THE UNIVERSITY OF TEXAS
BUREAU OF ECONOMIC GEOLOGY
AUSTIN 12

MINERAL RESOURCE CIRCULAR
NO. 34

(Typeset from original stencil February 1981)

Representative Sections of the Ellenburger Group in Central Texas[1]

V. E. Barnes[2] and P. E. Cloud, Jr.[3]

June 14, 1945

The Cherokee Creek section in San Saba County, described by Cloud, and the Honeycut Bend section in Blanco County, described by Barnes, together display a representative sequence of all the Ellenburger rocks known to be present in the Llano region. The Ellenburger group, comprising from base to top the Tanyard, the Gorman, and the Honeycut formations, is described elsewhere,[4] and the reader is referred to that publication for general stratigraphic detail.

Although complete and unbroken from the Cambrian to the Mississippian, the Cherokee Creek section displays only 142 feet of Honeycut strata. It is, in fact, necessary to go to Honeycut Bend on Pedernales River to find the Honeycut formation at its maximum thickness of 678 feet. The composite sequence of Ellenburger rocks formed by the Cherokee Creek and Honeycut Bend sections is generally representative, especially for the eastern part of the Llano region, and will serve for an introduction to the Ellenburger group. In the west facies differences introduce complications.

Cherokee Creek Section

The Cherokee Creek section is the only one known on the basis of detailed mapping to expose an unbroken sequence of rocks of the Ellenburger group that is complete from the Cambrian to the unconformably overlapping post-Ellenburger rocks. Due to thick vegetation and poor exposures, frequent lateral shifts are required in traversing a route that gives satisfactory exposures of the entire sequence, but enough recognizable beds were traced laterally to justify reasonable assurance that the section measured is essentially continuous and unfaulted. Other sections in the Llano uplift offer better exposures, but no section believed to be reliable is more compact. Moreover, the Cherokee Creek section is especially important to the surface stratigraphy of the Ellenburger group, for it was here that the detailed sequence of the rocks and faunas was first worked out; and the formational and member subdivisions delineated here were later carried, with modifications, to other parts of the Llano region. Aside from the poor exposures in some intervals, its principal deficiency as a display section is that it exposes only 142 feet of the Honeycut formation, as compared to a maximum known thickness (at the surface) of 678 feet in the type section of this formation at Honeycut Bend on Pedernales River in Blanco County.

The Cherokee Creek section was first measured and described by Cloud and R. L. Heller in March, 1944. At the same time it was sampled by Leo Hendricks and A. J. Crowley; while V. E. Barnes and L. E. Warren ran a plane-table traverse for control, furnishing the basis for adjusted measurements. Subsequent experience with other sections and improvements in technique made redescription of the section desirable; and it was accordingly restudied, remeasured, and redescribed by Cloud in March, 1945, using base control taken from the earlier plane-table traverse by Barnes and Warren.

The section described is shown on a large scale map of a part of the Cherokee area[5] by a line of narrow chevrons whose apexes point up in the section. Lateral shifts are indicated by dotted lines except where self-evident or where necessarily short and numerous, and in the latter event the line of section is generalized on the map. On the ground the original line of traverse is marked by closely spaced yellow paint spots and arrows beginning at the 6th cattle guard northeast (4.5 miles by speedometer) from State highway No. 16 at Cherokee on the road from Cherokee to the San Saba-Chappel road. An alternate line of traverse was painted up from and above the first long lateral shift (on the X bed), parallel to it and just below the contact of the Threadgill and Staendebach members of the Tanyard formation; following a route which displays the cherts of the upper part of the Threadgill member better than the described section. Painted lines of lateral shift do not follow the actual datum traced where it follows a circuitous or difficult route. On redescription of the section the same line of traverse was followed, and in addition orange spots were painted at 5-foot intervals to facilitate sampling by those interested in detailed studies. The footage is marked at least every 50 feet, more closely in the upper part of the section where the route is difficult, and on all beds that were traced laterally.

---

[1]An advance publication prepared under cooperative arrangement between the Bureau of Economic Geology, The University of Texas, and the Geological Survey, U. S. Department of the Interior. Published with the permission of the Director, Geological Survey, U. S. Department of the Interior.

[2]Geologists, Bureau of Economic Geology, The University of Texas.

[3]Geologist, Geological Survey, U. S. Department of the Interior.

[4]Cloud, P. E., Jr., Barnes, V. E., and Bridge, Josiah, Stratigraphy of the Ellenburger group in central Texas, a progress report: Univ. Texas Pub. 4301, 1943 [1945], (in press).

[5]Cloud, P. E., Jr., Barnes, V. E., and Bridge, Josiah, *op. cit.*

The Cherokee Creek section as given below includes only strata of the Ellenburger group restricted. Its top is immediately below the thin unnamed chert breccia at the base of the Mississippian, and its base is immediately above the highest fine to very fine-grained, interstitially glauconitic, relatively dark-colored Pedernales dolomite member of the Wilberns formation (uppermost Cambrian). Earlier concepts would have included both the Pedernales dolomite and San Saba limestone members of the Wilberns under the group term Ellenburger. Although these units cannot satisfactorily be measured as a continuation of the section given, measurements southeast of the Harris ranch headquarters, in the southeast corner of the map of the Cherokee area (2.6 miles south of the 7th cattle guard), show that approximately 90 feet of the Pedernales and 140 feet of the San Saba strata are present here.

The descriptions which follow are arranged with the intention of supplying reasonably detailed information in a logical and consistent sequence. The Cherokee Creek section, as described, can be followed either from top to bottom or from bottom to top, but in the field it will be found easier to keep track of the paint spots if it is followed from bottom to top.

Description	*Thickness* Interval	Cumulative	*Feet above base*
Ellenburger group: 1128 feet thick			
Honeycut formation: 142 feet thick			
1. Limestone, with minor dolomitic inclusions and with 1 to 2 inches of dolomite at the top (altitude 1372 feet at top of section)—the limestone is sublithographic, in part a fine pellet limestone; pearl gray to light pinkish gray. The thin dolomite bed at the top is fine grained and nutria to olive-brown. Bedding indeterminate. Weathers rough, in part reticulate; medium bluish gray. Silicified fossils present are *Archaeoscyphia* sp., *Ceratopea* cf. *C. capuliformis* Oder, and the siphuncle of a brevicone cephalopod cf. *Mcqueenoceras* (TF-95).	3.5	3.5	1124.5-1128
2. Dolomite—very fine grained to microgranular olive-brown to yellowish brown and nutria. Seems to be a single ledge. Weathers smooth, brownish gray.	1.5	5	1123-1124.5
3. Limestone, dolomitic in the lower 3 to 4 feet—the limestone is sublithographic, varying to a fine pellet limestone; pearl gray to woodash gray, in part with irregular yellowish argillaceous films. In the lower 3 to 4 feet fine grained, yellowish gray to brownish olive dolomite forms a matrix for about an equal proportion of limestone inclusions, whereas in the upper beds dolomite is a minor component. Beds 1 to 13 inches thick and poorly exposed. Weathers uneven, reticulate in the lower part; medium gray to bluish gray. Chert occurs as irregular inclusions and nodules at 1107 feet and as scattered partially calcitic cannonballs above 1120 feet. The chert at 1107 feet is semichalcedonic, oolitic to crypto-oolitic; in part pseudospicular and in part actually showing the spicular structure of the sponge *Archaeoscyphia;* brownish to bluish gray to white. Fossils collected along the trace of the top few feet of this interval are *Ceratopea capuliformis* Oder, *Orospira* sp., *Hormotoma* sp., *Ophileta* sp. (TF-95a).	21	26	1102-1123
4. Dolomite, grading to calcitic dolomite and minor limestone in the upper 2 feet—very fine grained to microgranular; beige to light grayish yellow, with pinkish mottles; beds from less than 1 inch to 18 inches thick. Weathers uneven, medium gray to pinkish gray; mostly covered in upper 2 feet.	11	37	1091-1102
5. Limestone—sublithographic, in part a fine pellet limestone; pearl gray; bedding indistinct. Weathers irregular, medium bluish gray. Partially to largely chertified cannonballs are abundant in this interval. Fragments of fossils occur in the cannonballs and a small brevicone cephalopod was seen in the limestone.	1	38	1090-1091
6. Dolomite, in part calcitic—very fine grained, beige with occasional pink streaks, bedding indeterminate. Weathers irregular, medium gray.	3	41	1087-1090
7. Limestone—sublithographic; pearl gray to woodash gray, with irregular greenish to yellowish argillaceous films; beds from a fraction of an inch to a few inches thick. Weathers smooth, platy, medium to light bluish gray. Chert concretions and lenses ranging from the size of a walnut to that of a small watermelon are abundant in the lower 3 feet. It is chalcedonic to subporcelaneous; irregularly variegated and in part laminated in tones of bluish gray, brown, and white; and weathers in part to a chalky texture.	4	45	1083-1087
8. Limestone, with occasional dolomitic inclusions and in part slightly dolomitic—sublithographic, varying to fine grained where dolomitic, in part a fine pellet limestone and locally an intraformational breccia; pearl gray, grading to yellow and rose where dolomitic, and with irregular greenish and yellowish argillaceous films; beds from less than 1 inch to 12 inches thick. Weathers platy, medium gray and bluish gray; mostly covered from 1065 to 1070 feet.	28	73	1055-1083

