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The Upper Ordovician Through Middle Silurian of The Eastern Great Basin, Part 2. Lithologic Descriptions

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Abstract: Lithologic descriptions of Upper Ordovician through Middle Silurian rocks are given for nine measured sections in the Bear River Range, Lakeside Mountains, Silver Island Mountains, and Barn Hills, Utah, and in the Pequop Mountains, Egan Mountains, Delamar Range, Cherry Creek Mountains and Pancake Mountains, Nevada. Stratigraphic observations are presented from 19 additional sections that were not measured. These observations form the basis for conclusions on stratigraphic division, paleoecology, and correlation.

INTRODUCTION

This is the second part of a series of contributions that describe the Upper Ordovician through Middle Silurian strata of the Great Basin. This part presents the detailed stratigraphy of nine measured sections and includes observations on the stratigraphy of nineteen additional sections that were not measured. A list of members is presented in Table 1. The location of sections is shown on Fig. 1. In the introductory part of this series the principal Upper Ordovician and Silurian stratigraphic units were outlined.

This report sets forth the descriptive observations used to formulate the conclusions regarding the sequence and subdivision of Upper Ordovician through Middle Silurian strata. The authors intend the data presented below be utilized in the context provided in the first report of this series

"Part I, Introduction—Historical perspective and stratigraphic synthesis." Since substantial errors are frequently made in interpretations of data, it is our hope to provide the reader with a basis for reinterpretation and the development of alternative conclusions.

Strata of this time span were examined at forty-three localities in thirty mountain ranges in the Great Basin (Nevada, Utah, and Idaho). The follow-

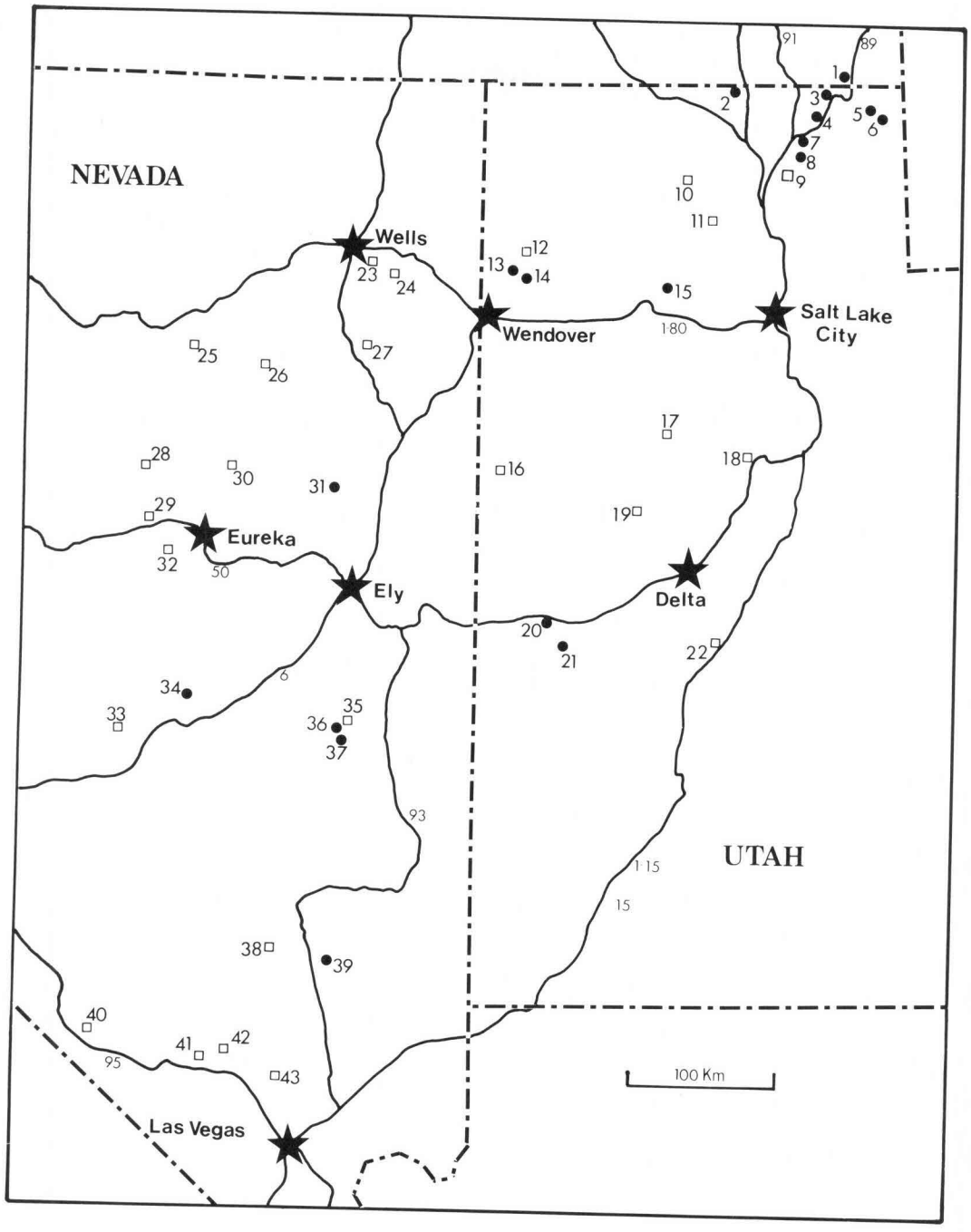
NEVADA
UTAH
Wells
Wendover
Salt Lake City
Eureka
Ely
Delta
Las Vegas
100 Km
91
89
180
50
6
93
1 15
15
95

Fig. 1. The map indicates the location of sections that have been measured (solid circles) or examined (open boxes). Highways are shown as solid lines.

Key:
1. Fish Haven Canyon
2. Portage
3. Tony Grove Lake
4. Logan Canyon
5. Laketown Canyon
6. East fork, Laketown Canyon
7. Blacksmith Fork
8. Hyrum Canyon
9. Four-mile Canyon
10. West side, Promontory Mountains
11. East side, Promontory Mountains
12. Crater Island
13. West side Silver Island Mountains
14. East side Silver Island Mountains
15. Lakeside Mountains
16. Deep Creek Mountains
17. Sheeprock Mountains
18. East Tintic Mountains
19. Thomas Range
20. Confusion Range
21. Barn Hills
22. Pavant Range
23. Wood Hills
24. Pequop Mountains
25. Pinyon Range
26. Ruby Mountains
27. Spruce Mountains
28. Roberts Creek Mountains
29. Lone Mountain
30. Bald Mountain
31. Cherry Creek Mountains
32. Mahogany Hills
33. Hot Creek Range
34. Pancake Range
35. South Egan Range
36. South Egan Range
37. South Egan Range
38. Pahranagat Range
39. Delamar Mountains
40. Bare Mountain
41. Spotted Range
42. Ranger Mountains
43. Sheep Range

ing measured and collected sections from nineteen localities provide the stratigraphic basis for sedimentologic and paleontologic inferences that will be discussed in detail in subsequent reports.

The strata studied lie above the Eureka and Swan Peak Quartzites and below the Sevy and Water Canyon Formations, and are the Ely Springs, Fish Haven and Laketown Dolostones. The authors have substituted the rock term dolostone for the mineral term dolomite. Also examined, but in less detail, were the Hanson Creek, Roberts Mountains, and Lone Mountain Formations. The Ely Springs, Fish Haven and Laketown Dolostones are divisible into a total of thirteen members which are described in the

Table 1

Formation	Member (author)	Location of type section
Laketown Dolostone	Decathon (Rush, 1956)	Snake Range, Nevada
	Jack Valley (Rush, 1956)	Confusion Range, Utah
	Portage Canyon (Budge & Sheehan, 1980)	*Bear River Range, Utah*
	Gettel (Budge & Sheehan, 1980)	*Barn Hills, Utah*
	High Lake (Budge & Sheehan, 1980)	*Bear River Range, Utah*
	Tony Grove Lake (Budge & Sheehan, 1980)	*Bear River Range, Utah*
Ely Springs Dolostone	Floride (Osterwald, 1953)	*Thomas Range, Utah*
	Lost Canyon (Budge & Sheehan, 1980)	*Silver Island Mountains, Utah*
	Barn Hills (Budge & Sheehan, 1980)	*Barn Hills, Utah*
	Ibex (Budge & Sheehan, 1980)	*Barn Hills, Utah*
Fish Haven Dolostone	Bloomington (Keller, 1963, informal)	Bear River Range, Idaho
	Deep Lakes (Keller, 1963, informal)	Bear River Range, Idaho
	Paris Peak (Keller, 1963, informal)	Bear River Range, Idaho

Table 1. Location of type sections of members. Italicized locations are in this contribution. For precise location of type sections, see headings of each section in text.

following pages. Lithologic divisions were based on composition, color, degree of crystallinity, bedding features, and the stratigraphic position of fossils. As an aid to future use of these collections by other workers, locality numbers followed by a (T) indicate that the fossil collection came from talus and not bedrock.

PART A: DESCRIPTION OF MEASURED SECTIONS

TONY GROVE LAKE SECTION

The section was measured in the Bear River Range, Utah, beginning in the SW 1/4 SW 1/4 of unsurveyed sec. 5, T. 13 N., R. 3 E.; ending in the SW 1/4 SW 1/4 of unsurveyed sec. 6, T. 13 N., R. 3 E. See Fig. 6 of Budge & Sheehan (1980).

