

## SKULL

The Alveolar plane is the plane of reference.

Figure 1. - *Ventral view*

1. Muzzle length: from Prosthion (point situated between the bases of the I<sup>1</sup>) to the middle of the line connecting the anterior borders of the P<sup>2</sup>.
2. Palatal length: minimal length between the middle of the line connecting the anterior borders of the P<sup>2</sup> and the point P situated at the base of the Palatal spur.
3. Vomerine length: from the same point P to the middle of the Vomerine notch.
4. Post-vomerine length: from the middle of the Vomerine notch to Basion (point situated at the middle of the ventral border of the Foramen magnum).
5. Post-palatal length: from the point P to Basion (5 is roughly equal to 3 + 4).
6. Basilar length: from Prosthion to Basion.
7. Premolar length: alveolar and on the vestibular side, without the P<sup>1</sup>, if present.
8. Molar length: alveolar and on the vestibular side.
9. Upper cheek teeth length: alveolar, without the P<sup>1</sup>, if present.
10. Choanal length: in projection from point P to the point of meeting of the guttural and caudal parts of the Vomer (always approximative).
11. Minimal breadth of the Choanae.
12. Maximal breadth of the Choanae.
13. Palatal breadth: at the level of P<sup>1</sup>-M<sup>1</sup>.
14. Minimal Muzzle breadth: the points of the calliper on the Premaxillary ridges.
15. Muzzle breadth: between the posterior borders of the I<sup>3</sup>.
16. Length of Fossa temporalis: maximal.
17. Length between Basion and the Foramen ethmoidalis.