Description	Thickness: Interval	Thickness: Cumulative	Feet above base
Minor chert occurs as nodules, lenses, and angular inclusions from 957 to 960 and 965 to 967 feet. It is subchalcedonic, bluish to brownish gray to white, and weathers shiny white to dull pinkish white. *Xenelasma syntrophioides* Ulrich & Cooper, *Ophileta* sp., and *Jeffersonia* sp. were collected (TF-102) from conglomeratic chert thought to weather out along the trace of this interval or the beds immediately below it.			
9. Limestone—sublithographic; pearl gray to woodash gray, with greenish to yellowish argillaceous films; a markedly thinly bedded interval with beds varying from a fraction of an inch to only a few inches thick. Weathers smooth, platy, medium gray; poorly exposed in upper part. Chert nodules occur at 1053 feet; being porcelaneous to semichalcedonic, white to light yellowish or brownish gray, in part concentrically banded.	6.5	79.5	1048.5-1055
10. Dolomitic limestone, grading upward to limestone—the lower foot is comprised of fine grained, grayish yellow dolomite, with occasional subround to angular inclusions of sublithographic, pearl gray limestone; and the limestone increases in proportion upward, being almost pure, except for irregular yellowish argillaceous films, in the top 10 inches. Weathers reticulate medium bluish gray. Chert is abundant for 1 to 2 inches at the top and bottom of the interval. That at the top occurs as fractured lenticles and thin, extensive lenses. It is chalcedonic, in part crypto-oolitic and pseudospicular; bluish gray to brownish gray and dirty white. That at the base is a thinly irregular layer of calcitic and oolitic chert or a chertified fine pellet layer. Fossils seen in the chert were poorly preserved *Ophileta* (?) and a low-spired *Euconia* (?).	1.9	81.4	1046.6-1048.5
11. Dolomite—fine grained; grayish brown and brownish gray, grading toward nutria, with minor lavender streaks; composed of one or two thin ledges. Weathers uneven, medium gray. Chert occurs as scattered small nodules. It is subchalcedonic to chalcedonic, bluish gray, and weathers dirty white.	0.6	82	1046-1046.5
12. Limestone, in part dolomitic—sublithographic, varying to fine grained where dolomitic; pearl gray to woodash gray, with rose, nutria, and lavender mottles and streaks where dolomitic. Beds from less than 1 inch to 10 inches thick. Weathers solution pitted to reticulate, medium bluish gray with darker gray reticulations.	4	86	1042-1046
13. Dolomite—very fine grained; grayish brown to rose gray, with rose and nutria mottles; a single ledge. Weathers hackly to smooth, medium brownish gray to yellowish gray. Subspheroidal, partially chertified, calcitic masses 1 to 8 inches in diameter represent the lowest well developed "cannonball chert" seen in place in this section. In addition rosettes and excrescences of fine grained quartz druse are common in this interval. A brevicone cephalopod and fragments of gastropods were seen in the chert.	3	89	1039-1042
14. Dolomite, in part calcitic and grading to dolomitic limestone at the base—fine grained; pinkish to yellowish gray to light gray; beds 1 to several inches thick, poorly exposed. Weathers platy, medium dark brownish gray.	3	92	1036-1039
15. Limestone, in part dolomitic toward top of interval—sublithographic, grading to fine grained where dolomitic, in part a fine pellet limestone or an oolite; pearl gray, with streaks and mottles of rose and dull orange where dolomitic; beds 1 to 17 inches thick. Weathers to regular, solution pitted, medium bluish gray ledges. A few partially silicified cannonballs, the lowest recorded from the section, were seen at 1030 to 1031 feet, and chert float occurs in the upper part of the interval. This chert float is partly semichalcedonic and oolitic and partly a granule conglomerate. It is white to light gray in color. Small, rounded, frosted sand grains were seen in some of the chert and limestone float in the upper part of the interval. Fossils were collected from cannonball chert weathering out along the trace of this interval or near it. They are *Xenelasma syntrophioides* Ulrich & Cooper, and a species of *Jeffersonia* (TF-103). Also a few poor unidentified calcitic snails were seen in place.	13	105	1023-1036

Description	Thickness: Interval	Thickness: Cumulative	Feet above base
16. Dolomitic limestone and calcitic dolomite—fine grained; light gray to light pink, varying to light greenish gray and light yellow; beds 1 to 6 inches thick. Weathers platy, medium dark brownish gray.	4.5	109.5	1018.5-1023
17. Limestone, with irregular dolomitic inclusions and in minor part dolomitic—sublithographic, grading to fine grained where dolomitic, in part a fine pellet limestone; woodash gray to pearl gray, with pinkish mottles and streaks where dolomitic; beds from less than 1 inch to 30 inches thick. Weathers solution pitted, medium bluish gray. Chert occurs as scattered nodules in a thin calcitic dolomite bed at 1024 feet, being chalk textured to porcelaneous, locally oolitic, white, and white weathering.	6	115.5	1012.5-1018.5
18. Dolomitic limestone and calcitic dolomite—fine grained, grading to sublithographic where the limestone is pure; brownish gray to light rose pink and pearl gray; beds from less than 1 inch to 32 inches thick. Weathers rough, medium gray.	3.5	119	1009-1012.5
19. Limestone, in part dolomitic—sublithographic, grading to fine grained where dolomitic; pearl gray to woodash gray, with irregular greenish argillaceous films and with occasional pink streaks where dolomitic; beds from less than 1 inch to 11 inches thick. Weathers solution pitted, in part reticulate, medium bluish gray.	7	126	1002-1009
20. Dolomite—microgranular to fine grained; beige to light yellowish gray and light pink; beds heavy, weathering 1 to 42 inches thick. Weathers smoothly irregular to hackly, medium to dark gray. Chert weathers from the covered basal 2 feet of the interval as loose nodules and excrescences on slabs of dolomite. It is chalcedonic to subchalcedonic, in part oolitic, bluish to brownish gray to brown and white.	10	136	992-1002
21. Limestone, with irregular dolomitic inclusions—sublithographic, grading to medium grained where dolomitic; pearl gray with pink streaks. A 10-inch bed is exposed at the base, with the remainder of the interval covered. Weathers reticulate, medium bluish gray.	1.5	137.5	990.5-992
22. Dolomite, grading to dolomitic limestone in the upper foot and going laterally to dolomitic limestone away from the line of section—fine grained to microgranular, light yellowish gray to beige. Consists of a single ledge that weathers to thinner beds along the trace of the interval. Weathers rough, in part pitted, medium gray to iron gray. Sandy chert, chert matrix sand, and arenaceous dolomitic limestone occur sporadically along the trace of this interval; but no sand was detected in the line of section.	4.5	142	986-990.5
Base of Honeycut formation at base of interval 22.			
Total thickness of formation 142 feet.			
A short lateral shift is made on the Gorman-Honeycut contact, moving north if going up in the section and south if going down.			
Gorman formation: 426 feet thick *Calcite facies: 275 feet thick*			
23. Limestone of remarkable purity—sublithographic to lithographic, in part a fine pellet limestone; pearl gray to woodash gray, with occasional pinkish mottles and streaks; and in part with irregular yellowish to greenish argillaceous films; beds ranging from a fraction of an inch to 7 feet thick. The beds in this interval are characteristically massive and the greater part of its thickness is accounted for by beds over 18 inches thick, interrupted by an occasional thin sequence of very thin beds. Weathers smooth to solution pitted, medium bluish gray. Characteristically resistant to weathering, these beds form the upper part of Bee Cave Bluff, on the southeast side of Cherokee Creek. The limestone in this interval appears to be the purest as well as the most massively bedded in the Cherokee Creek section, visible dolomite grains being a very minor constituent. Moreover, a corresponding interval of unusually thick bedded and pure limestones averaging 40 to 60 feet thick, and locally with a dolomitic interval near the middle, seems to occur at the top of the Gorman formation throughout the Llano region.	41.5	183.5	944.5-986

Description	Thickness: Interval	Thickness: Cumulative	Feet above base
Chert was seen in place in the line of section only as minor irregular inclusions at 978 feet, where it is chalcedonic to subchalcedonic and bluish gray to white. It occurs in other beds along the trace of this interval where they are better exposed to weathering, but is generally uncommon. Silicified specimens of *Xenelasma syntrophioides* Ulrich & Cooper occur on the upper surface of the top ledge of this interval at the top of Bee Cave Bluff (986 feet above base of section), and cross sections of *Roubidouxia* and *Lecanospira* are not uncommonly associated with this brachiopod at the same horizon along its trace; but no fossils were collected at this horizon in the southeast fault block of the Cherokee area. Several partially silicified specimens of *Lecanospira* were noted in the limestone at 978 feet but not collected. *Lecanospira, Hormotoma, Ophileta,* small unidentified gastropods, and a small trilobite were collected from rough chert weathering from the middle of this interval along its trace (TF-96); and *Lecanospira* and *Roubidouxia* were collected from the limestone 3.5 to 4.5 feet above the base of the interval (TF-94).			
24. Dolomite, grading laterally to limestone with irregular dolomitic inclusions—the dolomite is fine grained, in part vuggy; light gray to light pinkish gray, locally grading to rose and nutria. The limestone is sublithographic; pearl gray to woodash gray, with irregular yellowish argillaceous films. The beds range from less than 1 inch to 17 inches thick. Weathers rough, in part pitted; medium gray to iron gray where dolomite; reticulate and medium bluish gray where limestone.	7.5	191	937-944.5
25. Limestone, in part with irregular dolomitic inclusions—sublithographic, grading to fine grained where dolomitic, in part a fine pellet limestone; pearl gray to woodash gray, with pinkish and brownish streaks where dolomitic, and in part with irregular yellowish argillaceous films; beds from a fraction of an inch to 25 inches thick, being very thin in the top 18 inches. Weathers solution pitted, in part reticulate, medium bluish gray.	7.5	198.5	929.5-937
26. Dolomite, grading to calcitic dolomite in the top few feet—very fine grained to medium grained; beige and rose beige to light pinkish, yellowish, and brownish gray; beds from less than 1 inch to 24 inches thick. Weathers smooth, medium gray to light pinkish gray and light pink. Occasional guano-like patches of chalk textured chert were seen from 921 to 923 feet; and minor interstitial chert occurs.	15.5	214	914-929.5
27. Limestone—sublithographic; pearl gray, with irregular yellowish argillaceous films; beds from less than 1 inch to 10 inches thick. Weathers solution pitted, medium bluish gray.	1.5	215.5	912.5-914
28. Dolomite, grading to calcitic dolomite and dolomitic limestone in upper part—fine grained to sublithographic; light pinkish to brownish gray, grading to beige and lavender, with occasional pink streaks. Bedding indeterminate. Weathers rough, medium to dark gray.	3	218.5	909.5-912.5
29. Limestone—sublithographic, in part a fine pellet limestone; pearl gray, with irregular yellowish and greenish argillaceous inclusions and minor pink streaks, beds up to 10 inches thick. Weathers smooth to solution pitted medium bluish gray to light gray.	5	223.5	904.5-909.5
30. Dolomite, with interbeds of calcitic dolomite, dolomitic limestone, and limestone—the dolomite is fine grained and gray to light pinkish and yellowish gray; whereas the limestone is sublithographic and pearl gray, grading to the colors of the dolomite where dolomitic. Beds from less than 1 inch to 24 inches thick. Weathers uneven to reticulate; medium gray to iron gray where dolomitic and medium to light bluish gray in the calcitic portions. Small nodules of chert are common in the lower foot; being semiporcelaneous, micro-oolitic to crypto-oolitic; dull gray to brownish gray and white. Interstitial chert also occurs in some beds.	12.5	236	892-904.5
31. Limestone, with minor irregular dolomitic inclusions—sublithographic, grading to fine grained where dolomitic; pearl gray, grading to pink where dolomitic, and with irregular yellowish argillaceous films; a single ledge weathering in part slabby. Weathers reticulate, medium bluish gray to gray.	1	237	891-892
32. Dolomite, grading to calcitic dolomite and dolomitic limestone at the base—microgranular to fine grained; light yellowish gray to beige, with mottles of darker gray or pink; beds mostly covered in the lower half, bedding indeterminate. Weathers to irregular medium gray to iron gray ledges in the upper part.	6	243	885-891

