poorer nights. The average probable error of the parallaxes of Table I. is ±0.″046, and, therefore, the true values should be within one-tenth of a second of the numbers there given. When we consider average values of parallax, however, we have a more trustworthy determination of the distance of certain stars as a class. Thus ten stars of the list have a proper motion of one second or more. The mean value of their parallaxes is +0.″11, with a probable error of ±0.″015, so that the average distance of these stars is indicated to be such as to require about thirty years to be traversed by light. Table I. contains one star, *Lalande 47019*, which found entrance quite unexpectedly. It was the first comparison star for *85 Pegasi*, and the latter was first reduced in the regular manner but showed a negative parallax. This was explained upon making comparisons of the first star, *Lalande 47019*, with *85 Pegasi* and the third star of the group separately, for the two solutions resulted in positive and nearly equal values of the parallax for the first. The mean of these two values, +0.″21 and +0.″27, is given in the table. An inspection of the data indicates that this is a real parallax, and not merely an apparent one such as might be ascribed to personal change. The magnitudes of the stars were 8.1, 6.1, 6.2 respectively, and no screens were employed in this group. I included in the examination a number of observations made with the screens expressly as a control on the personal equation depending upon the brightness of the stars. The case of *Lalande 47019* is an interesting one, since the star is faint and the comparison of four catalogue positions extending from 1800 to 1890 gives no plain indication of proper motion. Yet the results indicate that it is the nearest star of the thirteen in the table. With this separate presentation of *Lalande 47019* and *85 Pegasi*, it will be noticed that while some of the parallaxes are very small yet they are all positive. According to the law of chances some of these values should be the lowest possible ones derivable for the individual stars and some should be the highest possible values. The fact that they are all positive and comprised within so limited a range indicates that the observations are not liable to such systematic errors as have even led sometimes to large negative values of parallax, and strengthens the hypothesis that the stars of large proper motion are on the whole comparatively near us.

In the case of two of the stars we have several independent determinations as shown in Table II. For *η Cassiopeiæ*, one of the stars having a remarkably large proper motion, the results indicate a definite parallax of about 0.″13. The number of separate determinations, however, is few, and we can only say that the chances are that the distance of this star is such that it requires somewhere from 22 to 30 years for its light to reach us. *α Lyræ* has been a favorite object for parallax observations, owing to its brilliancy and its favorable position for northern observatories, and consequently we have a good determination of its distance. The concluded value of the parallax, +0.″138, corresponds to a light journey of 23.6 years, and the uncertainty of this result is so small that the chances are that the time actually required is somewhere between 22.3 and 25.1 years, while we may feel confident it cannot be more than 33 years nor less than 18 years, that its light requires to reach our system.

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OZARKIAN EPOCH—A SUGGESTION.

AMONG the voluminous writings on various geological subjects published during the past ten years, there has been frequent mention made of an erosion interval occurring between the Lafayette formation and the lowermost glacial deposits. Those who have studied the subject in the coastal plain or southeastern portion of the United States agree in asserting that this erosion period, was the longest and in every way the best marked of any that have prevailed over any portion of the continent since the close of the Tertiary Era. In that broad belt of unglaciated highland which occupies the interval between the inner edge of the coastal plain and the outer border of the drift-covered district, this post-Lafayette erosion period is as easily distinguished as on the lower country near the coast. Indeed, if the evidence of its length were derived solely from the amount of rock excavation accomplished, this inner district could be relied on chiefly to furnish this evidence. In both districts the period of erosion was begun by an elevation of the continent above its normal altitude, thus enabling the meteoric waters to institute a vigorously erosive system of drainage. It was terminated by a general subsidence of the eastern portion of the United States, and in consequence an extensive submergence in the coastal plain region and the Mississippi basin.

But in the drift-covered district, where evidence of this post-Lafayette elevation and erosion are not wanting, but frequently obscured by other phenomena, the upper limit of the erosion interval was the Kansan epoch of glaciation. This epoch was followed by another of erosion on the previously ice-covered region, which was itself many times longer than any which have succeeded it. These two important sub-divisions of the Glacial period are the chronologic equivalents of the latter portion of the post-Lafayette period of erosion as developed outside the limits of the glaciated district. Severing this latter portion there still remains a long period of sub-aërial erosion, the equivalent of what in the North has been denominated the pre-Glacial epoch of erosion. Recent studies have indicated that this early pre-Kansan erosion epoch constituted at least one-half of the post-Lafayette period of erosion. In fact, it occupied a very large part of the time which has elapsed since the close of the Tertiary era.