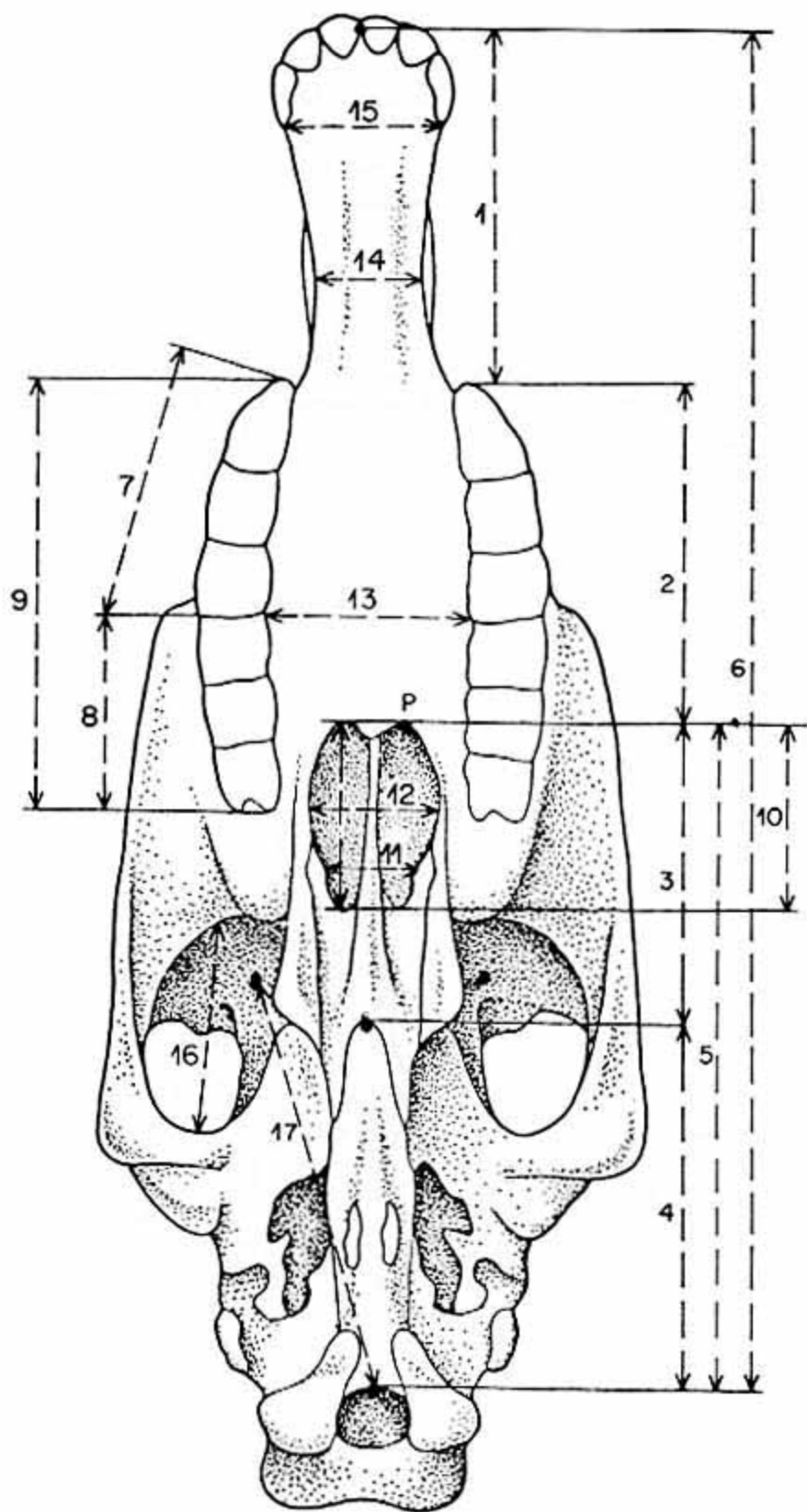


Figure 2.A - *Skull, Dorsal view*

18. Frontal breadth: greatest breadth between Orbital processes; compass.
19. Bizygomatic breadth: greatest breadth between the most exterior points of the Zygomatic arches; compass.
20. Occipital breadth: greatest breadth of the Supra-occipital crest.
23. Anterior ocular line: from Prosthion to the most exterior point of the Orbital process.
24. Posterior ocular line: from the most exterior point of the Orbital process to the middle of the Supra-occipital crest.

Figure 2.B - *Occipital view*

21. Basioccipital breadth: greatest breadth at the base of the Paroccipital processes.
22. Occipital height: from the middle of the dorsal border of the Foramen magnum to the middle of the Supra-occipital crest.

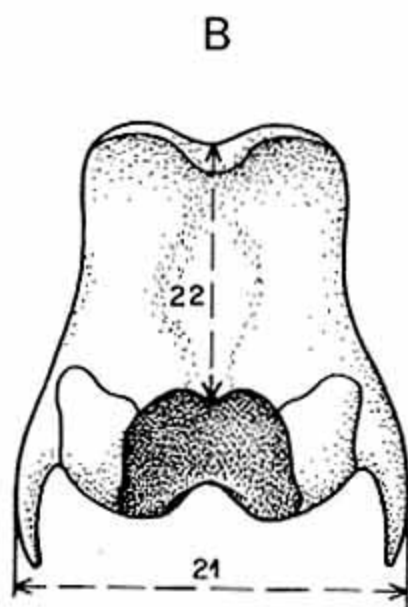
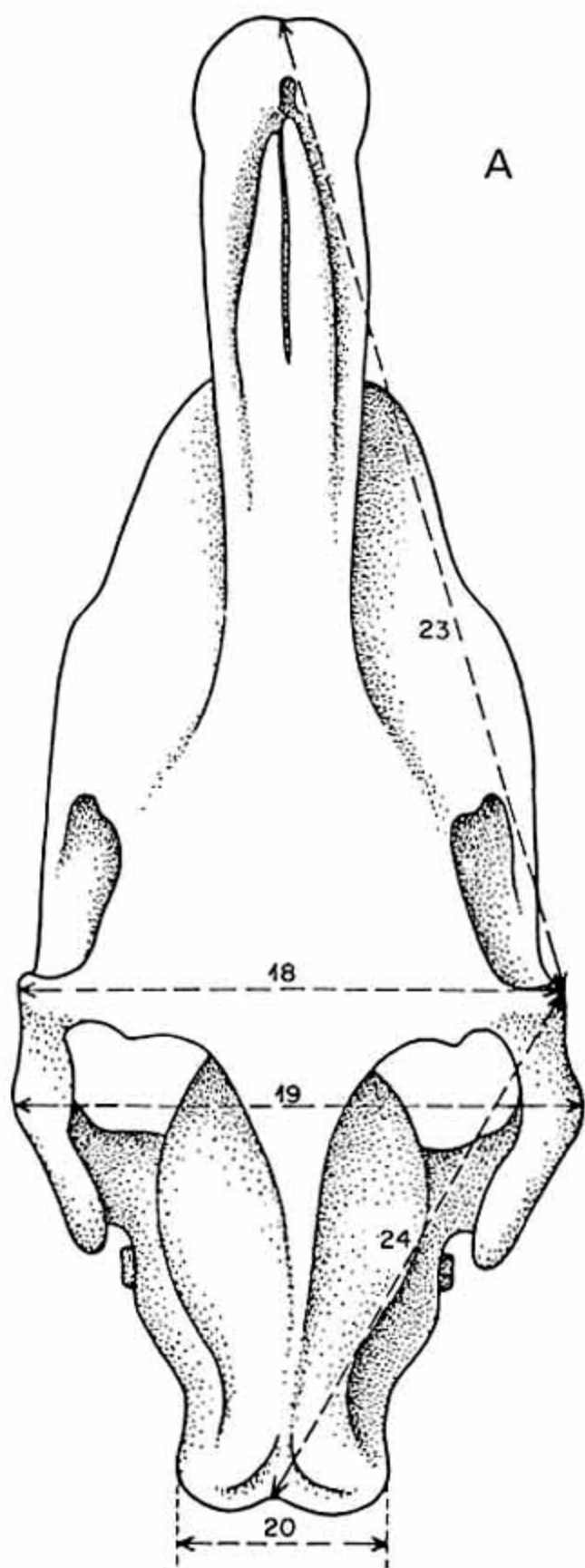