Description	Thickness: Interval	Thickness: Cumulative	Feet above base
Small nodules of chert are abundant in the upper part of the interval; being semichalcedonic to porcelaneous, dull white to light bluish or brownish gray.			
33. Limestone—sublithographic, in part a fine pellet limestone; pearl gray to woodash gray, grading to light brownish gray and flesh-colored, with occasional pink streaks and small pink specks and locally with abundant irregular greenish to yellowish argillaceous films; beds seemingly several feet thick in ledges but weathering from less than 1 inch to 18 inches thick. Weathers solution pitted, medium bluish gray. Chert occurs as scattered nodules at the base of the interval; being semichalcedonic and bluish gray to dull white. Small patches of chalk-textured guano-like chert were noticed at 874 feet and scattered nodular chert floats into the interval.	25	268	860-885
H bed at 860 feet—altitude 1366 feet on the southeast bank of Cherokee Creek and 1471 feet at its south end, which is about 1400 feet south-southeast of its position in the bluff segment of the section and just west of a fault. Shift 1400 feet north-northwest if going up in the section and south-southeast if going down. (The exact trace of bed H is uncertain for the south 400 feet; but a check measurement between bed H and the sandy interval called bed F from a point 340 feet south-southeast of Cherokee Creek substantiates the approximate position determined by topographic tracing. The arenaceous bed F was traced from the line to section to the check point.)			
34. Limestone—sublithographic; pearl gray to mouse gray, grading to woodash gray, in part with pink tinges and spots and in part with abundant irregular greenish to yellowish argillaceous inclusions; beds from a fraction of an inch to 10 inches thick. Weathers solution pitted, in part platy, medium bluish gray. Upper bed of interval is bed H. Minor chert occurs as angular inclusions at 849 feet; being subporcelaneous, slightly oolitic, pinkish gray to brownish gray. Scattered small sand grains were seen in the chert and limestone at 859 feet.	18.5	286.5	841.5-860
35. Dolomite, grading to calcitic dolomite in the upper foot—microgranular to fine grained; mostly light gray, grading to light brownish and yellowish gray. Bedding indistinct, beds as much as 14 inches thick. Weathers smooth, medium gray to iron gray.	7.5	294	834-841.5
36. Limestone, in part dolomitic in the upper 4 feet—sublithographic, grading to medium grained where dolomitic; woodash gray to pearl gray, with irregular yellowish to whitish argillaceous films and occasional pink streaks, grading to light rose pink where dolomitic; beds 2 to 10 inches thick. Weathers to discontinuous, solution pitted, medium bluish gray ledges. Chert was observed as occasional small nodules and excrescences above 813 feet, being subchalcedonic to chalcedonic, and bluish to brownish gray to white. At 822.5 to 823 and again at 827 feet are thin plates or beds of oolitic chert of a bluish to brownish gray to light brown or dull white color and containing scattered sand grains. Concentrically banded concretionary chert comes in along the trace of the beds at 812 feet and rough ropy chert along the trace of those at 811 feet. Tiny subrounded to rounded and frosted sand grains are abundant in limestone and oolitic chert from 822.5 to 823 feet, a 2- to 4-inch layer of arenaceous limestone and oolitic sand-bearing chert occurs at 827 feet and scattered grains of sand were seen in the limestone at 830 feet.	24	318	810-834
G bed at 810 feet, shift east-southeast if going up in the section and west-northwest if going down.			
37. Limestone, with a 4-inch arenaceous zone at the base—sublithographic; woodash gray to pearl gray, with scattered pink streaks and small pink spots, and in part with irregular yellowish to greenish argillaceous films; beds from less than 1 inch to 16 inches thick. Weathers to regular, smooth to solution pitted, medium bluish gray ledges. Rough, ropy fossiliferous chert comes into the lower part of this interval along its trace to the north-northwest. The 4-inch chert matrix sandstone (bed F), which occurs at the base of this interval in the line of section, grades laterally to arenaceous chert, calcareous sandstone, and arenaceous limestone. This arenaceous zone is persistant in the southeast fault block of the Cherokee area and makes a useful datum there.	12	330	798-810

Description	Thickness: Interval	Thickness: Cumulative	Feet above base
The sand grains are predominantly rounded to subrounded, frosted, and uniformly very small, but large grains are not uncommon and quartz granules occur sporadically. The chert matrix is oolitic, and dull white, pearl gray, flesh-colored, or even rose gray on a fresh surface; weathering to shades of yellowish tan. The limestone matrix is woodash gray to pearl gray, or mottled in pearl gray and cinnamon pink; weathering medium to light bluish gray or white. Poorly preserved fossils collected from the ropy chert that comes into the lower part of this interval from a point about 600 feet north-northwest of its inferred position in the measured section are *Hormotoma, Lecanospira*?, *Chepultepecia*?, and unidentified gastropods and cephalopods (TF-98). Also *Hystricurus* sp. (a single cephalon) was collected from the F bed along its trace to the north-northwest (TF-97).			
F bed (arenaceous) at 798 feet, shift 150 feet east-southeast if going up in the section and west-northwest if going down.			
38. Limestone—sublithographic, in part a fine pellet limestone; pearl gray to woodash gray, with sporadic pink streaks and small pink specks, and in part with irregular greenish to yellowish argillaceous films; beds from less than 1 inch to 14 inches thick. Weathers to fairly regular, smooth or solution pitted, in part platy, medium bluish gray ledges. Very minor chert occurs as insignificant excrescences on the lower beds.	11	341	787-798
39. Limestone—sublithographic, in part a pellet limestone; woodash gray to pearl gray, in part with scattered small pink spots and irregular yellowish argillaceous films; beds from less than 1 inch to 8 inches thick. Weathers smooth, medium bluish gray. Chert occurs as scattered irregular patches; being chalk textured to subporcelaneous and chalk white to bluish and brownish gray. It weathers dull white and that in the lower part especially has a guano-like appearance. *Archaeoscyphia* occurs in interval 39 (TF-99) as worn and broken fragments which ordinarily have no distinguishing external characters and are not recognizable as fossil remains until broken and wetted, when the spicular structure of the sponge wall is evident. This interval is an important datum and was traced across the main fault block of the Cherokee area as well as several minor fault blocks; the guano-like chert serving to call attention to it and the spicular structure of *Archaeoscyphia* identifying it.	3	344	784-787
40. Limestone—sublithographic; pearl gray to woodash gray, locally with scattered pink streaks and small pink specks, and in part with irregular yellowish to dusty green or white argillaceous films; beds from less than 1 inch to 22 inches thick. Weathers smooth, medium to light bluish gray. Minor chert occurs as nodules and lenticles at 778 feet, as occasional large spheroidal masses at 782 feet, and as float. It is subchalcedonic to subporcelaneous or chalk textured, bluish gray to bluish white and chalk white, and weathers yellowish white. In dolomite float at the base of the interval occur lenticles of semichalcedonic to porcelaneous, in part micro-oolitic, bluish gray to white and dull carnelian chert.	16	360	768-784
41. Dolomite—fine grained; light gray to light pinkish gray, beige, rose beige and rose; bedding indeterminate. Weathers to discontinuous, medium to light gray ledges. Minor interstitial chert was seen. Sand grains of pinpoint size were seen to be abundant in one piece of dolomite float at the base of the interval. Silicified *Lecanospira* was seen and the siphuncle of an endoceroid cephalopod was collected (TF-90) 700 feet southeast of the line of section, from a limestone which is either the lateral equivalent of interval 41 or belongs to the immediately superjacent or subjacent beds.	4	364	764-768
42. Limestone, with minor irregular dolomitic inclusions—sublithographic, grading to fine grained where dolomitic, in part a pellet limestone; pearl gray to woodash gray and light brownish gray, in part with irregular whitish argillaceous inclusions; beds thin but bedding indeterminate. Weathers to discontinuous, smooth to rough, medium bluish gray ledges. Chert occurs as ropy layers, irregular nodules, and rough excrescences; abundant in place in the upper 4 feet and in the float below. It is chalcedonic	14	378	750-764

Description	Thickness: Interval	Thickness: Cumulative	Feet above base
to porcelaneous, in part chalk textured, in part crypto-oolitic to oolitic, and in part apparently a chertified pellet limestone with a texture approaching that of the cannonball chert. Locally it is quartzose; and the color varies through bluish gray, brownish gray, pearl gray, and china white. *Syntrophinella* cf. *S. typica* Ulrich & Cooper was seen in place in chert at the top of interval 42, as were also small trilobites and gastropods; but none were collected.			
E bed at 750 feet, shift 120 feet east-southeast if going up in the section and west-northwest if going down.			
43. Dolomite, as judged from float in a largely covered interval; grading to calcitic dolomite and dolomitic limestone at the top, and apparently going laterally to limestone in the upper beds—predominantly microgranular, grading to fine or even medium grained in the upper part; mouse gray, yellowish gray, beige, and rose beige, locally grading to salmon or coral pink. The minor exposures and scattered float cobbles weather smoothly uneven, light to medium gray and tan. Minor chert float in the upper part of the interval is in part a granule breccia. It is subchalcedonic to subgranular, in part with quartzose inclusions; varies through bluish gray, brownish gray, tan and pearl gray; and weathers dull orange or bluish white. Interstitial chert occurs in some of the dolomite.	20	398	730-750
44. Mostly limestone, as judged from float in a largely covered interval; in part with irregular dolomitic inclusions—mostly sublithographic, grading to medium grained where dolomitic, in part a pellet limestone; woodash gray to pearl gray and white, with sporadic small pink spots. Exposed rock weathers smooth to rough and medium bluish gray. Chert is abundant below 715 feet as large blocks, and not uncommon as excrescences, surficial coatings, and angular blocks above. It is semiporcelaneous to subgranular, commonly oolitic to crypto-oolitic, in part with drusy vugs, commonly finely drusy on broken surfaces, white to brownish gray. Some ooids are white in a brownish gray matrix and some of the so-called oolitic chert may represent chertified pellet limestone.	19	417	711-730
Base of calcitic facies of Gorman formation at base of interval 44. Total thickness of facies 275 feet.			
Dolomitic facies; 151 feet thick			
45. Dolomite, as judged from float and poor exposures in a mostly covered interval; grading to calcitic dolomite and dolomitic limestone at top—mostly microgranular in lower 22 feet, grading to fine and medium grained in upper 11 feet; rose beige, beige, rose, rose gray, and light yellowish gray to coral pink; bedding indeterminate. Weathers to a mostly covered interval strewn with smooth, light to medium gray and yellowish gray cobbles of dolomite. Scattered to abundant chert weathers from this interval, especially in the lower 20 feet; being porcelaneous to subgranular or chalk textured, with scattered tiny dolomoids, in part quartzose, china white to bluish or yellowish gray. *Euconia* sp. (TF-69a) was collected from chert along the trace of this interval.	33	450	678-711
D bed (arenaceous) at 678 feet, shift 700 feet southeast if going up in the section and northwest if going down.			
46. Dolomite—mostly microgranular, in part grading to very fine grained; light yellowish and pinkish gray to beige and rose beige, with rose mottles; bedding indeterminate. Weathers to discontinuous ledges in a largely covered and rubble strewn surface; the ledges and float cobbles being smooth, medium to light gray and yellowish gray. Scattered angular inclusions, nodules, and plates of chert occur at 662 feet and in the upper 3 feet of the interval. It is subchalcedonic; in part crypto-oolitic and pseudospicular; varies through bluish gray, brownish gray, white, rose, and light pink; and weathers shiny white to pinkish white. Irregular plates and coatings of fine to medium grained quartz druse are common in the upper 3 feet. Porcelaneous, china white, in part finely dolomoldic chert may weather out of the upper part of this interval, but it more probably floats down from above.	23.5	473.5	654.5-678