	Unit Thickness (feet)
Water Canyon Formation	
Distance above base of section: 1,572.3 feet.	
Laketown Dolostone	
Thickness: 1,205.1 feet.	
Decathon Member (Reference Section)	
Thickness: 16.4 feet.	
29. Dolostone, medium-gray (N 5) to medium-light olive-gray (5 Y 5/1), weathers light gray (N 7), very finely crystalline, very thick-bedded; forms steep slope with small cliffs	16.4
Distance above base of section: 1,555.9 feet.	
Jack Valley Member	
Thickness: 10.0 feet.	
28. Dolostone, brownish-black (5 YR 2/1) to dark-gray (N 3), weathers brownish gray (5 YR 4/1) to medium gray (N 5), microcrystalline, thick-bedded; chert very common, similar lithology to chert in Unit No. 27; forms steep, semicovered slope with small ledges and cliffs; well-preserved rugose and tabulate corals, USNM loc. 19324	10.0
Distance above base of section: 1,5455.9 feet.	
Portage Canyon Member	
Thickness: 199.6 feet.	
27. Dolostone, dark-gray (N 3) to dark brownish-gray (5 YR 3/1),	

	Unit Thickness (feet)
weathers medium gray (N 5) to medium brownish gray (5 YR 5/1), very finely crystalline, very thick-bedded; medium-gray to light gray chert, in irregular nodules and seams, follows bedding; forms steep, semicovered slope with cliffs; well-preserved halysitid, favositid, and syringoporid corals abundant in upper half, some brachiopods also present, USNM locs. 19322, 19323	199.6

High Lake Member (Type Section)

Thickness: 353.8 feet.

26. Dolostone, light-gray (N 7), weathers light gray (N 7), finely crystalline, very thick-bedded; small thinly laminated lenses, some deformed, some react with dilute HCl; forms steep semicovered slope; weathered halysitid corals in float, probably from above, USNM locs. 19321 (T), 19320	175.2
25. Dolostone—tongue of No. 27 above, dark-gray (N 3), weathered medium gray (N 5), very finely crystalline, very thick bedded; contains seams of light gray chert; thin bedded in part; forms steep, semicovered, ledgy slope; halysitid corals, brachiopods, and a cephalopod in lower one-half, USNM locs. 19316 (T), 19317, 19318, 19319	44.9
24. Dolostone, light-gray (N 7), weathers light gray (N 7), finely crystalline, medium-bedded to very thick-bedded; contains some chert in irregular nodules; contains vugs 0.5-1 mm in diameter; becomes more dense and darker in color in upper part, medium dark gray, weathers medium gray; forms steep, semicovered, ledgy slope; very poorly preserved brachiopods and pelmatozoan remains sparsely scattered throughout, some well-preserved fossils in cherty zones, USNM locs. 19312, 19313, 19314, 19315	133.7

Distance above base at section: 992.5 feet.

Tony Grove Lake Member (Type Section)

Thickness: 625.2 feet.

23. Dolostone, medium dark-gray (N 4), weathers medium light gray (N 6), lightly mottled, very finely crystalline, very thick-bedded; randomly oriented, small seams of dolomite or quartz throughout; small chert nodules follow bedding in upper half; forms steep, semicovered, ledgy slope, contains poorly pre-	

	Unit Thickness (feet)
served pelmatozoan columnals, brachiopods, and corals, USNM locs. 19310, 19311	56.3
22. Covered; medium-gray (N 5) dolostone float; forms moderate slope; some brachiopods and corals, USNM locs. 19308, 19309	55.8
21. Dolostone, dark-gray (N 3), weathers medium gray (N 5), mottled, very finely to finely crystalline, medium-bedded to very thick-bedded; thickly laminated; contains highly weathered brownish-gray chert in randomly oriented irregular nodules, some nodules contains small vugs filled with crystals of quartz; small seams of dolomite or quartz in upper part; forms moderately flat, ledgy slope; some well-preserved rugose corals in lower half and one halysitid, brachiopods scattered throughout, USNM locs. 19306, 19307	265.8
20. Dolostone, medium light-gray (N 6), weathers light gray (N 7), very finely crystalline, thin-bedded; forms moderately steep, ledgy slope; USNM loc. 19305	9.9
19. Dolostone, dark-gray (N 3), weathers medium gray (N 5), mottled, very finely to finely crystalline, thin-bedded to thick-bedded; vugs 1-3 cm in diameter, some filled with crystals of quartz or dolomite in upper part; forms moderately steep, ledgy slope; poorly preserved brachiopods and rugose corals in lower half, corals well-preserved near top, USNM locs. 19303, 19304	171.8
18. Dolostone, medium light-gray (N 6), weathers light gray (N 7), very finely crystalline, thin-bedded; weathered surfaces react mildly with dilute HCl; forms steep, semicovered, ledgy slope; randomly oriented rugose corals common, USNM loc. 19302	54.6
17. Dolostone conglomerate, dark-gray (N 3) to medium dark-gray (N 4), weathers medium gray, very finely crystalline, thick-bedded; subangular to subrounded pebbles (0.5-2″) appear to have weathering rind; frosted quartz sand grains common at top; unoriented, poorly preserved, broken and abraded tabulate and rugose corals common, brachiopods less noticeable on outcrop surface, USNM locs. 19300, 19301	11.0
Distance above base of section: 367.3 feet.	

Fish Haven Dolostone

Thickness: 487 feet (estimated).

	Unit Thickness (feet)
Bloomington Lake Member	
Thickness: 276.6 feet.	
16. Dolostone, dark-gray (N 3) weathers medium gray (N 5), very finely crystalline, thick-bedded; mottled in upper part; very large bodies of calcite, some oriented perpendicular to bedding; forms steep, semicovered slope	44.8
15. Dolostone, dark-gray (N 3), weathers medium gray (N 5), mottled, very finely crystalline, medium-bedded to very thick-bedded; light brownish gray chert in irregular nodules in lower half; forms steep, ledgy slope; contains well-preserved rugose corals and brachiopods, USNM locs. 19297, 19298, 19299 ...	114.9
14. Dolostone, medium dark-gray (N 4), weathers medium gray (N 5), mottled, very finely crystalline, very thick-bedded; forms moderate, ledgy slope; contains indistinct, very poorly preserved brachiopods	7.7
13. Dolostone, medium dark-gray (N 4), weathers medium light gray (N 6), very finely crystalline, very thick-bedded; numerous vugs, 0.5-1 mm in diameter, some filled with calcite; forms moderate, ledgy slope	26.3
12. Dolostone, dark-gray (N 3), weathers medium gray (N 5), very finely crystalline, thick-bedded; contains vugs 0.5-1 mm in diameter; some irregular nodules of quartz or dolomite and calcite throughout; closely spaced, randomly oriented joints in some beds; joints react mildly with dilute HCl	16.4
11. Dolostone, medium-gray (N 5), weathers light gray (N 7), microcrystalline, thick-bedded; forms moderately flat, ledgy slope	8.6
10. Dolostone, medium dark-gray (N 4), weathers medium gray (N 5), appears to be mottled, very finely crystalline, thick-bedded; small seams of dolomite or quartz throughout; forms moderately flat slope; contains rugose and favositid corals, some stromatoporid-like fossils	28.4
9. Dolostone, medium-gray (N 5), weathers medium light gray (N 6), very finely crystalline, medium-bedded to thick-bedded; weathered surfaces have salt and pepper-like texture caused by numerous small vugs; forms moderately flat, ledgy slope; small indeterminant fossils abundant, USNM loc. 19296	29.5
Distance above base of section: 90.7 feet.	

Deep Lakes Member	Unit Thickness (feet)
Thickness: 90.7 feet.	
8. Dolostone, brownish-black (5 YR 2/1), weathers brownish gray (5 YR 4/1), very finely crystalline, thick-bedded; contains seams of dolomite or quartz	1.1
7. Dolostone, light-gray (N 7), weathers light gray (N 7), very finely crystalline, thick-bedded; vugs 0.5-1 mm in diameter, some filled with calcite, forms moderately flat, ledgy slope; contains rugose corals	7.7
6. Dolostone, medium dark-gray (N 4), weathers medium light gray (N 6), very finely crystalline, very thick-bedded; calcite nodules 0.5-2 cm in diameter; forms moderately steep, ledgy slope; poorly preserved rugose corals near top	14.2
5. Dolostone, medium light-gray (N 6), weathers light gray (N 6), very finely crystalline, medium-bedded; thickly laminated; contains vugs 0.5 mm in diameter, some filled with calcite; very poorly preserved brachiopod and gastropod remains, and some stromatoporid-like organisms in bioclastic beds, USNM locs. 19294, 19295	9.8
4. Dolostone, medium light-gray (N 6), weathers medium light gray (N 6), finely crystalline, thick-bedded; mottled in part; small calcite seams throughout; some areas react mildly with dilute HCl; forms moderately flat, ledgy slope; poorly preserved brachiopods, corals, and cephalopods, USNM loc. 19293	30.6
3. Covered; medium light gray (N 6) dolostone float	12.0
2. Dolostone, medium-gray (N 5), weathers medium light gray (N 6), finely crystalline, thick-bedded; forms moderately flat, ledgy slope	4.4
1. Dolostone, medium dark-gray (N 4), weathers medium gray (N 5), mottled; very finely crystalline, thick-bedded; forms moderately flat ledgy slope; USNM loc. 19292	10.9
Base of measured section.	
Paris Peak Member	
Thickness: 120 feet (estimated).	
Dolostone, dark-gray (N 3), weathers dark gray (N 3) to medium dark gray (N 4), the former predominates, very finely to finely crystalline, thick-bedded; USNM loc. 19291	

Swan Peak Formation

SOUTHERN LAKESIDE MOUNTAINS SECTION

The section was measured in two areas about 6.3 miles north northeast of Delle, Utah. (1) Fish Haven and lower part of the Laketown Dolostones beginning and ending in the SW 1/4 SW 1/4 sec. 33, T. 2 N., R. 8 W.; and (2) upper part of the Laketown Dolostone beginning in the NE 1/4 NW 1/4 sec. 3, T. 1 N., R. 8 W.; ending in the SE 1/4 SW 1/4 sec. 3, T. 1 N., R. 8 W. This region was mapped by J.C. Young (1955).

