

tabu, animal descent, etc.), although "they exist separately and independently from one another," are also found associated in totemic complexes. If they were "nowhere found united" and were "not correlated to one another," there would be no totemic problem.

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EVIDENCE OF THE ZEBRA IN THE PLEISTOCENE  
FAUNA OF FRANCE

FROM certain drawings by paleolithic artists, reproduced by Édouard Piette in his work on "The Art Relating to the Reindeer Age,"<sup>1</sup> it would appear that a species of zebra had wandered northward, with other members of the African fauna, during the Pleistocene, at least as far as central France. On plate XXX. of Piette's work are reproduced two engraved figures of an animal that seem undoubtedly intended to represent a zebra. In one of these (Fig. 6) only the head and neck appear, while in the other (Fig. 7) almost the entire animal is drawn. The reference to these figures in the accompanying text is as follows:

FIG. 6. Engraving representing the head and neck of a horse-like animal with erect mane, delicately striped like the zebra. The stripes are formed by rows of points almost contiguous. One notices in the front of the head a series of marks like chevrons and under the neck, two short parallel stripes. Grotte des Espélungues, A'Arudy.

FIG. 7. Engraving representing an animal like a horse, delicately striped like a zebra, with erect mane, small head having small ears. The stripes are indicated by series of parallel lines or of points. The tail is incompletely drawn. Grotte de Tayngen.

The striping of the hind quarters in Fig. 7, suggests the "gridiron" pattern on the rump of the rock or berg zebra (*Equus zebra*), an existing species, now on the verge of extinction, but formerly abundant in the mountainous districts of Cape Colony. Here, however, the likeness ends, for the absence in the engraving of stripe marks on the limbs, the presence of which, clear down to the hoofs, is a character of the above species, would sug-

<sup>1</sup>"L'Art Pendant L'Age Du Renne," Paris, 1907.

gest Burchell's zebra (*Equus Burchelli*) as would also the small size of the ears.

A careful study of these drawings forces one to the conclusion, it seems to me, that a species of zebra was present in western Europe when paleolithic men were engraving the lineaments of reindeer, bison, horse, mammoth, cave bear, woolly rhinoceros and other animals of that strange and interesting time. Surely this ancient artist did not stretch his imagination to so accurately delineate the stripe pattern of a zebra, without having seen it. All of these paleolithic engravings depict an animal most faithfully, even, at times, to minute details. The familiar sight of some beast begat an impulse that found its expression in virile representations of form, remarkably accurate considering the rude and primitive implements for engraving, that were in the hands of these artists of the remote past.

I am not aware of any previous reference to the zebra's former existence in Europe, and I present the above facts simply as evidence coming from the hand of one who without doubt knew and drew some form of zebra that later, like so many other great mammals, vanished from the northern lands.

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SCIENTIFIC BOOKS

*Termitenleben auf Ceylon; Neue Studien zur Soziologie der Tiere, zugleich ein Kapitel Kolonialer Forstentomologie.* Von KARL ESCHERICH. Jena, Gustav Fischer. 1911. Pp. xvii + 262. 68 text-figures; 3 pls.

This important contribution to our rapidly increasing knowledge of the termites, or "white ants," had its origin in a journey made by Professor Escherich during 1910 to Ceylon, and contains a very interesting account of the behavior of several of the species of that island. Four fungus-growing species (*Termes obscuriceps*, *redemanni* and *ceylonicus* and *Microtermes globicola*) are considered at length in the opening chapter of the work, their architecture and fungus-gardens being