Description	Thickness: Interval	Thickness: Cumulative	Feet above base
Sand occurs in the upper foot of interval 46 (bed D); constituting an arenaceous dolomite in the line of section, but grading laterally to dolomitic sandstone with tiny rounded to subrounded and frosted sand grains which in general are not well sorted within their small size limits. In color it ranges through tones of beige; varying to white where bleached or brick red to russet where oxidized, and weathering to medium tones of gray and tan. Bed D is fairly persistent and was traced the breadth of the southeast block of the Cherokee area as an arenaceous zone varying from 5 inches to about 2 feet thick. Fossils were collected from chert float along the trace of the upper part of this interval, but the chert was probably derived from interval 45. They are *Euconia* sp., *Ophileta* sp., and *Raphistominal*? sp. (TF-69).			
47. Dolomite, in minor part grading to calcitic dolomite and dolomitic limestone in the lower 5 feet—mostly fine to medium grained, grading to microgranular from 638 to 643 feet; yellowish gray, grayish yellow, rose gray, and light rose, in part grading to medium gray; beds 1 to 12 inches thick. Weathers to uneven, medium gray ledges. Chert is abundant in the lower 5.5 feet as thin plates, angular inclusions, excrescences, and surficial coatings; varying from subgranular to subporcelaneous, white, and white weathering chert to dolomoldic and finely drusy chert or films of fine grained quartz druse. Interstitial chert is abundant in the dolomite of the lower 5.5 feet and occasional above.	22	495.5	632.5-654.5
48. Dolomite—mostly microgranular, but with a few thin beds that are medium to fine grained; mostly beige to light yellowish gray, grading to rose beige, light rose, and cinnamon pink; bedding indeterminate. Weathers to discontinuous, medium gray ledges alternating with largely covered portions. Minor coatings of fine grained quartz druse were seen in place, and interstitial chert occurs in the medium grained beds. Angular chips of chert float of uncertain derivation occur in fair abundance; being principally porcelaneous to chalk textured, locally quartzose, and having scattered tiny dolomolds and occasional cavities lined with dolomolds. It is china white to woodash gray or pinkish white and weathers shiny white to dull tan.	27.5	523	605-632.5
C bed at 605 feet, shift about 210 feet north-northwest if going up in the section and south-southeast if going down. This shift is made on the basis of a zone of billowy surfaced chert lenses or plates an inch or two thick and up to 10 inches across (projected for about 50 feet at the north end of the shift) that weather out about 5 feet above the bed marked C. This chert varies from semichalcedonic to porcelaneous, subgranular, and locally chalk textured, and is generally crowded with indistinct pin point inclusions. It is bluish to brownish gray to chalk white in color, in part concentrically banded, and weathers yellowish white to tan or white.			
49. Dolomite—microgranular to medium grained; consisting of microgranular to very fine grained dolomite (total of 10 feet) interbedded with medium to fine grained dolomite (total of 8 feet). The color is rose beige, beige, and rose gray, grading to pinkish and yellowish gray. Bedding indeterminate, beds poorly exposed. Weathers to alternating, thin, medium gray to light yellowish gray or tan ledges and covered portions. Coatings of fine to medium grained quartz druse are common throughout the interval, and interstitial chert characterizes the medium grained beds. Occasional nodules of chalcedonic to porcelaneous chert also were seen, and along the trace of the lower foot of the interval abundant angular pieces of chert may be found. This lower chert is mostly porcelaneous, grading to subgranular and semichalcedonic; white to bluish gray; and weathers shiny white or yellowish white.	18	541	587-605
50. Calcitic dolomite, in part grading to dolomitic limestone—medium grained, light pinkish gray to light gray, bedding indeterminate. Weathers rough, medium gray, poorly exposed. Interstitial chert and small patches of chalk textured chert are occasional throughout. Coatings of rough, dark weathering quartz druse were seen near the base of the interval.	5	546	582-587
51. Dolomite—microgranular to fine grained, locally with a few scattered vugs; beige to light yellowish gray, varying to rose gray and light grayish yellow, in part with rose to lavender streaks; bedding indeterminate. Weathers to a	17.5	563.5	564.5-582

Description	Thickness Interval	Thickness Cumulative	Feet above base
largely covered interval that is strewn with smooth or slightly pitted, medium to light gray weathering cobbles and has a few medium gray ledges exposed in the lower part. Chert float is abundant in the lower part of the interval and chert was seen in place between 568 and 572 feet as prominent layers, with occasional nodules above. From 570 to 572 feet the chert is chalcedonic to porcelaneous; bluish gray, brown, and china white; and weathers mostly shiny white. From 568 to 570 feet it is porcelaneous to subporcelaneous, with scattered small dolomolds and disseminated quartz, and commonly interlayered with a lesser amount of quartz druse; it is china white to woodash gray on a fresh surface except that where penetrated by oxidation in the drusy layers it is russet to dull brown. Interstitial chert occurs in the dolomite at 570 feet. *Roubidouxia* was found in the chert from this interval at locality TF-61.			
52. Dolomite—fine grained in the line of described section, but going laterally to microgranular dolomite as may be seen above the Tanyard-Gorman contact in the south segment of the section and intermittently along the trace of this interval. Light yellowish or pinkish gray to beige, with darker yellowish streaks. Bedding indeterminate. Weathers to a largely covered interval with a few thin medium gray ledges cropping out. Interstitial chert is fairly common, as well as float of blocky weathered chert in part apparently weathering from this interval and in part from above. Lateral tracing indicates that the locally derived chert is predominantly a type composed of irregularly interlayered or interlacing fine quartz druse and a lesser amount of porcelaneous china white chert with scattered small dolomolds. Generally similar chert from the interval stratigraphically above contains typical Gorman fossils. *Hystricurus* sp., *Euconia*?, and a well preserved but unidentified brevicone cephalopod were collected a foot or two above the base of this interval and the Gorman formation (TF-65) as traced beyond the line of section.	4.5	568	560-564.5
Base of dolomitic facies of Gorman formation at base of interval 52.			
Total thickness of facies 151 feet, and of formation 426 feet.			
Gorman-Tanyard contact at 560 feet—altitude 1473 feet in line of section southeast of county road and 1443 feet in line of section northwest of county road. Shift 1450 feet northwest if going up in the section and southeast if going down. (Because some of the lower microgranular dolomite of the Gorman formation and possibly some of the upper limestone of the Tanyard formation in the Cherokee area goes laterally to fine to medium grained dolomite along this contact, it is not a hair-line break as traced in the field; but evidence from lateral tracing closely limits its position and at no place along the 1450-foot shift are more than 4 or 5 feet of beds in question.)			
Tanyard formation: 560 feet thick *Staendebach member (type section): 300 feet thick* *Calcitic facies: 176 feet thick*			
53. Limestone; apparently pure from 540 to 556 feet, but with irregular dolomitic inclusions in the lower 10 feet and the top 4 feet—sublithographic, varying to medium grained where dolomitic, in part a fine pellet limestone; pearl gray to woodash gray, varying to flesh-colored where dolomitic, in part with minor pinkish tinges; beds 1 to 9 inches thick. Weathers uneven, reticulate where dolomitic, medium bluish gray. Chert is abundant in the lower 2.5 feet as layers or extensive lenses and plates strung out parallel to the bedding; being subchalcedonic to porcelaneous, bluish gray to china white, in part banded. Above the basal very cherty zone it occurs as occasional nodules, lenses, plates, and angular inclusions to the top of the interval, and as a thin layer at 339.5 feet; being chalcedonic to subgranular, in part oolitic to crypto-oolitic and pseudospicular, locally with quartzose inclusions and scattered dolomolds. A fresh surface is light bluish or brownish gray to brownish orange or white, in part laminated; whereas weathered surfaces are white to yellowish gray. The top few feet of the interval are marked by finely drusy and in part dolomoldic excrescences, vugs, and coatings and by oolitic to oomoldic laminar chert. *Ozarkina* was noted at several places along the trace of the upper part of this interval, locally accompanied by other fossils, but no fossils were noted or collected from these beds in the line of section.	30	598	530-560

Description	Thickness Interval	Thickness Cumulative	Feet above base
54. Limestone, with irregular dolomitic inclusions—sublithographic, grading to medium grained where dolomitic, and locally a fine pellet limestone; gray to light brownish or pinkish gray; beds 3 to 22 inches thick. Weathers uneven, locally reticulated; medium bluish gray. Chert was seen in place only in the lower 5 feet where it occurs as occasional platy to irregular inclusions. Here it is semichalcedonic to chalcedonic, in part oolitic, bluish gray to white.	19	617	511-530
55. Dolomite, slightly calcitic and in minor part grading to limestone—medium to fine grained, pearl gray with sporadic light pinkish spots; beds up to at least 30 inches thick. Weathers uneven, in part pitted, medium to medium dark gray. Chert occurs as scattered excrescences and irregular inclusions; being dolomoldic and finely drusy to semichalcedonic, locally oolitic, bluish to brownish gray.	9	626	502-511
56. Dolomitic limestone and calcitic dolomite—sublithographic to coarse grained; pearl gray to woodash gray, grading to light brownish to pinkish gray; bedding indeterminate. Weathers rough, in part reticulate, in part pitted, medium gray to medium bluish gray. Chert occurs as minor thin plates and excrescences, partly oolitic and dirty white. Fossils were collected from a subporcelaneous to granular or chalk textured dirty white chert weathering out near the trace of this interval or interval 55 about 1400 feet northwest of here (TF-49). They are cystid plates, *Ozarkina* cf. *O. typica* Ulrich & Bridge, *Helicotoma* sp., *Chepultepecia* sp., *Ectenoceras* sp., unidentified brevicone cephalopods, and two species of a new genus of trilobite similar to *Plethopeltis*.	6	632	496-502
57. Limestone, with irregular dolomitic inclusions—sublithographic to fine grained; woodash gray or pearl gray, grading to light brownish gray; beds from less than 1 inch to 14 inches thick. Weathers reticulate, medium bluish gray. Oolitic laminar chert occurs from 487 to 488 feet. Above 488 feet it is fairly abundant as excrescences, lenses, nodules, and plates; being subchalcedonic to subporcelaneous and locally crypto-oolitic or dolomoldic and quartzose, in part concentrically banded, bluish gray to pinkish white and white.	16	648	480-496
58. Limestone, with irregular dolomitic inclusions—sublithographic to medium grained; woodash gray to pearl gray; a single ledge. Weathers rough to smooth, medium bluish gray. The minor chert present consists of subporcelaneous, dolomoldic, dirty white excrescences. Fossils collected from the limestone (TF-93) include *Ozarkina* cf. *O. complanata* Ulrich & Bridge, *O.* cf. *O. typica* Ulrich & Bridge, *Ophileta* sp., *Helicotoma* cf. *H. uniangulata* (Hall), *Clarkoceras?*, and two species of a new genus of trilobite similar to *Plethopeltis*.	1	649	479-480
59. Limestone, with abundant irregular dolomitic inclusions—sublithographic, grading to medium grained where dolomitic; pearl gray or light brownish gray, grading to light pinkish gray where dolomitic; beds 1 to 14 inches thick. Weathers rough, reticulate; medium bluish gray. Above 474 feet chert is abundant; being mostly oolitic and laminar with holes resembling molds of flat pebbles. It is subgranular to subporcelaneous, in part quartzose, breaking with a fracture like that of paraffin; brownish to bluish gray to dirty white, in part with purplish or pinkish tinges. In the lower beds scattered chert occurs as irregular nodules and ropy excrescences; being subgranular to semichalcedonic, in part finely drusy, locally crypto-oolitic and pseudospicular, white to gray to purplish gray. *Ozarkina* cf. *O. typica* Ulrich & Bridge was collected from limestone in place 2.5 feet above the base of this interval (TF-93a). Fossils were also seen in chert float at 479 feet, being recorded as *Ozarkina* cf. *O. typica* Ulrich & Bridge and a small species of *Sinuopea* but not collected. Fossils were collected from granular, dirty pinkish white, russet weathering chert about on the trace of the upper part of this interval 600 feet west-northwest from the line of section. They are *Ozarkina* cf. *O. complanata* Ulrich & Bridge, *Ophileta* sp., *Schizopea* sp., *Ectenoceras?*, a large brevicone cephalopod, and a species of a new genus of trilobite similar to *Plethopeltis* (TF-47).	13.5	662.5	465.5-479