	Unit Thickness (feet)
Water Canyon Formation	
Distance above base of section: 1,237.7 feet.	
Laketown Dolostone	
Thickness: 1,021.4 feet.	
Portage Canyon Member	
Thickness: 35.5 feet.	
39. Covered; medium dark-gray and medium-gray dolostone float; contact with overlying formation occurs in covered interval	5.8
38. Dolostone, medium dark-gray (N 4), weathers medium gray (N 5) to medium light gray (N 6), mottled, microcrystalline, thick-bedded (1-2′); reacts mildly with dilute HCl; some nodular clusters of coarsely crystalline dolomite up to 1 cm in diameter; thin seams of quartz or dolomite common; sparse, poorly preserved brachiopods, USNM loc. 19048	2.5
37. Dolostone, dark-gray (N 3), weathers medium gray (N 5), microcrystalline to very finely crystalline, thick-bedded (1-2′); chert in some small nodules throughout; weathers to a meringue surface; nodular clusters of dolomite crystals up to 1 cm in diameter sparsely scattered throughout	5.6
36. Dolostone, dark-gray (N 3), weathers medium dark gray (N 4), microcrystalline to very finely crystalline, medium-bedded to very thick-bedded, the former predominates; weathers to a meringue surface; reacts mildly with dilute HCl; small clusters of more coarsely crystalline dolomite common	3.1
35. Dolostone, medium-gray (N 5), weathers medium gray (N 5), very finely crystalline, thick-bedded; weathers to a meringue	

	Unit Thickness (feet)
surface; reacts slightly with dilute HCl; small, nodular clusters of dolomite crystals throughout; small vugs common, some filled with crystals of dolomite	6.3
34. Dolostone, dark-gray (N 3), weathers medium gray (N 5), very finely crystalline, medium-bedded to very thick-bedded (0.5-4′), the latter predominates; weathers to a meringue surface; fracture cleavage; reacts actively with dilute HCl; small, nodular clusters of dolomite crystals common; small fractures filled with crystals of calcite; forms moderate, ledgy slope; poorly preserved pelmatozoan columnals or dasycladaceous algae and brachiopods (?) sparsely scattered throughout, USNM loc. 19047	12.0
Distance above base of section: 1,202.2 feet.	
High Lake Member	
Thickness: 369.1 feet.	
33. Covered; moderate sized boulders of varying lithologies cover slope, light gray ones predominate in lower half and dark ones in upper half	25.7
32. Dolostone, light-gray (N 7), weathers light gray (N 7), medium to coarsely crystalline, very thick-bedded	8.4
31. Covered; medium-gray to light olive-gray dolostone float with some laminated fragments, chert appears to be less common than below; poorly preserved, silicified tabulate and rugose corals in one outcrop, USNM loc. 19039	48.1
30. Dolostone, medium-gray (N 5) to light-gray (N 7), weathers medium gray (N 5), finely crystalline, very thick-bedded (2-6′); light brownish gray (5 YR 6/1) chert abundant; sparsely scattered vugs, some filled with authigenic crystals of quartz	12.7
29. Dolostone, medium dark-gray (N 4), weathers brownish gray (5 YR 4/1), finely to medium-crystalline, very thick-bedded; indistinctly laminated in part; chert sparse; joints and fractures abundant, possible fault; vugs 1 mm to 1 cm in diameter sparsely scattered throughout; mottled toward top; Lake Bonneville conglomerate with calcareous cement common near top; forms gentle, semicovered, cliffy slope	57.6
28. Dolostone, medium light-gray (N 6), weathers medium brown-	

	Unit Thickness (feet)
ish gray (5 YR 5/1), medium-crystalline, very thick-bedded (3-6'); chert beds common in middle part; contains abundant silicified, gobular masses; poorly preserved pelmatozoan columnals or dasycladaceous algae common, some favositid corals	50.4
27. Dolostone, medium gray (N 5), very finely to finely crystalline, very thick-bedded; indistinctly laminated; large vugs 1-8 cm in diameter abundant; some rust colored stains	12.1
26. Dolostone, same lithology as unit No. 24, but less chert	44.0
25. Covered; light-gray dolostone float, large chert-bearing boulders common	20.4
24. Dolostone, medium dark-gray (N 4), weathers medium light gray (N 6), finely to medium-crystalline, very thick-bedded; some rust colored stains on weathered surfaces; vugs, some filled with authigenic crystals of quartz common; chert nodules common throughout; forms semicovered, cliffy slope with large chert-bearing boulders	11.8
23. Covered; gray dolostone float, some very large boulders from units above; forms moderate slope	55.8
22. Dolostone, medium-gray (N 4), weathers light olive gray (5 Y 6/1), finely to medium-crystalline, very thick-bedded; weathers to a meringue surface; vugs common throughout; small nodules of chert sparse; forms gentle slope; poorly preserved dolomitized brachiopods (?), pelmatozoan columnals or dasycladaceous algae, and halysitid remains sparsely scattered throughout, some silicified brachiopods, USNM loc. 19040	21.8
Distance above base of section: 833.0 feet.	

TRAVERSE MOVED TO SOUTHEAST ONE-HALF MILE.

Tony Grove Lake Member

Thickness: 616.7 feet.

21. Dolostone, medium dark-gray (N 4), weathers light olive gray (5 Y 6/1) to medium gray (N 5), finely crystalline, thick-bedded; laminated, light laminae more finely crystalline than dark ones; small vugs filled with crystals of dolomite; rust colored stained areas, sparse; weathers to a meringue surface; forms semicovered, steep slope; poorly preserved pelmatozoan columnals or dasyclad algae abundant near top	167.0

		Unit Thickness (feet)
20.	Interbedded light-gray and dark-gray dolostone, (1) light beds, medium dark-gray (N 4) to medium light-gray (N 6), weathers medium gray (N 5) to light gray (N 7), thick-bedded; laminated in part; abundant small nodules of calcite and dolomite form speckled appearance on weathered surfaces in lower half; (2) dark beds, dark gray (N 3), weather medium dark gray (N 4) to medium gray (N 5), thick-bedded to very thick-bedded (1-6′); laminated, dark laminae more coarsely crystalline than light laminae; weathered surfaces react mildly with dilute HCl; both types very finely to finely crystalline; brownish gray chert in thin seams common throughout; vugs 0.5-4 cm in diameter sparsely scattered throughout	92.0
19.	Dolostone, dark-gray (N 3), weathers medium gray (N 5), very finely crystalline, thick-bedded; chert common, occurs in small nodules (0.2-3 cm in diameter) and discontinuous seams; small fractures common, some filled with calcite; dolomitized and silicified brachiopods common or abundant throughout, rare, poorly preserved halysitid and favositid corals, USNM locs. 19041, 19042	116.6
18.	Dolostone, medium dark-gray (N 4), weathers medium gray (N 5) to light gray (N 7), mottled; microcrystalline to very finely crystalline; bioclastic lenses contain fragments of corals and brachiopods (?); forms very steep, ledgy slope	45.3
17.	Dolostone, medium dark-gray (N 4), weathers medium gray (N 5) to medium light gray (N 6), mottled; very finely to finely crystalline, thick-bedded; weakly laminated and banded; small vugs common; chert common in part; weathers to a meringue surface; forms very steep, ledgy slope	65.2
16.	Dolostone, dark-gray (N 3), weathers light gray (N 7) to medium gray (N 5), very finely crystalline, thick-bedded to very thick-bedded (2-4′); some bioclastic lenses and beds containing silicified and dolomitized pelmatozoan columnals and brachiopod shells (?); small nodules of large crystals of dolomite; chert in thin seams sparsely scattered throughout, absent toward top; inconspicuously laminated, laminae alternate with bioclastic beds; vugs 0.5-3 cm in diameter common; weathers to a meringue surface; forms moderately steep; semicovered slope, some large boulders	130.4

Distance above base of section: 216.3 feet.

	Unit Thickness (feet)
Fish Haven Dolostone	
Thickness: 216.3 feet.	
Deep Lake and Bloomington Lake Members (undifferentiated)	
Thickness: 206.3 feet.	
15. Dolostone, dark-gray (N 3), weathers medium gray (N 5) to light gray (N 7), microcrystalline to very finely crystalline, thick-bedded; thinly laminated, lighter colored laminae more finely crystalline than darker laminae; some laminated areas-lenticular, small ones 8 mm long and about 0.5 mm thick ..	3.8
14. Dolostone, medium dark-gray (N 4), weathers light gray (N 7), microcrystalline, medium-bedded to thick-bedded (4″-2′); laminated in part; weathers to a meringue surface; forms moderately steep, semicovered ledgy slope	29.6
13. Dolostone, dark brownish-gray (5 YR 3/1), weathers medium dark gray (N 4) to light gray (N 6), finely crystalline, very thick-bedded; mottled and laminated in part; mottled areas formed by small clusters of coarsely crystalline, dark dolomite; some thin discontinuous seams of light gray (N 7) to very light gray (N 8) chert, the latter predominates	10.3
12. Dolostone, medium dark-gray (N 4), weathers medium gray (N 5), very finely to finely crystalline, very thick-bedded; chert common toward top; weathers to a meringue surface; small vugs up to 3 mm in diameter, some filled with crystals of dolomite, sparsely scattered throughout; porous texture toward top; reacts mildly with dilute HCl	20.9
11. Covered; gray dolostone float, small calcareous boulders from old Lake Bonneville shore-line	13.4
10. Interbedded light- and dark-gray dolostone; (1) dark beds, grayish-black (N 2), weather medium dark gray (N 4) to light gray (N 7), microcrystalline to very finely crystalline, thick-bedded to very thick-bedded; (2) light beds, dark brownish-gray (5 YR 3/1), weather light gray (N 7), microcrystalline to very finely crystalline, thick-bedded (1-2′); black chert (N 3) common in darker colored beds; bioclastic beds and lenses common throughout; some small nodules of dolomite and quartz; randomly oriented dolomite seams common; weathers to a meringue surface; mottled in lower part; forms steep slope with small cliffs; fairly well-preserved tabulate and rugose corals throughout, brachiopods common in darker beds toward top, USNM locs. 19044, 19045, 19046	39.2

	Unit Thickness (feet)
9. Dolostone, dark-gray (N 3), weathers medium dark gray (N 4) to light gray (N 7), mottled by microcrystalline material; weathers to a meringue surface; forms steep, semicovered slope; some large boulders from units above	24.9
8. Dolostone, medium dark-gray (N 4), weathers medium light gray (N 6), microcrystalline, thin-bedded to thick-bedded (0.5-1.5′); laminated; interbedded with some lighter colored dolostone beds; black chert nodules in lower part; poorly preserved silicified corals, USNM loc. 19043	12.4
7. Covered; medium-gray dolostone float	10.8
6. Dolostone, dark-gray (N 3), weathers medium dark gray (N 4), microcrystalline, thick-bedded; fracture cleavage, some fractures filled with crystals of calcite; some very thin seams of quartz or dolomite	1.1
5. Dolostone, medium dark-gray (N 4), weathers medium light gray (N 6), microcrystalline, thick-bedded (2′); some small fractures filled with crystals of calcite; weathers to a meringue surface	2.7
4. Covered; gray dolostone float; forms moderately steep slope	35.6
3. Dolostone, dark-gray (N 3), weathers medium light gray (N 6), very finely crystalline, medium-bedded; small irregular nodules and thin seams of dolomite common; weathers to a meringue surface	0.6
2. Dolostone, dark brownish-gray (5 YR 3/1), weathers light gray (N 7), microcrystalline, medium-bedded; some thin discontinuous seams of dolomite crystals; weathers to a meringue surface	0.6
Distance above base of section: 10 feet.	

