*imperator*. It can not, in the writer's opinion, be successfully controverted that the La Brea fauna existed during the first interglacial stage.

Scenes like that represented by the mural doubtless occurred, but they must have been infrequent. Osborn's census (his page 528) shows 5,237 animals caught. If the time required was two thousand years the risks run by elephants, camels, sloths and horses were not great. An elephant and a horse were entrapped in a century; a sloth and a camel every thirty-three years; a bison a little more frequently. The saber-tooths and wolves depended little for their living on the catches of those traps. Twenty-one carnivores perished for each herbivore. Evidently there is some as yet unthought-of explanation for the destruction of the wolves and saber-tooths. Professor Osborn's theory of illusory waters in a thirsty land is inadequate. Horses, bisons and elephants require water even more than do wolves and tigers.

Probably there are those who believe that the history of the tar pits was a short one and that the sanguinary performances enacted there were more nearly continuous; others, as the writer, that the history was much longer than two thousand years.

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## AGE OF PRESBYOPIC VISION AS AN INDEX OF THE LONGEVITY OF PRIMITIVE MAN

IN normal individuals the onset of presbyopia during the fifth decade of life is a very striking and constant phenomenon. The loss to the individual of the ability to adjust his crystalline lens for near vision can not be regarded as otherwise than a handicap to that individual. Even in the life of primitive races such loss must of necessity have placed its victims in an unfavorable condition as compared with younger members who possessed clear vision from a foot to a hundred feet. In the case of modern civilized man such loss is very obvious and would work serious hardships were it not an easy matter to correct it by means of appropriate lenses of glass. The point I wish to bring out is that if primitive man had lived in any numbers beyond the fifth decade, it is not improbable that there would have developed through the survivorship of the more fit a race which would have retained elasticity of the crystalline lens for more decades than five. It is well appreciated that the above idea may be a case of "the cart before the horse" and that presbyopia may have been a small one of several factors causing the members of primitive races to die at relatively earlier ages as compared with the average age of death of modern civilized man. That a small percentage of persons possess an elastic lens for more than five decades shows the possibility of postponing presbyopia had there been any occasion for applying the law of natural selection. The presbyopic age falls in so closely with the average age of longevity in the past as expressed by Dr. T. Wingate Todd in "Age: the Piper," SCIENCE, September 3, 1926, that the matter seems to be more than a coincidence.

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## THE INDICATION OF QUOTATIONS

WHEN the reader of a scientific paper encounters quotation marks he usually apprises his audience of the fact in one of various ways; he may say "quotation" where it begins and "end of quotation" at the end, or he may say "quotes" and "quotes closed." Where quotations are frequent the reader may fail to indicate them accurately because of the time and awkwardness involved, and misunderstanding may result. This difficulty has arisen, also, in the reading of proof by one person to another.

Perhaps there is a reader of SCIENCE who knows of something that has been done toward simplifying the indication? It is suggested that matters might be improved by using more easily vocalized expressions and by taking advantage of the inflection of the voice. The expression "coo," for example, might be conventionalized as the indicator of the beginning of a quotation and "cō" as the indicator of the end. These combinations are quickly and easily vocalized and the falling inflection in "cō," which occurs naturally, suggests the end of the quotation. Indicators of this character would scarcely be confused with the content of the paper being read.

Where conditions permit, perhaps tapping would afford a more effective mode of signalling. Two taps of a pencil on the table, for example, might be made the pre-quotational and one tap the post-quotational signal. Such indication would obviously stand out from the context.

One lecturer has been known to signal quotation by an arm gesture symbolic of brackets. A disadvantage of inaudible gesture, though, is that it is not noticed by those members of the audience who do not happen to be spectators at the right moment.

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## THE CALORIMETRIC METHOD OF DETERMINING BLOOD FLOW IN THE EXTREMITIES

DR. STEWART'S communication, which appeared in SCIENCE for September 3, 1926, and which carries the title quoted above, is presumably a rejoinder to my special article which was printed in SCIENCE July 2, 1926, under the caption: "On the Elimination of Heat