Description	Thickness: Interval	Thickness: Cumulative	Feet above base
60. Limestone and chert; the top 6 to 12 inches being oolitic laminar chert and the remainder limestone with abundant irregular dolomitic inclusions—the limestone is sublithographic, grading to medium grained where dolomitic; pearl gray, grading to woodash gray or light pink where dolomitic; poorly exposed. It weathers reticulate, medium bluish gray. The chert in the top foot of this interval is subgranular to subporcelaneous, oolitic and laminar, in minor part quartzose; bluish to brownish gray to white, in part banded. Besides the type described abundant chert was seen to weather out from the lower beds where traced laterally. This lower chert is semichalcedonic to subgranular or finely granular, commonly resembling fractured paraffin on a freshly broken surface; partly crypto-oolitic, dolomoldic, and chalk textured; in part layered with holes resembling molds of flat pebbles; light gray to dirty white on a fresh surface; and weathers to light shades of russet, tan, or dirty white. Fossils collected from chert at locality TF-29 are thought to be about on the trace of this interval or immediately below it. They include *Helicotoma* cf. *H. uniangulata* (Hall), *Schizopea* sp., *Sinuopea* sp., *Ophileta* sp., *Ectenoceras* sp., and a larger brevicone cephalopod.	5.5	668	460-465.5
B bed at 460 feet, shift 680 feet south-southeast if going up in the section and west-northwest if going south.			
61. Limestone, with irregular dolomitic inclusions—sublithographic, grading to medium grained where dolomitic; pearl gray to woodash gray, with minor pinkish tinges; beds poorly exposed, bedding indeterminate. Weathers reticulate, medium bluish gray. Much chert weathers out of this interval though little was seen in place. It is irregularly blocky to nodular or concretionary with semiconcentrically banded "cabbage-head" stromatolites of the cryptozoon type, and it is especially abundant in the lower half of the interval. It is chalcedonic to porcelaneous, less commonly subgranular with a fracture like broken paraffin, locally crypto-oolitic, in minor part slightly dolomoldic, and chalk textured where penetrated by weathering; light bluish or brownish gray to white, weathering to tones of dirty white to tan or russet.	11	679	449-460
A bed at 449 feet; shift 440 feet east-northeast if going up in the section and west-southwest if going down.			
62. Limestone, with minor irregular dolomitic inclusions—sublithographic, grading in part to a fine pellet limestone; pearl gray to woodash gray; beds 1 to 18 inches thick, poorly exposed in lower part. Weathers uneven, in part reticulate; medium bluish gray. Oolitic laminar chert weathers out from the lower few feet of this interval as abundant angular, russet to yellowish weathering blocks. At 447 feet semichalcedonic, in part crypto-oolitic, gray to brownish gray to dirty white chert occurs as irregular nodules and inclusions. Abundant blocky, white weathering chert floats over the interval from above.	11	690	438-449
A short lateral shift is made at 438 feet, moving east if going up in the section and west if going down.			
63. Dolomite at top and bottom, grading to limestone in the middle third—medium to fine grained, grading to sublithographic where pure limestone; woodash gray to light pinkish gray; beds 3 to 8 inches thick. Weathers smoothly uneven, reticulate, medium gray to medium bluish gray. Chert occurs as nodules and lenses at 435.5 feet; being semichalcedonic to chalk textured, oolitic to crypto-oolitic, bluish to brownish gray to white, and weathering shiny yellowish white.	3.5	693.5	434.5-438
64. Mostly limestone, with irregular dolomitic inclusions and occasional thin dolomite beds—sublithographic, grading to medium grained where dolomitic; pearl gray to woodash gray, grading to light yellowish gray; beds 1 to 8 inches thick. Weathers reticulate, platy, medium to light bluish gray. Chert is abundant as lenses and nodules from 431 to 432 feet; being chalcedonic to semichalcedonic, banded, bluish gray to brown and white, and weathering shiny brownish white.	8.5	702	426-434.5

Description	Thickness: Interval	Thickness: Cumulative	Feet above base
65. Dolomite—mostly medium grained, in part vuggy; light grayish brown, grading to light brownish and pinkish gray; beds 2 to 22 inches thick. Weathers uneven, pitted to smooth, medium gray. Chert is abundant as lenses, nodules and angular inclusions from 416.5 to 418.5 feet and from 424 to 425 feet. It is chalcedonic to subchalcedonic, in part grading to porcelaneous; locally oolitic to crypto-oolitic; in part with minor quartzose inclusions; and bluish or brownish gray to china white.	15	717	411-426
66. Limestone, with irregular dolomitic inclusions and grading to calcitic dolomite in upper 4 feet—sublithographic, grading to medium grained where dolomitic; pearl gray to yellowish or pinkish gray; bedding indeterminate. Weathers reticulate, medium gray to medium bluish gray. Chert abundant at base as semiconcentrically banded "cabbage-head" stromatolites of the cryptozoon type. This is subchalcedonic to porcelaneous, in part quartzose, brownish or bluish gray to white, and weathers tan to shiny white. Lenticular chert is abundant from 406 to 407 feet; being subchalcedonic to chalcedonic, in part crypto-oolitic, in minor part with quartzose inclusions, bluish gray to white, and mostly weathering shiny white.	10	727	401-411
67. Limestone, with irregular dolomitic inclusions and grading to dolomite in lower foot—sublithographic, grading to medium grained where dolomitic; very light gray to pearl gray or light pinkish gray, grading to light pink and salmon colored where dolomitic; beds 1 to 10 inches thick. Weathers reticulate, platy, medium bluish gray.	7	734	394-401
Z bed at 394 feet; shift about 150 feet east if going up in the section and west if going down, traveling parallel to and about 70 feet north of the east-west fence between the Staendebach survey to the north and one of the Fisher and Miller surveys to the south.			
68. Limestone, with irregular dolomitic inclusions and in minor part grading to dolomite—sublithographic, grading to medium grained where dolomitic; very light gray to pearl gray, grading to pinkish gray or salmon-colored where dolomitic, with sporadic pinkish and yellowish mottles; beds from less than 1 inch to 14 inches thick. Weathers rough, reticulate, medium bluish gray. Oolitic laminar chert and excrescences and plates of ropy, granular, in part dolomoldic and quartzose chert are abundant in place and as float in the lower half of the interval; weathering spongy and russet to dull brown. Occasional irregular inclusions, nodules, and lenses of chalcedonic to porcelaneous, brownish to bluish gray to china white, white weathering chert occur on the surface of bed Z, at the top of this interval. The lowest of the so-called oolitic laminar chert known from the vicinity of the Cherokee Creek section occurs in this interval, or slightly below it where beds of interval 69 have shifted laterally to limestone. This is the chert which typically accumulates in the residual mantle of gentle slopes underlain by rocks of some parts of the upper Staendebach member of the Tanyard formation in the north half of the Llano region. *Ozarkina* sp. and *Ophileta* sp. were noted in the upper part of this interval but not collected.	10	744	384-394
Base of calcitic facies of Staendebach member of Tanyard formation at base of interval 68. Total thickness of facies 176 feet.			
Dolomitic facies; 124 feet thick			
69. Dolomite, grading laterally to limestone in upper part—medium to fine grained, in part vuggy; light gray, varying to light pinkish and yellowish gray and grayish brown; beds 10 to 15 inches thick. Weathers uneven, in part pitted, medium gray. Dolomoldic chert and mostly medium to fine grained quartz druse are abundant as surficial coatings on some ledges, weathering rough and appearing in the float as conspicuous angular blocks. Interstitial chert is abundant in most beds. Search laterally along the trace of this interval reveals blocks of chert that is porcelaneous to semichalcedonic, with scattered dolomolds, and china white to light gray; subgranular, pitted, and dull brownish gray; subchalcedonic, crypto-oolitic, and light gray; or dolomoldic and russet. The porcelaneous to subchalcedonic cherts tend to weather shiny bluish to pinkish white.	24	768	360-384

