commonly known as the “Staked Plain” (Llano Estacado). It is the direct southern continuation and termination of the great plains of the North American continent which extend along the eastern slope of the Rocky Mountains from British America to tho Rio Pecos. The eastern edge is well marked by a steep escarpment, which, in consequence of destructive erosion, is constantly receding to the westward. The surface is smooth, and utterly devoid of forest growth or streams of water. But there are many small ponds or lakes, and in the southern part these are saline. The soil is light, rich, and porous, and is covered with a good growth of grass. Until a few years ago this region was totally unpeopled, but many portions of it are now (1887) used for grazing purposes, water being secured by means of wells or artificially constructed reservoirs. The altitude ranges from 2500 to 4000 feet. (5) The trans-Pecos or mountainous region west of the Pecos river is com­posed of numerous mountain peaks and ranges, with intervening valleys of many miles in width. It is poorly watered, and the population outside the immediate Rio Grande valley is very sparse. The general level of the country is from 3000 to 5000 feet.

The rivers are separable into several sub-systems. The Rio Grande and the Arkansas, constituting the north and south limits of the Texas drainage system, with their respective tributaries, the Pecos and the Canadian, originate in a limited district of northern New Mexico and Colorado, and ultimately reach the sea at points a thousand miles apart. The Canadian and the Pecos have cut deep canons through the Llano Estacado. The former continues eastward through Indian Territory, and the latter southward, join­ing the Rio Grande between 101° and 102o W. long. on the southern border of the State. The Rio Grande and the Pecos receive no tributaries of importance in Texas, but are constant in their flow. The next and most important group comprises the Red, the Brazos, and the Colorado, all of which originate along the eastern border of the Llano. They traverse similar regions, and have a general resemblance in character of sediment, irregularity of flow, velocity, and topography of drainage basins. Their brackish water is princi­pally derived from the sudden precipitation of rainfall along the gypsiferous escarpments of the Llano. Its volume is ordinarily small, the flow often ceasing entirely west of the black prairie region. There are periodic freshets, however, which suddenly swell the volume to enormous proportions. These freshets, laden with the rich red loam of the plains, usually reach the lower in­habited sections of the State in periods of drought, and are termed “red rises.” Much of this sediment is deposited upon the flood plane of the lower valleys, and by this process the most valuable sugar and cotton lands of the coast plain have been built up. Another important group consists of the Sabine, the Trinity, the San Marcos, the Guadalupe, and the Nueces, most of which have their origin near the western border of the black prairie region. These streams have a greater volume and are more constant in flow than any others, and are usually without deep canons or wide bottoms. Many of them, especially those south of Austin, have their origin from large springs situated along the foot of the escarp­ment line extending from Austin southwestward. Another sub­sidiary system of streams originates in the narrow Quaternary region along the coast, within the district of the greatest rainfall. These streams are tidal, and sometimes navigable towards their mouths. Most of them are locally known as bayous. In general, the rivers of Texas are not adapted for irrigation or navigation. Neither do they afford much available water power north of Austin.

The entire geologic series, with a few exceptions, is represented in Texas. The earlier Palæozoic rocks, including the pre-Cambrian (Keweenawian ; A in accompanying geological map), the Pots­dam (oc), and the Ordovician (oc), up to the Trenton, underlie the State, but are only exposed in two limited districts. The first of these is in the counties of Mason, Llano, Burnet, and San Saba in the central region ; the other is in the disturbed mountainous portion of the trans-Pecos region. The Cambrian was deposited horizontally upon the upturned Keweenawian, and the Ordovician appears to rest conformably upon the Cambrian (Potsdam) ; but there was a continental elevation of the whole region, probably commencing at the close of the Trenton epoch, which continued until the beginning of the Coal-measure epoch, for the Upper Silurian, Devonian, and Sub-Carboniferous are absent, and the earlier rocks are disturbed. These earlier Palæozoic sediments present no marked stratigraphical or palæontological differences from the same formations throughout the continent, and thus show the widely distributed uniformity of conditions which then existed. At the commencement of the Carboniferous period, how­ever, that marked difference of faunal, lithological, and strati­graphical features began which distinguishes the synchronous deposits of the later formations of the western and eastern portions of the United States. The Texas region has been the transition ground, and hence all the geologic deposits, beginning with the Carboniferous, have two faces, dependent upon their geographical position east or west of 100° W. long., and representing the sedi­ments either of interior continental basins or of the waters of the Atlantic during alternating periods of submergence and emergence. The Carboniferous rocks, and most of the succeeding formations, are exposed in two widely separated portions of the State, with entirely different lithological and faunal aspects. The mutual re­lations of these series have never been traced. The first occurs in the central region between 970 and 100° W. long., north of the Colorado river, and consists of clays, sandstones, conglomerates, limestones, and coal seams of workable thickness. It is the south­western prolongation and termination of the Coal-measures of the eastern United States. These rocks, although in general similar to them, differ in some respects from those of the same formation further east, and also exhibit a few resemblances to the strictly marine Carboniferous of the Rocky Mountain region (K2), To the other series belongs the trans-Pecos Carboniferous (K1). Although this is of the same geologic age as the eastern Coal-measures, it is a purely marine deposit of limestones and sandstones, and is barren of vegetable remains. It is exposed along the Guadalupe and other mountains of the trans-Pecos region, forming the most eastern outcrops of the non-coal-bearing Carboniferous of the west. The study of the areal distribution and relation of the strata intervening between the Carboniferous and the fully-identified Cretaceous in Texas has not been begun. The Permian, Triassic, and Jurassic, if they exist, have not been clearly diagnosed, although these names have been applied to the series of rocks west of the central Carboniferous region. The thickness of the sediments belonging to these undetermined strata is very great. They are mostly un­fossiliferous, and the presence of stratified gypsum and other salts indicates that they were laid down in an interior basin cut off from oceanic waters and were too highly concentrated for the existence of molluscan life. Certain of these deposits, known as “ red beds ” or “Jura-Trias” (jt), extend beneath the Llano Estacado, across New Mexico, and into Arizona. The Cretaceous is by far the most conspicuous and extensive of the geologic formations of the State. It once covered the entire territory, but has been eroded away in many places west of the black prairie region, exposing the older formations, and is covered to the east of that region by more recent deposits. From the fact that the lowest member of the series is found resting directly upon the pre-Cambrian in Llano county, the Carboniferous in Lampasas and the counties northward, the Silurian in the trans-Pecos region, and the Jura-Trias beds in the plains region, it is evident that its beginning marked a period of conti­nental submergence, and that this submergence, from the great thickness of pelagic sediments in it, was long continued. The lowest member of the series, the oldest known of the American Cretaceous, is unknown elsewhere in the United States, and its peculiar features give individuality to the central region. This member (cn), which may be called the Texas group, is the equiva­lent of the Neocomian of Europe, and many of its fossils are common to Europe and America. It is not exposed east of the central region, except (probably) in the salines of Louisiana. There was a great elevation of this deep-sea formation at its close, as is attested by the shallow water sediments of later groups deposited unconformably upon it. The Middle (cc, cs1) and the Upper Cretaceous (cs2 and cs1) are also well exposed. The black prairie region is under­lain by the middle and upper groups of the marine Cretaceous characteristic of the other Gulf States and known as the Rotten Limestone (cs1) and Ripley (cs1) groups. The Cretaceous groups of the Rocky Mountain region extend into Texas, and are exposed in the trans-Pecos region and along the lower Rio Grande. The