

loop is often greater than the forward one. The external channel is much less deep in the ass than in the horse.

To discriminate among whole skulls, Lesbre finds by comparison, empirically, the method of drawing a connecting line between the *tuber molaris* and the *fossa articularis ossis zygomatici*; if the prolongation of this line strikes the crista occipitalis, or anterior to this cuts the facial plane, the animal is an *ass*; if this line passes posterior to the crista occipitalis it is a *horse*.

Tscherski\* places much dependence on the construction of the nasal bones and on the form of the suture between the lacrimal and the nasal bone. This, he says, is in the ass always curved outward in bow shape, but is straight in the horse. I find that this relation is very dependent on the breadth of the forehead. The *foramina infra-orbitalia* stand nearer (to the naso-maxillar suture) in the ass than in the horse. He says, further, that in the horse the processus zygomatici ossis frontalis is three-cornered, but in the ass oval and compressed.

Salenski† asserts that Tscherski's criteria are valuable and to the point, especially the form of the suture between the lacrimal and the nasal bone, but that a difference in the cross-section of the processus zygomatici ossis frontalis can not be verified in the ass and horse. On the other hand, Salenski proposes another method, which he considers extremely constant: the lower edge of the lower jaw is in the ass curved and furnished with protuberances, while in the horse it is smooth and straight. Unfortunately I can not agree with Salenski, as I consider this criterion of the lower jaw very variable, eminently dependent on the age of the individual; one has only to compare the lower jaw-bone of the horse of Auvernier with the one of exactly similar shape in the ass from Abadie (plate 87, figs. 1 and 2).

So far the authors. It is now time to investigate the *conditioning factors* that influence the shaping of the skull of the ass and of the horse. Starting with the law, which I have proved elsewhere,‡ that the skull is a flexible product of the influence of skin and muscle, the longer ear and its generally different position seems to be decisive for the head of the ass. The greater burden imposed by the external ear must have had as a consequence a change in the musculature of the ear, which in turn, as is shown by Anthony§ and Toldt|| exerts its influence on the bones. Indeed the whole ear-musculature is different in the ass, as I was able to observe in agreement with Kirsten,¶ on the only fresh head that I could obtain.

\* J. D. Tscherski, *Wissensch. Resultate d. Neusiberischen Expedition*. Mém. Acad. Imp. St. Pétersbourg, t. XL, 1893.

† W. Salenski, *Equus przewalski* Polyakof. *Wissensch. Resultate d. von Przewalski nach Central Asien unternommenen Reisen*. Zoolog. Teil, Bd. 1, Abt. 2, Lief 1, pp. 27-47, St. Petersburg, 1902.

‡ Experimentelle Studien ueber die Morphogenie des Schaedels der Cavicornia. *Vierteljahrsschr. Naturf. Gesellsch. Zürich*, 1903, pp. 360-374.

§ R. Anthony, *Études expérimentales sur la morphogénie des os*. Modification crâniennes consecutives à l'obliteration d'un crotaphyte chez le chien. *Journal de Physiologie et de Pathologie Gén.*, No. 2, Mars, 1903.

|| R. Toldt, *Asymetrische Ausbildung der Schlaefenmuskeln bei einem Fuchs infolge einseitiger Kau-tätigkeit*. *Zoolog. Anzeiger*, 1905, Bd. XXIX, No. 6.

¶ F. Kirsten, *Untersuchung ueber die Ohrmuskulatur verschiedener Säugetiere*. Inaug. Diss., Bonn, 1902.