Description	Thickness Interval	Thickness Cumulative	Feet above base
Fossils were collected from subgranular chert of this interval at locality TF-46. They are *Helicotoma* cf. *H. uniangulata* (Hall), *Sinuopea* small sp., *Gasconadia*? sp., *Levisoceras*? sp.			
70. Dolomite—fine to medium grained, in part slightly vuggy; light brownish or yellowish gray to pinkish gray, grading to nutria; beds poorly exposed and bedding indeterminate. Weathers irregular, in part pitted, medium gray. Chert is fairly abundant as nodules and irregular inclusions in place and angular blocks in the float, especially in the lower half of the interval. It is chalcedonic to porcelaneous; in part with quartzose inclusions; brownish and bluish gray to grayish white and brown, grading to pink or china white; and weathers shiny white to pinkish or brownish white. Interstitial chert occurs in some beds.	19	787	341-360
71. Dolomite—mostly fine grained, grading to medium grained; light brownish or pinkish gray to pearl gray, with scattered pinkish and yellowish streaks and mottles; beds 5 to 14 inches thick, mostly covered in lower 10 feet. Weathers irregular, in part pitted; medium gray. A 5-inch layer of chert occurs at 333 feet; being semichalcedonic to subchalcedonic, slightly quartzose, in part highly oolitic, brownish gray to dull white. Otherwise chert occurs as dolomoldic, quartzose, dirty white, russet weathering excrescences and thin surficial crusts of mostly medium to fine grained quartz druse; both weathering blocky and locally very abundant. Fossils were collected from dolomoldic chert weathering from this interval at locality TF-46a. They are *Helicotoma* cf. *H. uniangulata* (Hall), *Schizopea* cf. *S. typica* (Ulrich & Bridge), and fragments of other gastropods.	28	815	313-341
Y bed (1 foot of oolitic chert) at 313 feet—altitude 1538 feet at the south end, which is just south of the crest of a prominent strike ridge, and 1465 feet at the north end, which is near the bottom of an eastward draining draw. Shift 600 feet north-northeast if going up in the section and south-southwest if going down. (The shift indicated is a matter of convenience. The actual trace of bed Y, as inferred from its pattern in the float, and going from south to north, swings first eastward and then westward in a broad loop on a composite dip slope and then loops around the head of the eastward draining draw to the base of interval 71.)			
72. Chert (bed Y)—conspicuously oolitic and oomoldic; shades of gray and brownish gray; weathering russet.	1	816	312-313
73. Dolomite—fine to medium grained; light pinkish to yellowish gray, grading to pearl gray and brownish gray; beds 6 to 30 inches thick. Weathers uneven, in part pitted, medium gray. Dolomoldic, quartzose, white, gray to russet weathering chert and mostly medium to fine grained quartz druse are abundant as excrescences, surficial coatings, and rough weathering blocks in the upper 16 feet; and thin plates of white porcelaneous chert occur near the base of the interval.	22.5	838.5	289.5-312
74. Dolomite, except for top 4 to 6 inches which is oolitic chert—medium to fine grained; pinkish, brownish, and yellowish gray to beige, in part with pinkish and yellowish brown mottles; beds 9 to 12 inches thick. Weathers smooth to rough, in part pitted, medium gray. The 4 to 6 inch layer of chert at the top is semichalcedonic, crowded with ooids and irregular ovoid bodies, brownish to bluish gray, and weathers shiny white to russet. The beds from 283 to 285 feet display a conspicuous surface shell of finely dolomoldic russet-weathering chert.	10.5	849	279-289.5
75. Dolomite—very fine to medium grained, in part vuggy; varying through light gray, pinkish gray, grayish brown, and beige, with local pinkish and purplish mottles; beds 4 to 16 inches thick. Weathers smooth to pitted, medium gray. Chert present as minor dolomoldic and quartzose excrescences or surficial coatings; in part weathering to spongy russet masses in the float. At 276 feet is minor porcelaneous, chiua white chert, weathering smooth and shiuy white.	14	863	265-279
76. Dolomite—in part an intraformational conglomerate; having angular granules of chert and dolomite in a dolomite matrix; very fine grained; mouse gray to pinkish and yellowish gray, with sporadic pinkish mottles; beds poorly exposed, seemingly 1 to 4 inches thick. Weathers to smooth, light yellowish to brownish gray plates and cobbles scattered on a conspicuous minor topographic bench.	5	868	260-265

Description	Thickness: Interval	Thickness: Cumulative	Feet above base
Chert is common as thin irregular plates and blocks in the float; being chalcedonic to porcelaneous, with scattered tiny dolomolds and local quartzose inclusions, bluish to brownish gray to white, and weathering shiny white. In the lower part of the interval, the chert is commonly a granule conglomerate, consisting of rounded to angular fragments of chert of the types described in a chalcedonic matrix which is typically crypto-oolitic and pseudospicular. Interval 76 was traced the breadth of the southeast block of the Cherokee area as a conspicuous and persistent minor bench; below which compact to inconspicuously dolomoldic, smooth fracturing, chalcedonic and porcelaneous chert was found only as float or as minor inclusions in predominantly dolomoldic and quartzose chert.			
Base of dolomitic facies of Staendebach member of Tanyard formation at base of interval 76. Total thickness of facies 124 feet, and of member 300 feet.			
Threadgill member: 260 feet thick *Dolomitic facies: 260 feet thick*			
77. Dolomite—mostly medium grained, in part grading to fine grained, vuggy; pearl gray to light pinkish and brownish gray, in part with minor yellowish gray to pink mottles; beds irregular, about 10 to 24 inches thick. Weathers irregular; pitted; medium gray to iron gray, in part with a brownish tone. Chert occurs in the upper 2 feet as spongy surficial coatings and excrescences; being dolomoldic and quartzose, dirty white, and weathering dull white to tan or russet. Interstitial chert occurs in some beds. Minor quartz druse and a little float of granular white chert occurs in the lower part of the interval.	22	890	238-260
78. Dolomite—fine to medium grained in alternating zones of varying thickness, vuggy. Pearl gray to brownish gray, grading to pinkish and yellowish gray; in part with lavender, rose, and beige tinges; and with the darker colors in the lower part. Bedding indistinct, beds about 4 to 24 inches thick. Weathers rough to smooth, in large part pitted; medium brownish gray to iron gray. Dolomoldic, quartzose chert and quartz druse are common in the lower 25 feet as excrescences and surficial films; being most abundant in the upper part of this zone and occurring occasionally above it. Fossils were collected from chert thought to weather out about on the trace of the beds between 220 and 230 feet in this interval (TF-70). They are *Schizopea* sp., *Ophileta* cf. *O. supraplana* Ulrich & Bridge, *Sinuopea* large and small spp., chiton plates, *Ectenoceras* sp., *Dakeoceras* sp., and *Caseoceras*? sp.	50	940	188-238
79. Dolomite—medium to coarse grained, vuggy; mostly pearl gray to woodash gray, in part grading to darker tones; beds about 5 to 24 inches thick, indistinct in the upper part. Weathers rough, pitted, uneven, medium gray to iron gray. Minor dolomoldic chert and quartz druse occurs as excrescences.	25	965	163-188
80. Dolomite—mostly fine grained, in part grading to medium grained, in part vuggy; medium grayish brown to brownish or yellowish gray, grading toward nutria and pearl gray; beds 5 to 24 inches thick. Weathers uneven, medium gray to iron gray. Abundantly dolomoldic chert and quartz druse is fairly common as excrescences and surficial films in place and spongy blocks in the float, and minor compact granular chert was seen in place. The dolomoldic chert is coarsely cellular to fairly compact, commonly quartzose, white to light gray or light brown, and weathers russet to tan. The crystals of the quartz druse are milky to clear and fine to coarse grained. Fossils occur in the chert described above, and *Ozarkina* large sp., *Schizopea* large sp., *Sinuopea* large and medium sized spp., *Ophileta* sp., *Pelagiella* sp., and several species of brevicone cephalopods were seen in chert float immediately above bed X at its east end. Representative collections can best be obtained where the chert accumulates as a mantle and collection TF-44 is thought to come from chert of about this interval accumulating at the foot of a hill northwest of the line of section, though it may include stratigraphically lower elements or contaminations from above. It contains *Helicotoma* cf., *H. uniangulata* (Hall), *Schizopea* sp., *Ophileta* cf. *O. supraplana* Ulrich & Bridge, *Sinuopea* large and small spp., *Pelagiella* sp., *Chepultepecia* sp., *Gasconadia*? sp., chiton plates, *Caseoceras* sp., *Conocerina?* sp.	19	984	144-163

Description	Thickness: Interval	Thickness: Cumulative	Feet above base
X bed at 144 feet—altitude 1493 feet at the west end of its traced portion, at the top of a westward-facing scarp, and 1442 feet at the east end of its traced portion, at the foot of a south-facing scarp. Shift about 2400 feet east-southeast if going down in the section and west-northwest if going up.			
81. Dolomite—mostly medium grained, in part vuggy; woodash gray to pearl gray, with lavender streaks. The upper 18 inches, however, is fine to medium grained and beige to yellowish gray, with lavender streaks. Bedding indistinct in lower part, beds 10 to 18 inches thick in upper part. Weathers smooth to uneven; in part pitted; medium gray to iron gray, in part with a brownish tinge. Quartz druse; dolomoldic, quartzose, russet to tan weathering chert; and minor granular chert occurs as local excrescences on the upper beds.	11	995	133-144
82. Dolomite, in part calcitic—coarse to medium grained, in part vuggy; light yellowish to brownish gray to pearl gray; beds about 1 to 18 inches thick. Weathers rough, in part pitted; medium gray to iron gray, in part with a brownish tone. Poorly exposed in lower 55 feet. The lower few feet of this interval shows rounded to angular inclusions of fine grained brownish dolomite in the coarse to medium grained light colored dolomite typical of the Threadgill member of the Tanyard formation in the Cherokee area. This probably represents the thin conglomerate which has been seen at the generally poorly exposed base of the Ordovician at a few other places in the Cherokee area.	133	1128	0-133
Base of dolomitic facies of Threadgill member of Tanyard formation at base of interval 82. Total thickness of facies 260 feet, of member 260 feet, and of formation 560 feet.			
Cambrian—Ordovician boundary and base of Cherokee Creek section at base of interval 82; elevation 1428 feet on flat between draw and foot of scarp. Beneath is fine to very fine grained, brownish dolomite of the Pedernales dolomite member of the Wilberns formation, with interstitial glauconite.			
Total thickness of the Ellenburger group (restricted) in the Cherokee Creek section = 1128 feet.			

Stratigraphic sections in the Johnson City area

The faulting in the Johnson City area precludes a continuous section, but several other factors make the area an especially important one toward an understanding of the Ellenburger and the closely related underlying Cambrian rocks. From past work the Pedernales dolomite member, the uppermost member of the Wilberns formation, was named in this area. The thickest section of the uppermost formation of the Ellenburger is in the Honeycut Bend area and therefrom has received its name. The thickest undisturbed sequence of Devonian rocks yet known in the Llano uplift tops the Ellenburger in Honeycut Bend. And its location on the southeast side of the uplift gives a more complete picture of the Ellenburger group over a wider area.

Honeycut Bend Section

This portion of the Honeycut formation, Blanco County, Texas, was measured, described, and sampled by V. E. Barnes and L. E. Warren, July, 1944.

