

harmonizes best with the diluvial horse of Solutré, while the larger animal, published by Grum-Grshimailo, inclines rather towards the Siberian diluvial horses of Tscherski and those of Nehring, both of which lived on succulent pastures of the loess-steppes. Indeed I state decidedly that, from among a somewhat comprehensive collection of bones from Solutré, one can choose at pleasure bones wholly identical with those of specimens of *Equus przewalskii*.

The disappearance of the tundras and loess-steppes of North Germany, as Nehring particularizes, caused the disappearance of at least the greater part of the wild horses, while those that remained had henceforth to adapt themselves to forest life. After this change we find, in the paleolithic and neolithic localities, remains of horses which, without having lost the broad, strong forms of the diluvial horse, show a diminution in size of the race. I recall here the metacarpi and metatarsi of the Bohemian localities (Wohontsch and Leitmeritz) and of the French (Couvres, Curchy, Louverné, Cindré, Fouvent). Not until the latest neolithic age, the copper and bronze stages of the bronze age, and the iron time, do we meet with the characteristic slender bones of the horse in the Bohemian as well as in the Swiss, French, and German (Spandau) localities. As much as the horses of Wohontsch, Leitmeritz, Cindré, Fouvent, etc., agree with the Schlossberg horse of the ancient Germans, so much do the bones of the animals of this new La Tène race resemble those of the horse of Anau, or *Equus caballus pumpellii*.

In Anau, however, before the founding of the Anau culture, that is, during the paleolithic or latest early-neolithic culture of Europe, a horse lived on the *loess-steppes*, as shown by R. Pumpelly,* probably the same horse as that described. But we see how, during the existence of the two North Kurgan cultures at Anau, it became gradually more gracile and slender-limbed. The growing desert of Transcaspia, acting through changing nourishment and especially through the mechanical action of increased motion and adaptation to oasis life—as in all desert animals—created the extremely slender-limbed horse, which so preeminently embodies in its limbs Frank's Oriental race.

Should not importance be conceded in Europe, too, to the climatic and physiographic conditions which had such deep-reaching influence in Anau? Do we not see the action of fundamental climatic and physiographic conditions in the fact that the home of the modern heaviest horses is the whole of the North German, Belgian, northern French, and English lowlands not very far from the sea; and that, except in some more southern localities with deep rich soil and extensive farming (Lombardy) nowhere else in the world have they succeeded in producing a heavy horse? I certainly believe it. The natural surroundings that condition the growth of horses and of their bones were active then as now.

After the eminent investigations of Kraemer on the hollow bones of the horse, I have become convinced that the small-boned horse of the bronze age and La Tène time could not have been formed in the boundless primeval forests that grew up in Europe after the disappearance of the steppe vegetation, for we know that just these physiographic changes, by restricting the freedom of motion, thicken the extremities. Hence, it follows necessarily that this small, slender-limbed horse must have been *imported*. But whence?

* Pumpelly, Raphael, Interdependent Evolution of Oases and Civilizations, Presidential Address before the Geol. Soc. of America, 1905. Bull. Geol. Soc. Amer., vol. 17, pp. 55, 56.