Figure 3.A - *Skull, profile*

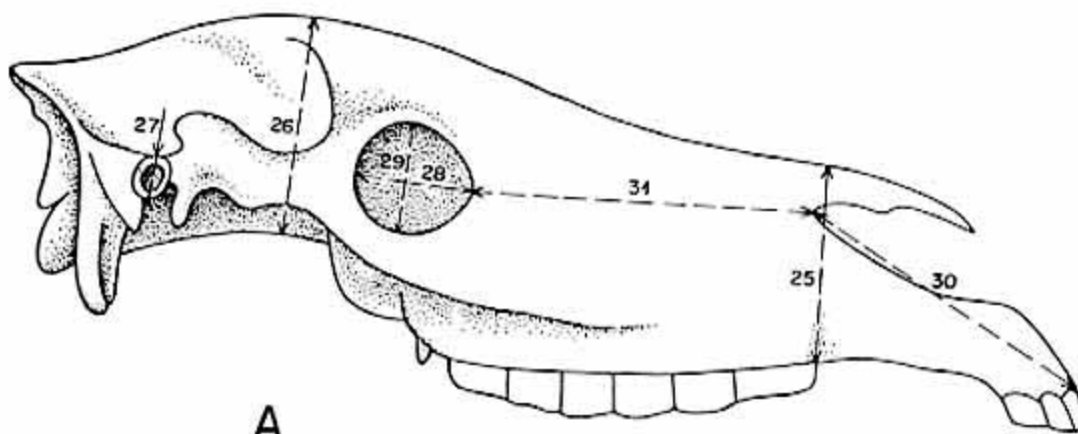
25. Facial height: with the compass, in front of P<sup>2</sup>.
26. Cranial height: with the compass, at the level of the posterior margin of the Orbital process.
27. Exterior height of the Meatus auditivus externus.
28. Antero-posterior Orbital diameter.
29. Orbital diameter perpendicular to the former.
30. Length of the Naso-incisival notch: from Prosthion to the back of the Narial opening.
31. Check length: from the back of the Narial opening to the most anterior point of the Orbit.

