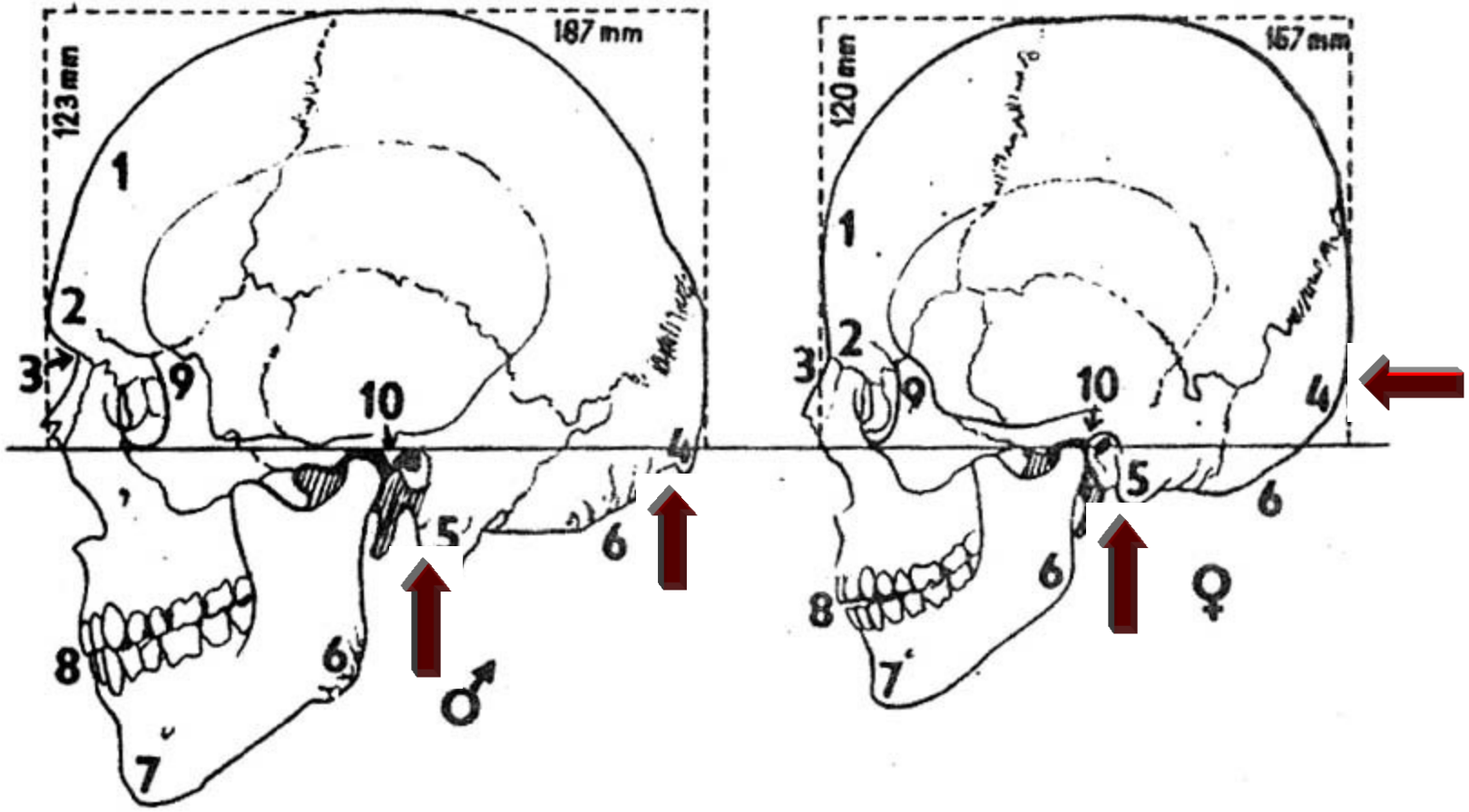



*Fig. 3. Discriminant analysis based on the ischium-length (IS-M), the pubis-length (PU-M), the upper part of the breadth (A—C) and the height (IIMT) of "incisura ischiadica major" (Novotný 1975). Measuring - see "Recommendations for Age and Sex Diagnoses of Skeletons", Journal of Human Evolution 9: 517-549, 1980.*


Male
Female
Supraorbital Ridges
Extreme
slight
Sharp Orbital Border
Pronounced Muscle Attachments
Large Canines
Square Chin
Round Chin