Paris Peak Member

Thickness: 10 feet (estimated).

1. Dolostone, dark-gray (N 3), weathers medium dark gray (N 4), very finely crystalline, thick-bedded; near base abundant, subrounded, very fine-sized, frosted quartz sand grains; black chert in thin seams and thin beds common toward top	10.00 (est.)

Swan Peak Formation

BARN HILLS SECTION

The section was measured in two areas about 2 miles north northwest of Ibex Well bench mark 4779 in the Barn Hills (Ibex Hills), Confusion Range, Utah. (1) lower part of the Ely Springs Dolostone beginning and ending in the SE 1/4 NW 1/4 sec. 26, T. 21 S., R. 14 W.; and (2) upper part of the Ely Springs and Laketown Dolostones beginning in the NE 1/4 SW 1/4 sec. 26, T. 21 S., R. 14 W.; ending in the NE 1/4 NE 1/4 sec. 34, T. 21 S., R. 14 W. See Fig. 3 of Budge and Sheehan (1980).

Sevy Dolostone

Distance above base of section: 1,653.2 feet.

Laketown Dolostone

Thickness: 1,100.7 feet.

	Unit Thickness (feet)
Decathon Member	
Thickness: 3.0 feet (estimate).	
44. Dolostone, light olive-gray (5 YR 6/1), weathers light gray (N 7), microcrystalline; poorly preserved corals near base, USNM loc. 19552	3.0 (est.)
Distance above base of section: 1,650.2 feet.	
Jack Valley Member	
Thickness: 224.9 feet.	
43. Thick bed of dark-gray chert	3.0
42. Dolostone, dark-gray (N 3), weathers brownish gray (5 YR 4/1), microcrystalline, thin-bedded to thick-bedded (2-6″ to 3′), the latter predominates toward top; finely laminated in part; silicified brachiopods abundant, USNM loc. 19551	62.3
41. Dolostone, same lithology as Unit No. 39 but inconspicuously mottled; yellow paint marker No. 2947; abundant brachiopods throughout, USNM loc. 19550	89.6
40. Dolostone, medium-gray (N 5), weathers medium light gray	

	Unit Thickness (feet)
(N 6), faintly mottled, microcrystalline, medium-bedded to thick-bedded; dark gray (N 4) chert in discontinuous, thin beds and irregular nodules, common in lower half	9.4
39. Argillaceous dolostone, medium dark-gray (N 4), weathers medium brownish gray (5 YR 5/1), microcrystalline to very finely crystalline, medium-bedded to thick-bedded (6″-3′); brachiopods common to abundant, USNM loc. 19549	60.5

Distance above base of section: 1,425.3 feet.

Gettel Member (Type Section)

Thickness: 38.3 feet.

38. Argillaceous dolostone, light olive-gray (5 Y 6/1), weathers light brownish gray (5 YR 6/1), very finely to finely crystalline, medium-bedded to thick-bedded (6″-2′); darker colored in upper part; irregular nodules of chert rare in upper two-thirds; weathers to a meringue surface; forms moderately flat, semi-covered, ledgy slope; silicified brachiopods abundant in places and some halysitid corals, USNM locs. 19546, 19547, 19548 .	38.3

Distance above base of section: 1,386.9 feet.

High Lake Member

Thickness: 162.8 feet.

37. Dolostone, light olive-gray (5 Y 6/1), weathers light olive gray (5 Y 6/1), finely crystalline to medium-crystalline, very thick-bedded (3-10′), the latter predominates toward top; abundant light gray (N 6) to light olive gray (5 Y 6/1) chert in beds 1-6 ins. thick, interbedded with dolostone beds in lower half; forms rugged, moderately flat slope along ridge crest; U.S. General Land Office Survey 1925 marker, sections 26, 27, 34, and 35 of T. 21 S. and R. 14 W., at middle of unit; silicified tabulate corals, brachiopods, dasycladaceous algae, and pelmatozoan columnals sparsely scattered throughout, USNM locs. 19541, 19542, 19543, 19544, 19545	162.8

Distance above base of section: 1,224.0 feet.

Tony Grove Lake Member

Thickness: 671.6 feet.

36. Dolostone, dark brownish-gray (5 YR 3/1), weathers brownish

		Unit Thickness (feet)
	gray (5 YR 4/1), finely crystalline, thick-bedded to very thick-bedded (1-6′), the latter predominates toward top; mottled in upper half; randomly oriented, small fractures, some filled with crystals of calcite common; light gray (5 Y 6/1) chert common throughout, occurs in large nodules, and discontinuous beds 1 in. thick which alternate with dolostone beds 2-4 ins. thick; forms moderately flat, ledgy, and cliffy slope; pelmatozoan fragments, encrusting bryozoa and halysitid corals common, USNM loc. 19540	84.9
35.	Dolostone, brownish-gray (5 YR 4/1), weathers light brownish gray (5 YR 6/1), very finely crystalline, thick-bedded to very thick-bedded; sparsely scattered brownish-gray weathering nodules of chert; reacts mildly with dilute HCl; forms moderately flat, ledgy slope; silicified fragments of tabulates and dasyclad algae sparsely scattered throughout, USNM loc. 19539	44.7
34.	Dolostone, medium dark-gray (N 4), weathers brownish gray (5 YR 4/1), very finely to finely crystalline, thick-bedded to very thick-bedded (1-4′); mottled in part; argillaceous; less distinctly laminated than rest of interval; sparsely scattered, small nodules of brownish gray (5 YR 4/1) chert	42.1
33.	Dolostone, same lithology as Unit No. 24; same thin chert beds and irregular nodules in upper half; yellow paint marker No. 105 (?); bioclastic beds and lenses containing pelmatozoan hash, sparsely scattered, poorly preserved rugose and tabulate corals, abundant brachiopods, and fragments of dasyclad algae, USNM locs. 19536, 19537, 19538	43.5
32.	Oolitic dolostone, same lithology as Unit No. 30	24.7
31.	Dolostone, same lithology as Unit No. 24	11.9
30.	Oolitic dolostone, dark brownish-gray (5 YR 3/1), weathers brownish gray (5 YR 4/1), very finely crystalline to finely crystalline, thick-bedded; indistinctly laminated; silicified oolites 0.75 mm in diameter compose 75% of rock	5.8
29.	Dolostone, same lithology as Unit No. 24	63.6
28.	Dolostone, medium olive-gray (5 Y 5/1), weathers medium light gray (N 6), microcrystalline, very thick-bedded; mottled in part; sedimentary breccia common; weathers to a meringue surface; forms moderate, ledgy slope	25.0

	Unit Thickness (feet)
27. Oolitic dolostone, same lithology as Unit No. 23, but oolites compose up to 80% of rock, oolites range from 0.5 to 1.5 mm in diameter	42.7
26. Dolostone, same lithology as Unit No. 24	7.5
25. Dolostone, medium dark-gray (N 4), weathers medium gray (N 5), microcrystalline, thick-bedded; lower half with both oolites and pisolites (of definite algal origin) from 1 to 6 mm in diameter; in upper half of unit oolites with 1 mm diameter predominant; small randomly oriented fractures filled with crystals of calcite	8.6
24. Dolostone, dark brownish-gray (5 YR 3/1), weathers dark brownish gray (5 YR 3/1), very finely to finely crystalline, thick-bedded (1-3′), the latter predominates; distinctly laminated and banded in part, lighter colored laminae of finely crystalline material, darker ones slightly coarser; bioclastic lenses common; forms moderately steep, ledge slope with small cliffs	33.6
23. Dolostone, medium dark-gray (N 4), weathers medium gray (N 5), very finely crystalline, very thick-bedded; thickly laminated; forms moderately steep ledge slope	12.1
22. Dolostone, medium-gray (N 5), weathers medium olive gray (5 Y 5/1), very finely crystalline, very thick-bedded (3-5′); laminated; oolitic in part	87.3
21. Dolostone, dark-gray (N 3) to medium dark-gray (N 4), weathers brownish gray (5 YR 4/1) to medium gray (N 5) with slight brownish tint, microcrystalline to very finely crystalline, very thick-bedded, oolites 0.05-1 mm in diameter sparsely scattered throughout lower half, abundant at top (80% of rock); some brownish gray quartz sand grains 0.5-1 mm in diameter common near base; sparse, randomly oriented, small fractures filled with crystals of calcite; forms steep, rugged, ledge slope	46.4
20. Dolostone, same lithology as Unit No. 18	14.4
19. Dolostone, brownish-gray (5 YR 4/1), weathers olive gray (5 Y 4/1), finely crystalline, thick-bedded; oolites 0.5-1 mm in diameter, sparsely scattered throughout; laminated in part; weathered surfaces react mildly with dilute HCl; USNM loc. 19535	11.6

	Unit Thickness (feet)
18. Dolostone, dark-gray (N 3), weathers brownish gray (5 YR 4/1), finely crystalline, thick-bedded; sparse thin beds and irregular nodules of chert; mottled in part, thickly laminated beds alternate with thin lenses and beds of bioclastic material; forms steep, ledgy, and cliffy slope; poorly preserved dolomitized rugose and tabulate corals, brachiopods, and one monoplacophoran-like fossil sparsely scattered throughout bioclastic units, USNM locs. 19533, 19534	60.5

Distance above base of section: 552.4 feet.