Figure 3.B. - *Skull, profile (In case of presence of a Preorbital fossa)*

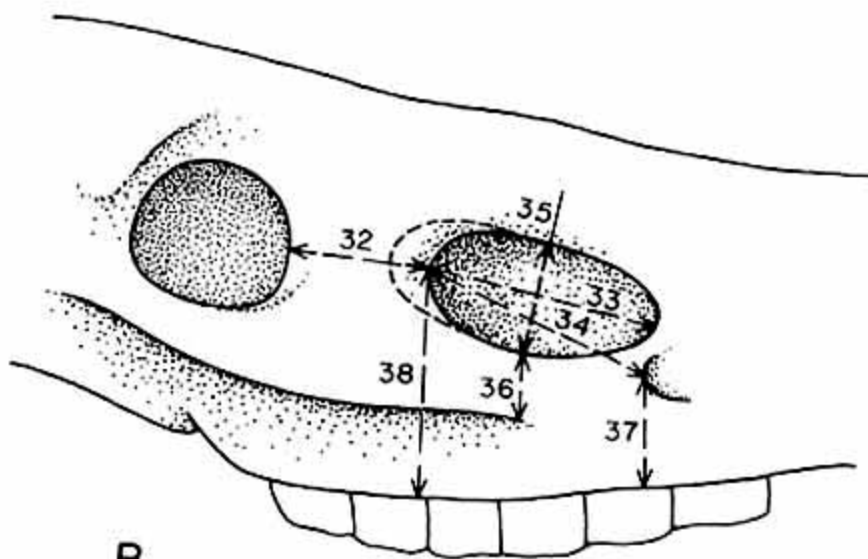
32. Distance between the Orbit and the Preorbital fossa.
33. Length of the Preorbital fossa: maximal.
34. Distance between the back of the Preorbital fossa and the Foramen infra-orbitale.
35. Height of the Preorbital fossa: perpendicular to its maximal length (33).
36. Distance between the Preorbital fossa and the Facial crest.
37. Height of back of the Foramen infra-orbitale above the alveolar border.
38. Height of the back of the Preorbital fossa above the alveolar border.

Some qualitative characters should also be noted:

- axis of the Fossa relatively to the Alveolar plane;
- position of the Orbit and of the Lacrymal, the Nasal and the Maxillary bones and their sutures relatively to the Fossa;
- projection of the limits of the Fossa relatively to the Infraorbital foramen;
- presence and degree of development of the posterior pocket and of the rim limiting the Preorbital fossa (Woodburne & Bernor, 1980).