187 mm
123 mm
1
2
3
9
10
4
5
6
8
7
♂
167 mm
120 mm
1
2
3
9
10
4
5
6
8
7
♀

# Stature estimation

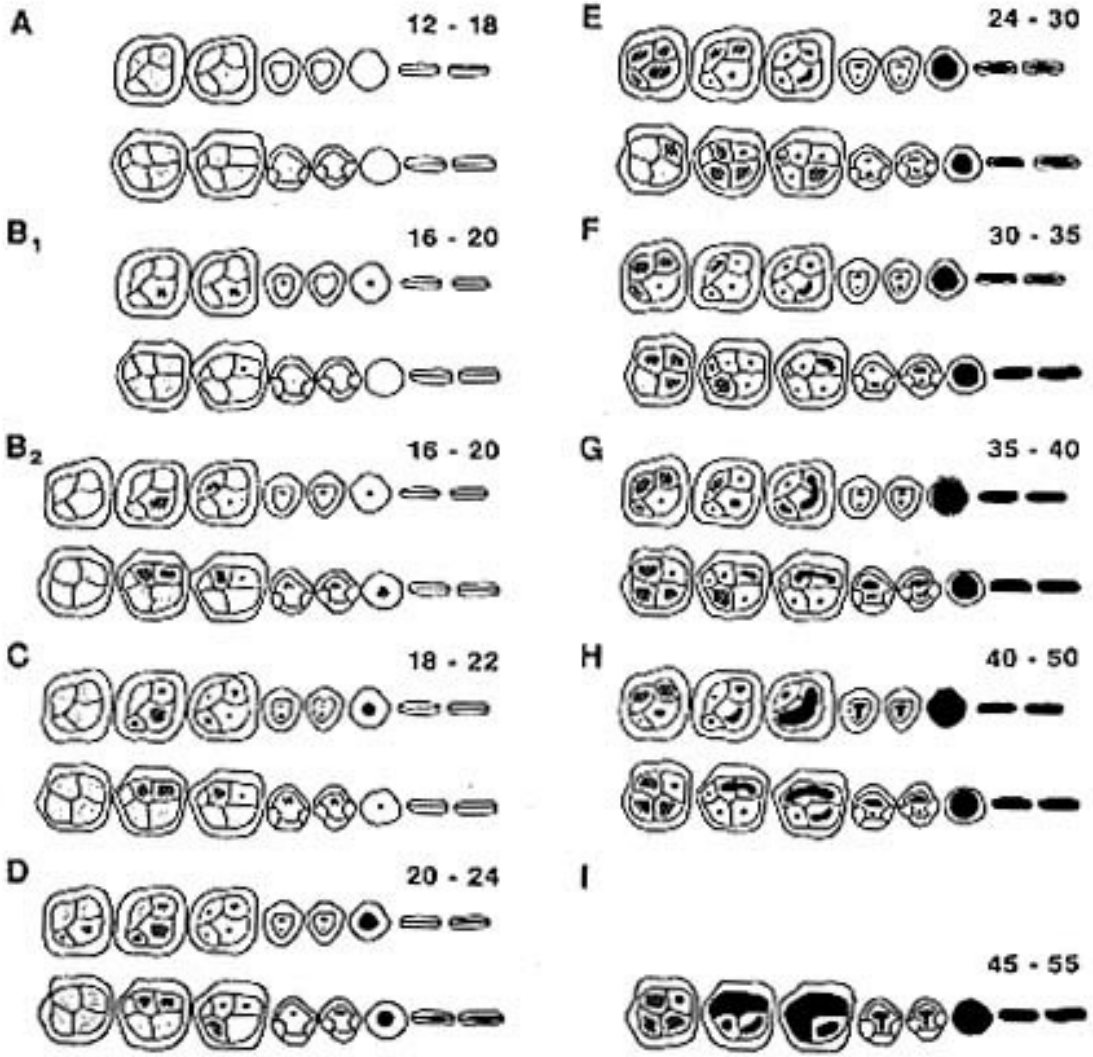
# Age estimation

***Subadult age estimation:***

- **Tooth eruption**
- **Epiphyseal closure**
- **Length of long bones without epiphyses**

# *Adult age estimation:*

- Pubic symphysis
- Radiographical study
- Sternal surface of clavicule
- Skull sutures
- Teeth occlusion


A
12 - 18
B1
16 - 20
B2
16 - 20
C
18 - 22
D
20 - 24
E
24 - 30
F
30 - 35
G
35 - 40
H
40 - 50
I
45 - 55

# Disadvantages of "classical" forensic anthropology

*Great variability*

*Unability to identify fragmental skeleton*

*Great subjectivity*