Ely Springs Dolostone

Thickness: 552.4 feet.

Floride Member

Thickness: 133.9 feet.

17. Dolostone, brownish-gray (5 YR 4/1), weathers brownish gray (5 YR 4/1), mottled, very finely crystalline; thick-bedded; possible worm burrows filled with lighter colored material than surrounding dark matrix	8.1
16. Dolostone, medium dark-gray (N 4), weathers light olive gray (5 Y 6/1), microcrystalline, thick-bedded, thinner units predominate; weathers to a meringue surface with small solution pits; forms steep, semicovered, ledgy slope	15.1
15. Dolostone, medium dark-gray (N 4), weathers light olive gray (5 Y 6/1) to brownish gray (5 YR 4/1), very thick-bedded (5′); worm-like burrows common in lower half; irregular nodules of chert common in upper half; pisolitic; indistinct, thin conglomerates common in some parts, light colored lithic fragments 2-12 mm in diameter surrounded by dark matrix	8.8
14. Dolostone, medium dark-gray (N 4), weathers brownish gray (5 YR 4/1), very finely to finely crystalline, medium-bedded; thickly laminated, laminae alternate with bioclastic beds and lenses (similar to Tony Grove Lake Member above); covered in upper part; forms steep, ledgy slope	14.5
13. Dolostone, medium-gray (N 5), weathers light olive gray (5 Y 6/1), finely crystalline, thick-bedded; laminated in part	13.5
12. Dolostone, dark brownish-gray (5 YR 5/1), weathers brownish gray (5 YR 4/1), microcrystalline, thick-bedded; weathers to	

	Unit Thickness (feet)
a meringue surface; speckled clusters of larger light colored dolomite crystals, 0.5-2 mm in diameter; sparse pisolites of possible algal origin; forms steep, semicovered, ledgy slope; USNM loc. 19532	23.6
11. Dolostone, medium dark-gray (N 4) with slight brownish tint, weathers brownish gray (5 YR 4/1), very finely crystalline, thick-bedded; small clusters of dolomite crystals, sparse; very poorly preserved, low-spired gastropods common	1.1
10. Dolostone, medium-gray (N 5), weathers medium light gray (N 6), microcrystalline, thick-bedded; small nodules of chert up to 1 mm in diameter sparsely scattered throughout	4.1
9. Interbedded light- and dark-gray dolostone, (1) light beds similar to lithology of Unit No. 8; (2) dark beds, dark brownish-gray (5 YR 3/1), weather brownish gray (5 YR 4/1); both types microcrystalline, thick-bedded (1-1.5′) to very thick-bedded (1-4′), the latter predominates toward top	21.4
8. Dolostone, medium-gray (N 5), weathers light olive gray (5 Y 6/1), microcrystalline, medium-bedded (4″-1′); finely laminated; weathers to a meringue surface; tiny solution pits on weathered surfaces common, small nodules of brownish-gray (5 YR 4/1) chert abundant near base and sparsely scattered toward top; forms semicovered, ledgy slope	23.3
Distance above base of section: 418.5 feet.	

Lost Canyon Member

Thickness: 231.2 feet.

7. Dolostone, dark-gray (N 3), weathers brownish gray (5 YR 4/1), very finely crystalline, thick-bedded to very thick-bedded (2-6′); mottled in part; sparsely scattered, small nodules of black chert; small fractures react with dilute HCl; weathers to a meringue surface; forms steep, cliffy slope; pelmatozoan fragments less than 1 mm in diameter sparsely scattered; USNM locs. 19556, 19567	152.6
6. Oolitic dolostone, dark brownish-gray (5 YR 3/1), weathers light brownish gray (5 YR 6/1), microcrystalline; oolites, 0.5 mm in diameter, make up more than 50% of rock; randomly oriented small fractures react mildly with dilute HCl	1.0

	Unit Thickness (feet)
5. Interbedded light- and dark-gray dolostone; (1) light beds, olive-gray (5 Y 4/1), weather light olive gray (5 Y 6/1), medium bedded (1′); (2) dark beds, brownish-black (5 YR 2/1), weather brownish gray (5 YR 4/1), thick-bedded (1.5′); both types microcrystalline; laminated in part; forms moderately steep, semicovered, ledgy slope	77.6

Distance above base of section: 187.2 feet.

Barn Hills Member (Type Section)

Thickness: 155.8 feet.

4. Dolostone, dark-gray (N 3), weathers dark gray (N 3), thin-bedded to medium-bedded (1-6″), the former predominates; laminated; dolomitized brachiopods, USNM loc. 19555	22.7
3. Interbedded light- and dark-gray dolostone, the latter predominates in upper half, (1) light beds, brownish-gray (5 YR 6/1), laminated in part; (2) dark beds, dark brownish-gray (5 YR 3/1), weather brownish gray (5 YR 4/1), mottled in part; both types microcrystalline; thick-bedded (1-3′); weather to a meringue surface; sparsely scattered chert in thin beds up to 1 in. thick; forms moderately steep, semicovered, cliffy slope; cephalopods toward base, gastropods in middle, and brachiopods and corals toward top, USNM locs. 19553, 19554	133.0

Distance above base of section: 31.4 feet.

Ibex Member (Type Section)

Thickness: 31.4 feet.

2. Dolostone, medium dark-gray (N 4), weathers light brownish gray (5 YR 6/1), microcrystalline, medium-bedded to thick-bedded (6″-1′); laminated; argillaceous in part; chert in discontinuous beds and nodules common, weathers in part to a meringue surface; forms moderate, semicovered slope	21.4
1. Quartzose dolostone, very light-gray (N 8), weathers very light brownish gray (5 YR 7/1), thick-bedded; quartz sand grains well-rounded and frosted	10.0 (est.)

Eureka Quartzite

SILVER ISLAND MOUNTAINS SECTION

The Section was measured north of Lost Canyon, about 5 miles northwest of McKeller Ranch in the Silver Island Mountains, Utah, beginning in the NE 1/4 of unsurveyed sec. 25, T. 3 N., R. 18 W.; ending in the NE 1/4 of unsurveyed sec. 30, T. 3 N., R. 17 W. (see Schaeffer, 1960, Pl. 1A).

	Unit Thickness (feet)
Roberts Mountains Formation	
Dolomitic facies of the Roberts Mountains Formation (part):	
29. Argillaceous dolostone, grayish-black (N 2), weathers dark gray (N 3) to medium dark gray (N 4), microcrystalline, thin-bedded; distinctly and thinly laminated; brownish-gray (5 YR 4/1) chert in thin beds abundant throughout, many beds brecciated and deformed; contact with underlying Unit No. 28 appears to be irregular.	
Distance above base of section: 636.4 feet.	
TRAVERSE MOVED TO EAST SEVERAL HUNDRED FEET BECAUSE OF SMALL FAULTS.	
Laketown Dolostone (?)	
Thickness: 192.2 feet.	
Tony Grove Lake Member (?)	
Thickness: 192.2 feet.	
28. Dolostone, medium dark-gray (N 4), weathers medium gray (N 5), lightly mottled, very finely crystalline, thick-bedded to very thick-bedded (1-6'), the latter predominates; vuggy; small clusters of dolomite crystals common; forms moderately steep, semicovered, ledgy slope	40.7
27. Dolostone, dark-gray (N 3) to medium dark-gray (N 4), weathers dark gray (N 3), finely crystalline, thick-bedded; some areas with seams and clusters of dolomite, reacts mildly with dilute HCl; vugs 2 mm to 3 cm in diameter common or abundant (average about 1-2 cm); abundant, randomly oriented, thin seams of dolomite throughout	28.9
26. Dolostone, grayish-black (N 2), weathers dark gray (N 3), finely	

	Unit Thickness (feet)
to medium-crystalline, the former predominates, very thick-bedded; contains small vugs throughout; abundant, randomly oriented thin seams of white dolomite throughout, some may represent abundant, very poorly preserved brachiopod shells	11.0
25. Dolostone, dark-gray (N 3), weathers dark brownish gray (5 YR 3/1), very finely crystalline, thick-bedded to very thick-bedded (2-6′), laminated in part, some thin seams of chert between laminae; partly laminated, fractured in part, some small fractures filled with calcite; some crystals of dolomite up to 1.5 mm in diameter on weathered surfaces; randomly oriented, thin seams of dolomite common in upper part; forms steep, cliff-like outcrops; one very poorly preserved dolomitized halysitid and indeterminant tube structures; USNM loc. 19122 .	29.5
24. Argillaceous dolostone interbeds, medium dark-gray (N 4), weathers medium gray (N 5), microcrystalline, thick-bedded; some brownish quartz sand grains or deeply weathered chert nodules present; very poorly preserved algal stromatolite or stromatoporid-like structures toward top; USNM loc. 19121	8.7
23. Dolostone, dark-gray (N 3), weathers medium gray (N 5), microcrystalline, thin-bedded to very thick-bedded (2″-5′), the latter predominates; mottled in part; oolites and frosted sand grains at base; weathers to a meringue surface; thin discontinuous seams of dolomite common; small angular chert-like concretions sparsely scattered throughout; small vugs 2 mm to 1 cm in diameter filled with calcite crystals common in lower half; bioclastic beds and lenses containing small pelmatozoan fragments common; forms steep, ledgy, and cliffy slope; very poorly preserved, dolomitized brachiopods, rugose corals, and worm tube structures toward base, sparse; USNM locs. 19120, 19402	73.1
Distance above base of section: 444.1 feet.	

Ely Springs Dolostone

Thickness: 444.1 feet.

Floride Member

Thickness: 94.1 feet.