A



B

See also 'Preorbital fossa' measurements

## MANDIBLE

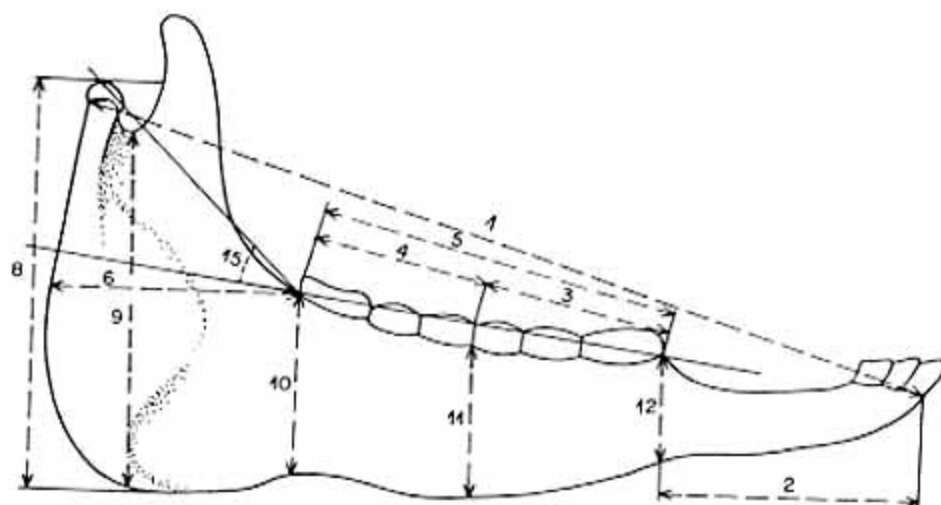
Figure 4.A - *Mandible, profile*

1. Length: from the point between the alveoles of the I<sub>1</sub> to the back of the Condyle.
2. Muzzle length: from the same point between the alveoles of I<sub>1</sub> and the middle of a line connecting the anterior borders of the P<sub>2</sub>.
3. Premolar length: alveolar and on the vestibular side.
4. Molar length: alveolar and on the vestibular side.
5. Lower cheek teeth length: alveolar.
6. Distance between the back of the alveole of M<sub>3</sub> and the posterior edge of the Ascending ramus: in the same alveolar plane as 3, 4, and 5.
8. Height of the mandible at the Condyle: perpendicular to the Alveolar plane (as all other heights), from the top of the Condyle to the plane tangent to the Horizontal ramus of the mandible.
9. Height of the Ascending ramus: from the bottom of the depression between Condyle and Coronoid process to the same plane.
10. Height of the jaw posterior to M<sub>3</sub> (always perpendicular to the Alveolar plane).
11. Height of the jaw between P<sub>4</sub> and M<sub>1</sub>.
12. Height of the jaw in front of P<sub>2</sub>.
15. Angle between the Alveolar line and the line connecting the back of the M<sub>3</sub> and the top of the Condyle (after projection on a sheet of paper).

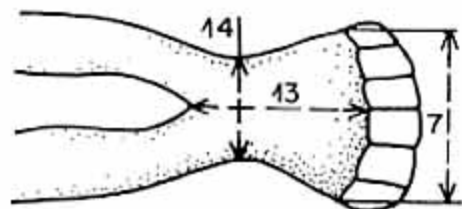
Note that measures 6 and 8 to 12 are not exactly represented relatively to the Alveolar plane on fig. 4.A.

Figure 4.B. - *Ventral view of the mandibular symphysis*

7. Muzzle breadth: between the posterior alveolar borders of the I<sub>3</sub>.
13. Length of the Symphysis: from the point situated between the alveoles of the I<sub>1</sub> and the back of the Symphysis.
14. Minimal breadth of the Symphysis.



A



B



## SKULL AND MANDIBLE

Equivalences between the system proposed in the present paper (PP), the system used by Eisenmann since 1974 (VE), and the system published by von den Driesch in 1976 (AVD).

## SKULL

PP	VE	AVD	PP	VE	AVD	PP	VE	AVD	PP	VE	AVD
1	5	-	20	16	-	-	2	18a	-	-	10
2	-	-	21	-	35	-	6	21	-	-	11
3	3	-	22	-	-	-	7	24a	-	-	12
4	4	5	23	23	15	-	7b	23a	-	-	13
5	-	17	24	24	-	-	8	22a	-	-	14
6	1	3a	25	25	-	-	11	43	-	-	16
7	-	24	26	28	-	-	12	4	-	-	19
8	-	23	27	20	-	-	15	38	-	-	20
9	-	22	28	21	31	-	18	1	-	-	33
10	9	-	29	22	32	-	19	-	-	-	37
11	10b	-	30	31	-	-	26	-	-	-	39
12	10	-	31	32	-	-	27	-	-	-	40
13	-	-	32	-	-	-	29	36	-	-	42
14	17b	-	33	-	-	-	30	34	-	-	44
15	17	45*	34	-	-	-	-	2	-	-	46
16	-	-	5	-	-	-	-	6	-	-	47
17	-	-	36	-	-	-	-	7	-	-	48
18	13	41	37	-	-	-	-	8	-	-	49
19	14	-	38	-	-	-	-	9	-	-	50

\* AVD measures the greatest breadth of the muzzle across the outer borders of the alveoli instead of the posterior borders; her measurements would be in consequence 5 to 10 mm bigger.

AVD uses also many other measurements (Von den Driesch, 1976, p. 19-22). Her measure 13 is roughly equal to PP (30 + 31) and VE (31 + 32).

## MANDIBLE

PP	VE	AVD	PP	VE	AVD
1	1'	2	-	-	1
2	-	-	-	-	4
3	-	8	-	-	5
4	-	7	-	-	17
5	-	6	-	-	21
6	-	3	-	-	23
7	7'	16*	-	-	24
8	-	19	-	-	25
9	8'	20	-	-	-
10	-	22a	-	-	-
11	-	22b	-	-	-
12	-	22c	-	-	-
13	6'	-	-	-	-
14	-	18	-	-	-
15	-	-	-	-	-
-	2'	-	-	-	-
-	3'	15	-	-	-
-	4'	8a	-	-	-
-	4'-b				
		7a	-	-	-
-	5'	6a	-	-	-

\* AVD takes this measurement across the outer borders of the alveoli instead of the posterior borders; accordingly her values would be 5 to 10 mm bigger.

AVD uses also 8 other measurements (Von den Driesch, 1976, p. 52-54).