There is, I believe, general agreement among geological students that the post-Lafayette period of erosion is early Quaternary in age. I shall not argue this subject, but assume that it has been demonstrated by various writers that the period immediately supervened upon the close of the Tertiary era. Consequently, being Quaternary in age, the portion of it which intervenes between the institution of the era and the opening of the Kansan epoch constitutes the first and not least important epoch of the Pleistocene period (which, as I understand the consensus of opinion, is considered to date from the beginning of the era).

Now, up to the present time, so far as I am aware, there has been no specific term applied to this first epoch as here defined, except the rather indefinite one, pre-Glacial. As it presented features both in conditions of erosion, climate and flora, somewhat similar to those which characterized subsequent inter-Glacial epochs, and in marked contrast to those which characterized the Glacial epochs, all of which have been already named, it is evident that it deserves some specific application which will facilitate future studies into the natural subdivisions of the era. The name wanted might be secured in the coastal plain, but there it is difficult, if not impossible, to separate this from the subsequent epochs to which, as before stated, the latter portion of the pre-Columbian erosion interval belongs. Instead, we may more properly derive the desired term from some geographical designation of some portion of the unglaciated highland just without the glacial boundary. I hereby suggest that it be hereafter known as the *Ozarkian epoch.* True, while the post-Lafayette period of erosion is as well represented by phenomena occurring in the Ozark Plateau region, the particular portion of it included in this epoch is no better demarked than in the coastal plain. But the Ozark region immediately adjoins a drift-covered region on which the Kansan drift sheet is widely exposed, and when the two regions have been exhaustively studied the relation of the drift to the valleys along the border will furnish data for discriminating the proposed Ozarkian epoch from that which followed. The geographical element of the term has been already used in geological nomenclature, as, for example, the Ozark Series, the Ozark Uplift and the Ozark Plateau, but the term as suggested differs so widely from those in use that it can never be confounded with them. Furthermore, the term is euphonious and in harmony with the nomenclature already adopted for the other epochs of the Pleistocene period.

The Ozarkian epoch as here proposed may be defined as a marked period of elevation and sub-aërial erosion instituted by the great post-Tertiary epeirogenic uplift of North America, and terminated by the Kansan epoch of widely extended glaciation. The following general table of the sub-divisions of the Quaternary Era graphically exemplifies its relative position:

QUATERNARY ERA.	RECENT P.	PRESENT EPOCH......DEPOSITION.
		TERRACE EPOCH......EROSION.
	PLEISTOCENE PERIOD.	Wisconsin Epoch...3d Glacial.........Drift.
		Toronto? Epoch.....2d inter-Glacial..Erosion.
		Iowan Epoch........2d Glacial..........Drift.
		Aftonian Epoch.....1st inter-Glacial..Erosion.
		Kansan Epoch......1st Glacial........Drift.
		Ozarkian Epoch....pre-Glacial........Erosion.
Lafayette Period.....Deposition.		

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[NOTE. The subdivisions of the Pleistocene period in the above table, except the last, are from Chamberlin's classification of the drift. The inter-glacial epoch between the Iowan and Wisconsin stages of glaciation has been provisionally named from the fossiliferous beds at Toronto, Canada, although it is considered far from certain that these strata belong to this epoch.

It is not customary to affix names to periods of erosion, although these are generally the longest and often the best marked divisions of geologic time. It has been suggested that it would be well to simply recognize the intervals of erosion, when encountered in any region, and wait until deposits occupying them have been discovered, before naming them. But in the case of the particular one under discussion, the conditions were such that no deposits contemporaneous with it are likely to be discovered. During the period of elevation which immediately succeeded on the Lafayette submergence the shore line was far beyond its present position, and the river alluvium and marine deposits of that epoch are buried under later formations and covered by the sea, where they can never be examined. Nor are there any correlative glacial deposits which could furnish a name to the epoch. The Ozarkian epoch as proposed is to terminate previous to the earliest Pleistocene glaciation of any portion of North America, except, perhaps, the far North. At present the Kansan epoch, which is to include the advance and retreat of the ice sheet which formed the so-called Kansan drift, is considered the first of the great glaciations. But if any decisive evidence of any previous distinct glaciation should be discovered it would constitute a new epoch and simply detract from the length of the Ozarkian epoch. The writer is of the opinion that the portion of the Quaternary era characterized by glacial conditions began at some time subsequent to the opening of the era, and it is to this distinctively pre-glacial portion that I wish to attach the name, Ozarkian epoch O. H. H.].

ORGANIC MARKINGS IN LAKE SUPERIOR IRON ORES.

AT the instance of Dr. Charles D. Walcott, Director U. S. Geological Survey, and with the kind permission of the editor of this paper, I beg to submit the following note, hoping that the subject may be brought to the notice of the officers of the U. S. Geological Survey, the Geological Surveys of Michigan and Wisconsin, etc., as well as that of all field workers among the rocks of