22. Covered; medium-gray, laminated, argillaceous dolostone float, large boulders of float near top derived from overlying

	Unit Thickness (feet)
Laketown (?) Dolostone; oolites and frosted quartz sand grains common in upper 5 feet; forms moderately steep, non-resistant, covered slope; brachiopods, USNM locs. 19400, 19401	94.1

Distance above base of section: 349.9 feet.

BECAUSE OF SMALL FAULTS TRAVERSE MOVED TO THE NORTH-WEST ACROSS SMALL CANYON.

Lost Canyon Member (Type Section)

Thickness: 216.9 feet.

21. Dolostone, dark-gray (N 3), weathers dark gray (N 3), very finely to finely crystalline, thick-bedded to very thick-bedded (1-4′); chert common in upper part; bioclastic beds and lenses common, containing some corals; probable algal pisolites 3-6 mm in diameter common; reacts actively with dilute HCl; forms gentle, partly covered slope; dolomitized corals throughout, USNM locs. 19117, 19118, 19119	68.2
20. Dolostone, same lithology as Unit No. 18; grayish-black chert (N 2) common toward top; pelmatozoan, brachiopod, gastropod, and coral remains common, USNM locs. 19115, 19116 .	31.8
19. Dolostone, same lithology as Unit No. 17	1.4
18. Interbedded light- and dark-gray dolostone, (1) dark beds, grayish-black (N 2), weathers dark gray (N 3), mottled, microcrystalline, thick-bedded to very thick-bedded (1-5′); partly laminated; (2) light beds, medium-gray (N 5), weathers medium gray (N 5), mottled, microcrystalline, very thin-bedded to thick-bedded (0.5-3′); distinctly laminated, some laminae deformed; small fractures, some filled with quartz or dolomite	8.6
17. Dolostone, dark-gray (N 3), weathers dark gray (N 3) to medium gray (N 5), distinctly mottled, microcrystalline, thick-bedded (1-2′); randomly oriented, thin seams of quartz or dolomite; sparsely scattered, very poorly preserved favositid corals and pelmatozoan columnals	7.0
16. Dolostone, dark-gray (N 3), weathers dark gray (N 3), microcrystalline to very finely crystalline, thick-bedded; bioclastic beds and lenses common throughout; forms gentle, down-dip slope; one large nautiloid cephalopod at base	15.0

	Unit Thickness (feet)
15. Dolostone, dark-gray (N 3) to grayish black (N 2), weathers dark gray (N 3) to medium dark gray (N 4), microcrystalline to very finely crystalline, thick-bedded (1-2′); lightly laminated and mottled in part; chert common; weathers to a meringue surface; some small fractures filled with calcite; silicified and dolomitized brachiopods and rugose corals throughout, USNM locs. 19110, 19111, 19112, 19113, 19114	39.3
14. Interbedded light-gray and dark-gray dolostone, (1) light beds, dark-gray (N 3), weathers medium dark gray (N 4), microcrystalline, fracture cleavage; small seams of calcite common; thin-bedded; (2) dark beds, grayish-black (N 2), weather dark gray (N 3) to medium dark gray (N 4), microcrystalline, medium-bedded; thin seams of dolomite or quartz common; weathers to a meringue surface; fracture cleavage; darker toward top	6.4
13. Dolostone, grayish-black (N 2), weathers dark gray (N 3) to medium dark gray (N 4), microcrystalline, thin-bedded to medium-bedded (1-6″); some beds weather very thick-bedded; mottled in part; in lower half less chert than in Unit No. 12; becoming sparsely cherty in upper half; weathers to a meringue surface; thin seams of quartz or dolomite throughout; upper half partly laminated, some deformed and mixed; partly covered in middle	38.9

Distance above base of section: 133.0 feet.

TRAVERSE MOVED TO NORTHWEST ABOUT 150 FEET.

Barn Hills Member

Thickness: 39.5 feet.

12. Dolostone, grayish-black (N 2), weathers medium gray (N 5), microcrystalline, thin-bedded; partly laminated throughout; large, dark colored chert nodules; reacts mildly with dilute HCl	0.5
11. Covered; gray dolostone float	5.1
10. Dolostone, grayish-black (N 2), weathers dark gray (N 3), mottled, microcrystalline, thick-bedded (1-3′); reacts very mildly with dilute HCl; some thin seams of quartz or dolomite	0.7
9. Dolostone breccia, dark-gray (N 3), weathers medium dark gray (N 4), microcrystalline to very finely crystalline, thick-bedded; unit cut by fault of small displacement	5.0

	Unit Thickness (feet)
8. Dolostone, dark-gray (N 3), weathers dark gray (N 3), very finely crystalline, medium-bedded to thick-bedded, thinner bedded toward top; chert common toward top; reacts mildly with dilute HCl; forms gentle, partly covered slope	28.0
Distance above base of section: 93.4 feet.	

Ibex Member

Thickness: 93.4 feet.

7. Dolostone, medium dark-gray (N 4), weathers dark gray (N 3), very finely crystalline, thick-bedded (2-3′) to very thick-bedded near top; some bedding indistinct; chert in thin seams and nodules, sparse toward top; some areas react mildly with dilute HCl; medium-sized, subrounded and frosted quartz sand grains sparsely scattered throughout; weathers to a meringue surface; partly covered throughout; forms gentle slope; small, indeterminant rugose corals and pelmatozoan, one halysitid, USNM locs. 19108, 19109	33.5
6. Sandy, quartzic dolostone, medium dark-gray (N 4), weathers medium gray (N 5), medium-crystalline, medium-bedded; medium to fine-sized, subrounded to rounded quartz sand grains common; chert abundant in nodules	4.0
5. Dolostone, same lithology as Unit No. 3, but mostly thin-bedded; partly covered throughout; forms moderately steep slope; brachiopods, USNM loc. 19107	23.9
4. Covered; gray dolostone float	8.8
3. Dolostone, grayish-black (N 2), weathers medium dark-gray (N 4), microcrystalline, thin-bedded to medium-bedded (3″-1′); argillaceous in part; less chert than in Unit No. 1; some rust colored stains at small joints; small fractures filled with calcite; sparse very fine-sized quartz sand grains (?); poorly preserved pelmatozoan and brachiopod remains, USNM loc. 19106 ...	3.4
2. Covered; gray dolostone float	15.6
1. Sandy, quartz, dolostone, grayish-black (N 2), weathers medium dark gray (N 4), microcrystalline to very finely crystalline, medium-bedded to thick-bedded (6″-2′), the latter predominates; subangular to subrounded, frosted, clear or medium dark gray, fine- to medium-sized quartz sand grains make up	

	Unit Thickness (feet)
50% of rock; chert abundant in discontinuous seams and nodules; silicified brachiopods, gastropods, and corals, USNM loc. 19105	3.9

Eureka Quartzite

SOUTHERN EGAN RANGE SECTION I

The Section was measured about 2.9 miles northeast of the Whipple Ranch, Sunnyside, Nevada, beginning in the SE 1/4 NE 1/4 sec. 14, T. 7 N., R. 62 E.; ending in the SW 1/4 NW 1/4 sec. 13, T. 7 N., R. 62 E. See Kellogg (1964, Pl. 1), and Budge and Sheehan (1980, Fig. 4).

Sevy Dolostone

Distance above base of section: 1,516.0 feet.

Laketown Dolostone

Thickness: 1,006.8 feet.

Decathon Member

Thickness: 20.0 feet.

38.	Dolostone, medium brownish-gray (5 YR 5/1), weathers light gray (N 7) to very light gray (N 8), microcrystalline, thick-bedded to very thick-bedded; small fractures filled with quartz sparsely scattered throughout; forms gentle, ledgy slope, brachiopods common near base, USNM loc. 19192	20.0

Distance above base at section: 1,496.0 feet.

Jack Valley Member

Thickness: 71.2 feet.

37.	Argillaceous dolostone, dark brownish-gray (5 YR 3/1), weathers medium brownish gray (5 YR 5/1), microcrystalline to very finely crystalline, thick-bedded to very thick-bedded; abundant light-gray (N 7) to dark brownish-gray (5 YR 3/1) chert in nodules and discontinuous beds; thin bioclastic lenses and beds common in part; mottled in part, light colored mottles of finer crystalline material than dark mottles; small seams of quartz crystals sparsely scattered throughout; forms steep slope with cliffs; abundant, well-preserved brachiopods and	

	Unit Thickness (feet)
corals toward top, USNM locs. 19185, 19186, 19187, 19188, 19189, 19190, 19191	71.2

Distance above base of section: 1,424.7 feet.

Gettel Member

Thickness: 51.7 feet.

36. Argillaceous dolostone, brownish-gray (5 YR 4/1), weathers light brownish gray (5 YR 6/1), microcrystalline to very finely crystalline, thick-bedded; dark brownish gray chert common. 51.7

Distance above base of section: 1,372.9 feet.

High Lake Member

Thickness: 599.4 feet.