Description	Thickness: Interval	Thickness: Cumulative	Feet above base
Pennsylvanian			
Marble Falls limestone			
(Spiculite member—75 ± feet thick, lower 5 feet only sampled.)			
1. Spiculite—microgranular (from spicule content), dark gray, breaks splintery, has a harsh feel and is fissile. Weathers to a lighter gray on bluff exposures, and to an ivory, apricot, or even darker shade on gentle slopes. A thin-section of this rock is crowded with sponge spicules in a microgranular groundmass of calcite.	5	5	1315-1320
Mississippian			
Chappel formation: 8.5 feet thick			
2. Limestone and shale—the limestone has an uneven rough fracture, is brownish gray near nutria, and is thickly bedded occupying the full interval in places, and in others being split into several beds by lenses of black shale. The black	8.5	13.5	1306.5-1315

Description	Thickness Interval	Thickness Cumulative	Feet above base
shale is most common at the bottom and top of the interval but is also within the limestone either as horizontal lenses, or as lenses cutting the limestone at low angles. Crinoid stems are numerous.			
Chert breccia; 1.5 feet thick			
3. Chert with some limestone—the chert is chalcedonic to subchalcedonic, mostly light brownish gray also ranging from light gray to old ivory, smooth-fracturing and opaque to translucent, occurring as angular to subrounded pieces up to 6 inches or more in size, with some minor pockets of crinoidal, brownish gray limestone near nutria in color.	1.5	15	1305-1306.5
Devonian			
Stribling formation: 10 feet thick			
4. Limestone—microgranular, medium gray ranging to reddish buff and beige with about 2 inches at the base being old ivory in color, bedding very irregularly lenticular from almost fissile to 6 inches thick. Weathers uneven and to a medium gray. Chert chalcedonic to subchalcedonic and brownish to grayish in lower part, occurring as irregular lenses and "false" joint fillings. Some lenticles of yellowish siliceous limestone come in about 1 to 2 feet above the base. The bottom foot is noucherty. Sand grains are common in the bottom 2 inches. Fossils—*see* Devonian of central Texas, Univ. Texas Pub. 4301.	10	25	1295-1305
Shift southwest along the Devonian-Ordovician contact to a point west of a small fault and south of fossil locality 16T-2-43J.			
Ordovician: Ellenburger group			
Honeycut formation: 679 feet thick			
5. Limestone—sublithographic, light gray, with beds ranging from 6 inches to 2 feet thick. Chert chalcedonic to subchalcedonic, semitranslucent and gray with an olive green cast, and occurs as angular fragments except at top of interval where it is fossiliferous and present as large rough surfaces. Silicified fossils present on top ledge are *Hormotoma* sp., *Ceratopea* sp., and *Orospira* sp. (16T-2-43L). The top ledge is almost a *Hormotoma* coquina in which only a small portion of the fossils are silicified.	5	30	1290-1295
6. Limestone—sublithographic, light gray, and thickly bedded. A 2-inch chert bed occurs at 40 feet. It is chalcedonic, crypto-oolitic, light gray to reddish buff and translucent. Silicified fossils are *Ceratopea* sp. poorly preserved (16T-2-43K), found to the northeast beneath the Devonian type section. The collection is located at 35 feet in the section.	15	45	1275-1290
7. Limestone—sublithographic, light gray with some thin seams of pinkish limestone, and thickly bedded.	5	50	1270-1275
8. Limestone—sublithographic, light gray with rust brown areas along small stylolites, and thickly bedded. Intervals of "brecciation" are present 1 inch or less thick in which very small limestone fragments are cemented with clear calcite. A 2-inch chert matrix sand located at the base is subchalcedonic, light gray to brownish gray, translucent, and contains clear sand grains which weather in relief.	5	55	1265-1270
9. Limestone—sublithographic, light gray, and thickly bedded. A chert bed an inch thick near the base, is chalcedonic, white to medium bluish gray, and translucent. Fossils at 61 feet are scarce and poorly preserved; *Ceratopea* sp., which are only partly silicified (16T-2-43J).	13	68	1252-1265
Station 41 (elevation 981) painted on *Ceratopea* bed.			
10. Limestone with paper-thin shaly partings—sublithographic, light greenish gray to pinkish, and with paper-thin to 1/16 inch bedding; weathers fissile and recessive.	1.5	69.5	1250.5-1252
11. Dolomite—microgranular, ivory to beige, in part mottled, and medium bedded.	10.5	80	1240-1250.5
12. Dolomite—medium to fine grained, pearl gray, and medium bedded.	5	85	1235-1240
13. Limestone—sublithographic, light gray, and one bed.	2	87	1233-1235
14. Limestone—sublithographic, light gray, and thickly bedded, with minor streaks of dolomite.	6	93	1227-1233

Description	Thickness Interval	Thickness Cumulative	Feet above base
Chert semiporcelaneous, white, opaque, and smooth-fracturing, occurring as nodules and fragments.			
15. Dolomite—fine grained ranging toward medium grained, mottled from old ivory to mouse gray, and medium bedded. Chert semiporcelaneous, white, opaque, and smooth-fracturing, occurring as nodules and fragments near the middle of the interval.	5.5	98.5	1221.5-1227
16. Limestone—sublithographic, light gray, and medium to thickly bedded. Chert semiporcelaneous, and dark gray; occurs near the top of the interval in a 3- or 4-inch layer. It is fossiliferous and similar in texture to that common to cannonball chert.	5.5	104	1216-1221.5
17. Dolomite—microgranular, beige, and indistinctly bedded.	1	105	1215-1216
18. Limestone—sublithographic, light gray, and medium to thickly bedded.	4	109	1211-1215
19. Dolomite—microgranular, upper part white to mouse brown and lower part yellowish gray to brownish gray, and bedding indistinct.	10	119	1201-1211
20. Limestone—sublithographic, light gray, and medium to thickly bedded. Becomes somewhat dolomitic laterally. Chert porcelaneous, snow white to brownish gray, and smooth-fracturing.	6	125	1195-1201
Station 40 (elevation 982) at 125 feet in section is painted on top of a *Ceratopea* bed.			
Shift northeast along *Ceratopea* bed across Pedernales River to Station 39.			
21. Limestone—sublithographic, light gray to brownish gray, and thickly bedded with rhombs of dolomite sporadically distributed. Chert semiporcelaneous, white to light gray, opaque, and smooth-fracturing with, in addition, cannonball type chert in top 2 feet. Silicified fossils in top portion of bed are numerous *Ceratopea keithi* Ulrich, and rarely cephalopod siphuncles (16T-2-43I).	4	129	1191-1195
Station 39 (elevation 987) is painted on top of the *Ceratopea* bed.			
22. Dolomite—medium grained, pearl gray to mouse gray and thickly but indistinctly bedded. Chert subchalcedonic to porcelaneous, white to beige, in part translucent, and occurs as elongated, ellipsoidal, fractured and jointed masses.	2	131	1189-1191
23. Limestone and dolomite—sublithographic, light gray to yellowish gray, lenticularly bedded limestone grading laterally into medium grained, light gray dolomite. Chert subchalcedonic to porcelaneous, greenish gray to white, in part translucent, occurs as elongated ellipsoidal, fractured and jointed masses.	4.5	135.5	1184.5-1189
24. Limestone—sublithographic, light gray, and fissile.	0.5	136	1184-1184.5
25. Limestone and dolomite—sublithographic, yellowish gray "stromatolitic" limestone with some network, medium grained, similar color dolomite. Chert subchalcedonic, white to yellowish gray, somewhat mottled, smooth-fracturing, semitranslucent to translucent. Silicified fossils at 143 feet, *Ceratopea keithi* Ulrich (16T-2-43H).	8	144	1176-1184
Station 38 (elevation 987) painted on top of bed.			
26. Dolomite—microgranular, sugary textured, ivory, and thickly bedded. Weathers to a superficially appearing chalky texture which, however, on close examination is seen to be granular.	3	147	1173-1176
27. Limestone and dolomite—sublithographic, light gray, massive "stromatolitic-appearing" limestone with a network of medium grained dolomite in which the rhombs range from light gray to cinnamon. The deeper color where present is in the middle of the rhombs. Silicified fossils are *Ceratopea keithi* Ulrich (16T-2-43G).	8	155	1165-1173
Station 37 (elevation 987) is painted on *Ceratopea* bed at 151.5 feet in section.			
28. Dolomite—microgranular, yellowish gray, and thickly bedded.	9	164	1156-1165
29. Limestone and dolomite—sublithographic, and light gray with a 3-inch pinkish mottled bed. Top 6 inches is interlaced by medium grained dolomite, and thinly bedded.	3	167	1153-1156
30. Dolomite—microgranular, light gray, and thickly bedded.	7	174	1146-1153
31. Dolomite—microgranular, nutria to brownish gray, and medium bedded with 6 inches at top chalky white and fissile.	5	179	1141-1146

Description	Thickness Interval	Thickness Cumulative	Feet above base
Chert porcelaneous to subchalcedonic, white to light gray, semitranslucent, and occurs as flat and ellipsodial masses along the bedding.			
Shift across a small fault having about 10 feet of displacement to same horizon.			
32. Limestone and dolomite—sublithographic, light gray, thickly bedded limestone with much brownish gray fine grained dolomite and some thin seams of pinkish medium grained dolomite. Laterally the bed changes entirely to dolomite. Chert porcelaneous to semichalcedonic, dirty white to medium gray, opaque to semitranslucent and smooth-fracturing. Occurs as masses along bedding planes and as large cannonballs.	5.5	184.5	1135.5-1141
33. Limestone—sublithographic, light gray and thickly bedded. Chert porcelaneous to semichalcedonic, dirty white to medium gray, opaque to semitranslucent, and smooth-fracturing. Occurs as masses along bedding planes and as large cannonballs.	4.5	189	1131-1135.5
34. Limestone—sublithographic, and old ivory. Top half—rounded "stromatolitic" masses, lower half—medium bedded to thickly bedded.	10.5	199.5	1120.5-1131
35. Limestone—sublithographic, mottled in dull orange reds, and medium to thickly bedded. Chert porcelaneous, white and smooth-fracturing.	4	203.5	1116.5-1120.5
36. Limestone—sublithographic, old ivory, and thickly bedded. Top 1.5 feet contains beekite, a quartzose chert replacing fossils. Silicified fossils are *Ceratopea keithi* Ulrich (16T-2-43F, also TF-269).	3.5	207	1113-1116.5
Station 36 (elevation 988) is painted on upper surface of *Ceratopea* bed at 203.5 feet in section.			
37. Limestone—sublithographic, dull orange red mottled by pink, and medium bedded. Some beds contain scattered dolomite rhombs.	7	214	1106-1113
38. Limestone—sublithographic, light gray, and thickly bedded. Silicified fossils are *Ceratopea keithi* Ulrich (16T-2-43E).	7	221	1099-1106
Station 35 (elevation 991) is painted on upper surface of *Ceratopea* bed at 219 feet in section.			
39. Limestone and dolomite—sublithographic, and light gray limestone, with much network medium grained orange red dolomite. Grades to dolomite laterally.	2	223	1097-1099
40. Covered—topographic expression suggests very thin bedded fissile limestone.	2	225	1095-1097
41. Limestone—sublithographic, light gray, and medium bedded.	2	227	1093-1095
42. Limestone and dolomite—sublithographic, pinkish, thinly bedded, and containing disseminated dolomite rhombs of about the same color. Chert subchalcedonic to chalcedonic, opaque to semitranslucent, and maroon with minor greenish streaks. Dolomite rhombs occur in thin zones in the chert.	2	229	1091-1093
43. Limestone—sublithographic, alternating yellowish gray and brown, thinly bedded. Chert oolitic, dirty brown, and translucent.	5	234	1086-1091
44. Limestone—sublithographic, and light gray.	1	235	1085-1086
45. Dolomite—fine to medium grained, and mouse gray. Chert at top of interval white and chalk textured.	1	236	1084-1085
46. Limestone—sublithographic, mottled light gray with 1-inch reddish bed at top, and thinly bedded.	1.5	237.5	1082.5-1084
47. Limestone—sublithographic, light gray and medium bedded.	1.5	239	1081-1082.5
48. Limestone, some dolomite—sublithographic, light gray, and thickly bedded, with yellowish, medium grained dolomite network. Silicified fossils are *Ceratopea* or crushed siphuncle (16T-2-43D).	5	244	1076-1081
Station 34 (elevation 992) painted on *Ceratopea* bed at 242 feet in section.			
49. Dolomite—medium grained, light gray to yellowish gray, thickly bedded. Laterally it changes to limestone.	5	249	1071-1076
50. Dolomite—microgranular, yellowish gray, mottled, medium bedded.	10	259	1061-1071
51. Dolomite—microgranular, brownish gray to old ivory, medium bedded, and having a petroliferous odor. Chert in small nodules white and chalky textured.	2.5	261.5	1058.5-1061
52. Dolomite—medium grained, light gray thickly bedded and becomes calcareous laterally.	2.5	264	1056-1058.5