35. Dolostone, medium olive-gray (5 YR 5/1), weathers light olive gray (5 YR 6/1), mottled, very finely crystalline, thin-bedded to thick-bedded (1-3′), former predominates in lower 25 ft.; interbedded arenaceous-like, and nodular, chert bearing beds common toward base; argillaceous in part; darker colored toward top; forms steep, ledgy slope; sparsely scattered, poorly preserved pelmatozoan remains throughout, very poorly preserved halysitid, syringoporid, and brachiopod remains toward top, USNM locs. 19180, 19181, 19182, 19183, 19184 ..... 213.0

34. Dolostone, medium brownish-gray (5 YR 5/1), weathers light gray (N 7), very finely to finely crystalline, thin-bedded to medium-bedded (1-6″); contains chert in beds 1-6 ins. thick, interbedded with dolostone beds 6-18 ins. thick, latter thicknesses predominate toward bottom; mild reaction with dilute HCl; sand-like particles 0.25-0.5 mm in diameter sparsely scattered throughout; silicified pelmatozoan remains common, USNM locs. 19178 (T), 19179 ..... 63.2

33. Dolostone, medium light-gray (N 6), weathers light gray (N 7), finely crystalline, very thick-bedded; some small clusters of medium-crystalline dolomite; forms moderately steep, rugged slope; pelmatozoan columnals sparse to abundant, brachiopods, USNM loc. 19177 ..... 164.2

32. Dolostone, same lithology as Unit No. 30 ..... 55.5

31. Dolostone, dark brownish-gray (5 YR 3/1), weathers medium

	Unit Thickness (feet)
dark brownish gray (5 YR 4/1), mottled, finely crystalline, thick-bedded to very thick-bedded (1.5-7′); laminated; darker colored and argillaceous in lower part; some deformed broken laminae; lighter toward base; dolomitized pelmatozoan fragments common	16.5
30. Dolostone, dark brownish-gray (5 YR 3/1), weathers medium brownish gray (5 YR 5/1), very finely crystalline, thick-bedded to very thick-bedded; dolomitized pelmatozoan columnals sparsely scattered throughout	58.8
29. Dolostone, grayish-black (N 2), weathers brownish gray (5 YR 4/1), microcrystalline, thick-bedded; chert common throughout; poorly preserved brachiopods, USNM loc. 19176	3.0
28. Dolostone, dark-gray (N 3), weathers medium gray (N 5), microcrystalline, thick-bedded to very thick-bedded (2-6′); laminated; argillaceous in part; nodules of chert sparsely scattered throughout; small clusters of quartz crystals; forms ledgy outcrop along flat part of ridge crest	25.1
Distance above base of section: 773.5 feet.	
Tony Grove Lake Member	
Thickness: 264.3 feet.	
27. Argillaceous dolostone, dark-gray (N 3), weathers brownish gray (5 YR 4/1), finely crystalline, medium-bedded to thick-bedded (0.5-2′); laminated; randomly oriented thin quartz seams sparsely scattered throughout	11.7
26. Dolostone, medium brownish-gray (5 YR 5/1), weathers medium dark gray (N 4), very finely to finely crystalline, thick-bedded to very thick-bedded (2-6′); mottled and laminated in part; bioclastic beds and lenses throughout; abundant thin seams of chert; forms steep, ledgy slope; silicified brachiopods common, one gastropod, USNM locs. 19168, 19169, 19170, 19171, 19172, 19173, 19174	111.6
25. Dolostone, dark-gray (N 3), weathers medium gray (N 5), finely crystalline, very thick-bedded (4-6′); abundant, small dolomitized pelmatozoan fragments, some silicified brachiopods, and one silicified coral, USNM loc. 19167	51.8
24. Dolostone, medium dark-gray (N 4), weathers medium gray (N 5), finely crystalline, medium-bedded to thick-bedded (4″-	

	Unit Thickness (feet)
3′); thickly laminated beds interbedded with bioclastic beds and lenses; finely crystalline, laminated lithic clasts common in thin lenses of intraformational conglomerate; chert sparsely scattered toward top; poorly preserved, dolomitized brachiopods and one rugose coral, USNM locs. 19163, 19164, 19165, 19166	81.7
23. Argillaceous dolostone, dark-gray (N 3), weathers medium dark gray (N 4), microcrystalline, thick-bedded; chert common; some randomly oriented small seams of light colored quartz or dolomite	7.3

Distance above base of section: 509.2 feet.

Ely Springs Dolostone

Thickness: 509.2 feet.

Floride Member

Thickness: 105.2 feet.

22. Semicovered; light-gray dolostone float; below Unit No. 23 is a 5 in. thick zone containing abundant, medium-sized, frosted, quartz sand grains and dolomitic oolites floating in a dolomitic matrix	1.4
21. Dolostone, medium-gray (N 5), weathers light gray (N 7), very finely crystalline, medium-bedded to thick-bedded (4″-2′), the latter predominates; some surfaces stylolitic, oolites common in upper half, weathers to a meringue surface; semicovered in part	10.2
20. Dolostone, medium dark-gray (N 4) with slight brownish tint, weathers light gray (N 7), microcrystalline, thick-bedded to very thick-bedded, the former predominates toward base; weathers to a meringue surface; randomly oriented white dolomite seams sparsely scattered throughout; reacts mildly with dilute HCl; forms prominent, light-colored cliff along steep slope; poorly preserved corals, USNM loc. 19162	17.5

TRAVERSE MOVED TO SOUTH, ALONG STRIKE TO BETTER EXPOSURES.

19. Dolostone, dark brownish-gray (5 YR 3/1), weathers light brownish gray (5 YR 6/1), very finely crystalline, very thick-bedded (4-6′); small seams of white dolomite common; brachiopods and corals relatively common, USNM locs. 1960, 1961	3.0

	Unit Thickness (feet)
18. Covered; light brownish-gray dolostone float	19.7
17. Dolostone, dark brownish-gray (5 YR 3/1), weathers light brownish gray (5 YR 6/1), weakly mottled; microcrystalline, thin-bedded to thick-bedded (3-18″); weathers to a meringue surface; chert common; possible worm burrows filled with more coarsely crystalline material, sparse; forms steep, semi-covered slope	15.9
16. Dolostone, dark brownish-gray (5 YR 3/1), weathers light brownish gray (5 YR 6/1), mottled microcrystalline, thick-bedded; randomly oriented small fractures filled with calcite; weathers to a meringue surface; upper one-third covered ...	37.2
Distance above base of section: 404.0 feet.	
Barn Hills and Lost Canyon Members (undivided)	
Thickness: 367.6 feet.	
15. Covered; brownish-gray dolostone float; forms steep slope; rugose corals, USNM locs. 19158 (T), 19159 (T)	34.6
14. Dolostone, same lithology as Unit No. 8, except gray-brown chert is common throughout; beds thick-bedded to very thick-bedded (1-4′); forms moderate, semicovered slope toward top; dolomitized, poorly preserved rugose and tabulate corals common, USNM locs. 19156, 19157	105.3
13. Dolostone, same lithology as Unit No. 9; semicovered; brachiopods and corals, USNM locs. 19154, 19155	26.6
12. Dolostone, same lithology as Unit No. 10; dolomitized halysitid and rugose corals, and brachiopods, USNM locs. 19152, 19153	20.8
11. Dolostone, same lithology as Unit No. 9; semicovered	5.2
10. Dolostone, same lithology as Unit No. 8, but distinctly mottled and containing some bioclastic material	2.6
9. Dolostone, same lithology as Unit No. 8; semicovered; silicified rugose corals and brachiopods, USNM locs. 19148, 19149, 19150, 19151	37.0
8. Argillaceous dolostone, dark brownish-gray (5 YR 3/1), weathers brownish gray (5 YR 4/1), microcrystalline, thin-bedded to thick-bedded (1-3′), the latter predominates; mottled in part; thin seams of calcite (?) sparsely scattered throughout; less	

	Unit Thickness (feet)
fossiliferous toward top, some sparse bioclastic beds and lenses, USNM loc. 19147	37.7
7. Dolostone, dark brownish-gray (5 YR 3/1), weathers medium brownish gray (5 YR 5/1), microcrystalline, thick-bedded (1-3′); mottled toward top; breccia common in upper half; weathers to a meringue surface; fresh surfaces react mildly with dilute HCl	27.6
6. Dolostone, brownish-black (5 YR 2/1), weathers brownish gray (5 YR 4/1), weakly mottled, very finely crystalline, thick-bedded; randomly oriented, small fractures filled with calcite; laminated in upper half; forms moderately steep slope with small cliffs	41.4
5. Dolostone, same lithology as Unit No. 3; USNM loc. 19146 (?)	1.3
4. Covered; brownish-gray dolostone float	11.7
3. Dolostone, brownish-black (5 YR 2/1), weathers dark brownish gray (5 YR 3/1), microcrystalline, medium-bedded to thick-bedded (4″-2′); yellowish brown chert, sparse throughout; weathers in part to a meringue surface; some randomly oriented, very small fractures filled with calcite; silicified brachiopods common, USNM locs. 19143, 19144, 19145, 19146 (?)	15.6
Distance above base of section: 36.4 feet.	
Ibex Member	
Thickness: 36.4 feet.	
2. Covered; light olive-gray and brownish-gray dolostone float	22.1
1. Sandy, quartzic dolostone, medium dark-gray (N 4), weathers light olive gray (5 Y 6/1), medium crystalline, thick-bedded (1-3′); subangular to subrounded, frosted, fine to medium-sized, quartz sand grains sparsely scattered throughout; dolomitized pelmatozoan fragments at base; weathers to a meringue surface in part; forms semicovered slope	14.3
Eureka Quartzite	

SOUTHERN EGAN RANGE SECTION II

A partial section of the Laketown Dolostone was measured 2.6 miles northeast of Whipple Ranch, Sunnyside, Nevada, about one-half mile south

	Unit Thickness (feet)

of previous section; beginning in NE 1/4 SE 1/4 sec. 14, T. 7 N., R. 62 E.; ending in the NE 1/4 SE 1/4 sec. 14, T. 7 N., R. 62 E.

Sevy Dolostone

Distance above base of section: 368.5 feet.

Laketown Dolostone

Decathon Member (?)

Thickness: 56.0 feet.

7. Dolostone, medium brownish-gray (5 YR 5/1), weathers medium brownish gray (5 YR 5/1), finely to medium-crystalline, thick-bedded; forms semicovered slope 56.0

Distance above base of section: 312.5 feet.

Jack Valley Member

Thickness: 52.0 feet.

6. Dolostone, brownish-gray (5 YR 4/1), weathers light gray (N 7), very finely crystalline, thick-bedded; argillaceous in part; contains randomly oriented, small fractures filled with dolomite; well-preserved silicified corals and brachiopods common, USNM locs. 19205, 19206, 19207, 19208, 19209, 19210, 19211 47.7

5. Argillaceous dolostone, dark brownish-gray (5 YR 3/1), weathers light gray (N 7), microcrystalline, thick-bedded; small fractures common; very small chert nodules sparsely scattered throughout; weathers to a meringue surface 4.2

Distance above base of section: 260.5 feet.

High Lake (upper part) and **Gettel Members** (undifferentiated)

Thickness: 260.5 feet.