Description	Thickness: Interval	Thickness: Cumulative	Feet above base
53. Dolomite—microgranular, light gray becoming darker in lower 5 feet, ranging from yellowish to brownish gray, mottled, and medium to thickly bedded. Silicified fossils in chert are abundant at about 280 feet in section along strike 300 feet to the north. Fossils are *Orospira* sp., *Ceratopea keithi*, *Tarphyceras*, cf. *T. chadwickense* Ulrich, Foerste, Miller, and Furnish, and *"Ophileta"* sp. (TF-268).	25	289	1031-1056
54. Dolomite—microgranular, beige to nutria, mottled, and medium bedded. Chert subchalcedonic, translucent to opaque, dirty white or brownish, with minute variation in translucency suggesting pellets. Zones crossing the chert appear to be mylonite in which the chert fragments are varicolored.	3	292	1028-1031
55. Limestone—sublithographic, light gray, and fissile to thinly bedded. Chert in top foot chalk textured, dirty white and in lower 2 feet porcelaneous, white semitranslucent and smooth fracturing.	3	295	1025-1028
56. Dolomite—microgranular, light gray to beige with some in lower part approaching yellow ochre, mottled, and medium bedded. Chert chalk textured to porcelaneous, dirty white to white, occurring as irregular jointed masses.	8	303	1017-1025
57. Dolomite—medium to fine grained, pearl gray to yellowish gray, and medium bedded.	9.5	312.5	1007.5-1017
58. Limestone—sublithographic, light gray and thickly bedded. Grades to dolomite laterally. Silicified fossils are *Orospira* sp., cephalopod siphuncle, and *Ceratopea* sp. (16T-2-43C).	2.5	315	1005-1007.5
Station 33 (elevation 995) painted on top of limestone bed.			
Shift north 600 feet along strike of rather poorly defined beds and continue section in a northwest direction. There is room for error of possibly as much as 5 feet either way in making this shift.			
59. Dolomite—microgranular, nutria with small light gray mottlings, and medium bedded.	2	317	1003-1005
60. Dolomite—microgranular, nutria, medium bedded. Chert subchalcedonic to porcelaneous, white, and slightly translucent, occurring as plates.	2.5	319.5	1000.5-1003
61. Dolomite—medium grained, pearl gray, and consisting of one bed.	1	320.5	999.5-1000.5
62. Dolomite—microgranular to fine grained, nutria to yellowish gray, mottled and medium bedded.	9.5	330	990-999.5
63. Dolomite—microgranular to fine grained, nutria, and medium bedded. Chert subchalcedonic, dirty white, and semitranslucent. Occurs as elongated nodules.	5	335	985-990
64. Dolomite—microgranular, brownish gray, and medium bedded in upper half. Lower half not exposed, but cannonball chert float abundant throughout interval. Chert porcelaneous, and dirty white.	5	340	980-985
65. Dolomite—microgranular, yellowish gray, and medium bedded. Chert porcelaneous, white, and smooth-fracturing.	5	345	975-980
66. Dolomite—microgranular, shades near nutria, and medium bedded. Lower part has petroliferous odor.	15	360	960-975
67. Dolomite—microgranular, nutria, and medium bedded. Chert porcelaneous to subchalcedonic, dirty white to gray, and opaque to translucent. Occurs in nodules and flat plates.	9	365	955-960
68. Dolomite—microgranular, shades of brownish gray, mottled, and medium bedded.	5	370	950-955
69. Dolomite—microgranular, nutria, and medium bedded. Chert chalcedonic to semiporcelaneous, dirty white to cinnamon brown, opaque to translucent, and contains some sponge spicules.	10	380	940-950
70. Dolomite—microgranular, brownish gray to nutria, mottled, and medium bedded. Chert chalcedonic to porcelaneous, dirty white to gray, and opaque to transparent. Occurs as elongated chalky appearing nodules in upper part and scattered 1- to 1.5-inch round white nodules in lower part.	10	390	930-940
71. Dolomite—microgranular, old ivory to dark gray and medium bedded. Chert chalcedonic to porcelaneous, dirty white to light gray and nutria, and opaque to translucent. Occurs as angular masses having a chalky textured exterior.	5	395	925-930

Description	Thickness Interval	Thickness Cumulative	Feet above base
72. Dolomite—microgranular, old ivory, and medium bedded.	5	400	920-925
73. Dolomite—microgranular, old ivory to nutria being darker toward the base, and medium bedded. Chert chalcedonic to porcelaneous, dirty white to light gray and nutria, opaque to translucent, and with some banded chert near the middle. Occurs as angular masses having a chalky textured exterior.	15	415	905-920
74. Dolomite—microgranular, brownish gray to yellowish gray, and medium bedded.	5	420	900-905
75. Dolomite—microgranular, brownish gray and poorly exposed. Chert not seen in place, but cannonball type float common in interval. (This interval is in a long strike opening in the cedar along a cattle trail which is open enough for driving an automobile.)	5	425	895-900
76. Dolomite—microgranular to fine grained, nutria, in part mottled, and medium bedded. Chert chalcedonic, white to light bluish gray, and translucent. Occurs as small angular fragments.	5	430	890-895
77. Dolomite—fine grained with some fine to medium grained in bottom 5 feet, light gray, and medium bedded.	18	448	872-890
78. Dolomite—microgranular light gray mottled with cinnamon, and medium bedded. Chert chalcedonic to chalky, dirty white to bluish gray, and opaque to translucent. Occurs as small irregular nodules.	2	450	870-872
79. Dolomite—fine grained, nutria and some yellowish gray, and medium bedded. Chert chalky textured and dirty white.	5	455	865-870
80. Dolomite—fine grained approaching medium grained toward bottom; nutria at top, yellowish gray in middle, and pearl gray at the bottom, all mottled, and medium bedded.	15	470	850-865
81. Dolomite—microgranular, mottled light gray and cinnamon, and medium bedded. Chert chalky textured and white.	5	475	845-850
82. Dolomite—microgranular, brownish gray to yellow beige, and medium bedded.	5	480	840-845
83. Dolomite—microgranular, brownish gray to nutria, and medium bedded. Chert chalky textured to porcelaneous, porous, dirty white to nutria. Occurs as rounded ellipsoidal cannonballs.	5	485	835-840
84. Limestone and dolomite—sublithographic, light gray, thickly bedded limestone in part with network of medium grained dolomite. Laterally the bed changes entirely to dolomite. Silicified fossils are *Ceratopea robusta* Oder var. b, and cephalopod siphuncles (16T-2-42D).	4	489	831-835
Station 29 (elevation 1002) painted on *Ceratopea* bed at 489 feet in section.			
85. Limestone—sublithographic, medium gray to nutria, thinly bedded to fissile, with some coarse grained calcite veinlets. Chert subchalcedonic to semiporcelaneous, white, and faintly translucent with small pellets. Occurs as small white ellipsoidal nodules along one bedding plane.	2.5	492.5	827.5-830
86. Dolomite—microgranular, in part alternate bands of beige and cinnamon and in part near old ivory, and medium bedded.	2.5	495	825-827.5
87. Limestone—sublithographic, between medium gray and nutria, and very thin to thinly bedded, not over 1 inch thick. Chert subchalcedonic, yellowish gray, feebly translucent, with breccia zones resembling mylonite. Occurs as weathered dirty white irregular masses along bedding planes.	2	497	823-825
88. Dolomite—fine grained, light gray to brownish gray, and medium bedded.	3	500	820-823
89. Dolomite—medium grained, nutria mottled with light gray and medium bedded.	1	501	819-820
90. Limestone and dolomite—sublithographic, yellowish gray, and massive with network of medium grained dolomite. Chert variable from porous chalky textured, dirty white incipient cannonballs to brittle nonporous subporcelaneous to subchalcedonic, translucent, light brown, jointed and fractured masses.	2.5	503	816.5-819
91. Dolomite—microgranular, yellowish gray in upper part to medium gray in lower part, and medium to thickly bedded. Chert porcelaneous to chalky textured to subchalcedonic, in part quartzose, white to gray banded with brown, and opaque to translucent. Occurs as elon-	11.5	515	805-816.5

Description	Thickness Interval	Thickness Cumulative	Feet above base
gated ellipsoidal masses in upper part, and as angular nodules, fragments and ropy masses in lower part.			
Station 28 (elevation 1006) painted on dolomite ledge at 512 feet in section.			
92. Limestone and dolomite—sublithographic, light gray, and massively bedded with network of medium grained dolomite. Grades laterally into nutria, medium grained dolomite. Chert chalky textured to semichalcedonic, dirty white to yellowish gray, opaque to feebly translucent and contains sponge spicules. Silicified fossils are *Archaeoscyphia* sp., cephalopod siphuncles, and one *Ceratopea* sp. The *Ceratopea* was lost while trying to collect it. Many *Archaeoscyphia* sp., in this bed are of limestone preservation. Interval 92 is thought to be the zone of *Ceratopea capuliformis* and to correlate with the *Archaeoscyphia-Ceratopea capuliformia* zone at the top of the Cherokee Creek section. The rocks described above, therefore, constitute a continuation upward in the Honeycut formation above the highest exposed beds of the Cherokee Creek section. The section here described as the Honeycut Bend section is but a part of a much thicker composite section (1320 feet thick) the description of which will be completed in a later report.	4	519	801-805