4. Dolostone, same lithology as Unit No. 2, except chert common throughout; fairly well-preserved silicified brachiopods, halysitid, favositid, and rugose corals throughout, USNM locs. 19195, 19196, 19197, 19198, 19199, 19200 (T), 19201, 19202, 19203, 19204 ..... 186.6

3. Chert bed, dark brownish-gray (5 YR 4/1), weathers brownish gray (5 YR 4/1) 0.8

	Unit Thickness (feet)
2. Dolostone, same lithology as Unit No. 1, but thick-bedded (2-3') and containing less chert; silicified brachiopods, USNM loc. 19194	41.8
1. Dolostone, medium-gray (N 5), weathers light gray (N 7), very finely crystalline, medium-bedded (4-12"); chert common in irregular nodules and discontinuous beds; some rust colored stains on weathered surfaces; silicified brachiopods, USNM loc. 19193	31.1

DELAMAR MOUNTAINS SECTION

The Section was measured about 1.9 miles northwest of abandoned portion of U.S. Highway 93 in the Delamar Mountains, Nevada, beginning and ending in the SE 1/4 of unsurveyed sec. 33, T. 10 S., R. 63 E. See Budge & Sheehan (1980, Fig. 7).

Sevy Dolostone

Distance above base of section: 1,368.0 feet.

Laketown Dolostone

Thickness: 827.9 feet.

Decathon Member

Thickness: 71.4 feet.

28. Dolostone, light olive-gray (5 Y 6/1), weathers light gray (N 7), very finely crystalline, thick-bedded; some small fractures filled with calcite	71.4

Distance above base of section: 1,296.6 feet.

Portage Canyon Member

Thickness: 89.6 feet.

27. Dolostone, dark-gray (N 3), weathers medium gray (N 5) to medium dark gray (N 4), microcrystalline, thick-bedded; dark gray (N 3) chert abundant, in large nodules and discontinuous beds 1-6 ins. thick, the former thickness predominates; sparsely scattered fairly well-preserved halysitid and favositid corals, USNM locs. 19520, 19521 (T)	35.7

	Unit Thickness (feet)
26. Dolostone, tongue of High Lake Member, light olive-gray (5 Y 6/1), weathers light olive gray (5 Y 6/1), finely crystalline, thick-bedded to very thick-bedded (2-4′); weathers in part to a meringue surface; forms moderately steep, semi-covered slope	34.6
25. Dolostone, medium dark-gray (N 4), weathers medium gray (N 5), microcrystalline, thick-bedded to very thick-bedded (2-4′); small vugs common throughout; weathers to a meringue surface; randomly oriented, thin seams of dolomite; forms moderately steep, ledgy slope	19.2

Distance above base of section: 1,207.0 feet.

High Lake Member

Thickness: 299.6 feet.

24. Dolostone, medium light-gray (N 6), weathers light gray (N 7), very finely crystalline, very thick-bedded, randomly oriented, small fractures filled with calcite; weathers to a meringue surface; forms ledgy slope near small ravine	35.4
23. Dolostone, medium-gray (N 5), weathers light olive gray (5 Y 6/1), finely to very finely crystalline, thick-bedded to very thick-bedded (2-4′), small clusters of larger dolomite crystals sparsely scattered throughout; weathers to a meringue surface	42.6
22. Dolostone, light yellowish-gray (5 Y 7/2), weathers light yellowish gray (5 Y 7/2), finely to medium-crystalline, the former predominates, very thick-bedded; forms ledgy slope, dasyclad algae common, USNM loc. 19519	36.4
21. Dolostone, light-gray (N 7), weathers light gray (N 7), finely crystalline, very thick-bedded, porus texture; weathers to a meringue surface; vugs 1-3 mm in diameter common, large-sized tabular vugs rare; chert common in some parts; forms ledgy slope; poorly preserved, coarsely silicified pelmatozoan, dasyclad algae, brachiopod, and tabulate coral remains common throughout, USNM locs. 19515, 19516, 19517, 19522, 19523	185.1

Distance above base of section: 907.3 feet.

Tony Grove Lake Member

Thickness: 367.3 feet.

	Unit Thickness (feet)
20. Dolostone, medium dark-gray (N 4), weathers medium dark gray (N 4), mottled, very finely to finely crystalline, thick-bedded	5.4
19. Dolostone, dark-gray (N 3), weathers medium gray (N 5), very finely crystalline, thick-bedded (2′); randomly oriented, thin seams of dolomite or quartz; sparsely scattered, poorly preserved favositid and halysitid corals, USNM loc. 19514 (T)	43.2
18. Dolostone, dark-gray (N 3), weathers dark gray (N 3) to medium dark gray (N 4), finely crystalline, thick-bedded (2′); chert common; silicified brachiopod coquinas alternate with bioclastic beds and lenses composed of dolomitic brachiopods and sparse, indeterminant rugose corals, USNM loc. 19513	18.2
17. Dolostone, medium dark-gray (N 4), weathers medium dark gray (N 4), microcrystalline, thick-bedded; very finely laminated, alternating thick light and thin dark colored laminae; semi-covered in upper half; algal stromatolites common, some individual heads up to 2 ft. in diameter, USNM locs. 19518 (T), 19524	90.7
16. Dolostone, medium light-gray (N 6), weathers medium light gray (N 6) to medium gray (N 5), very finely to finely crystalline, thick-bedded; mottled in part	17.9
15. Dolostone, medium-gray (N 5), weathers medium light gray (N 6) with slight olive tint, very finely to finely crystalline, patchy distribution, thick-bedded to very thick-bedded (2-4′); laminated in part; banded near top by alterating light beds 1 cm thick and dark beds 5 cm thick	28.1
14. Dolostone, medium dark-gray (N 4) to dark-gray (N 3), weathers medium dark gray (N 4), microcrystalline, thick-bedded to very thick-bedded (2-5′); chert abundant; some rust colored stains on weathered surfaces; randomly oriented, small seams of calcite or dolomite; brachiopods common, some gastropods, USNM locs. 19510, 19511, 19512	60.0

TRAVERSE MOVED TO SOUTH ABOUT 200 YARDS NEAR SMALL WOODEN STAKE NUMBERED 309.

13. Dolostone, medium dark-gray (N 4), weathers medium gray (N 5), microcrystalline to very finely crystalline, bedding indistinct; mottled in part; chert common toward top; weathers to a meringue surface; randomly oriented, small fractures	

	Unit Thickness (feet)
throughout; halysitid corals and brachiopods common, USNM loc. 19509	35.0
12. Dolostone, medium dark-gray (N 4), weathers medium olive gray (5 Y 5/1), finely crystalline, thick-bedded; laminated intervals; bioclastic material composed of brachiopods, stromatoporid or algal stromatolite-like structures, and pelmatozoan columnals or dasycladaceous algae; small, rust colored stained fractures; weathers to a meringue surface; USNM locs. 19505, 19506, 19507, 19508	68.4

Distance above base of section: 540.0 feet.

Ely Springs Dolostone

Thickness: 540.0 feet.

Floride Member

Thickness 139.3 feet.

11. Dolostone, medium dark-gray (N 4), weathers light olive gray (5 Y 6/1) to light gray (N 7), microcrystalline to very finely crystalline, the former predominates toward base, thin-bedded to thick-bedded (2-18″); mottled toward top; finely laminated throughout, less distinct toward top; some rust colored stains on small fractures; randomly oriented, thin seams of dolomite crystals common; reacts very mildly with dilute HCl; USNM loc. 19504	37.5
10. Dolostone, medium dark-gray (N 4), weathers medium gray (N 5), microcrystalline, very thick-bedded; weathers to a meringue surface; scattered, randomly oriented thin seams filled with authigenic quartz and dolomite crystals; forms moderately steep, rugged, ledgy, and cliffy slope	32.4
9. Dolostone, medium-gray (N 5), weathers light olive gray (5 Y 6/1), microcrystalline, thick-bedded; finely laminated; rust colored stains on small fractures, USNM loc. 19503	6.6
8. Dolostone, medium dark-gray (N 4), microcrystalline to very finely crystalline, the former predominates, thick-bedded to very thick-bedded (1-4′); rust colored stains on some small fractures; weathers to a meringue surface; forms ravine, and semi-covered slope with scattered ledgy outcrops; near base are worm-like burrows 1-3 mm in diameter and several centi-	

	Unit Thickness (feet)
meters long on weathered surfaces, filled with dark dolostone, USNM locs. 19501, 19502	62.7

Distance above base of section: 400.7 feet.

Lost Canyon Member

Thickness: 111.4 feet.

7. Dolostone, medium dark-gray (N 4), weathers medium gray (N 5), mottled, very finely crystalline, thick-bedded (1-3′); weathers to a meringue surface; randomly oriented, thin stringers of dolomite; weathered surfaces react mildly with dilute HCl; forms moderate, ledgy slope 83.9

6. Dolostone, medium-gray (N 5), weathers medium brownish-gray (5 YR 5/1), microcrystalline, thick-bedded (1-3′); irregular shaped nodules of well-weathered chert common; medium-sized, frosted, quartz sand grains found between some rugose coral septa; fairly well-preserved rugose corals, USNM locs. 19495, 19496, 19497, 19498, 19499, 19500 ..... 27.5

Distance above base of section: 289.2 feet.

Barn Hills Member

Thickness: 265.5 feet.

5. Dolostone, dark-gray (N 3), weathers dark gray (N 3), very finely crystalline, thick-bedded (1-3′); mottled in part; medium light gray (N 6) to medium gray (N 5); lower half appears to contain rare, thin seams of very fine-sized, frosted, quartz sand grains; weathers to a meringue surface; in middle part fault cuts unit, displacement about 4.5 ft., dolostone breccia, medium-dark-gray (N 4), weathers medium-gray (N 5), microcrystalline to very finely crystalline; sparsely scattered, small nodules of dolomite throughout; USNM locs. 19493, 19494 ..... 71.0

4. Dolostone, same lithology as Unit No. 2 ..... 56.9

3. Dolostone, medium dark-gray (N 4), weathers medium dark gray (N 4), very finely crystalline, medium-bedded to thick-bedded; small chert nodules common throughout; weathers

	Unit Thickness (feet)
to a meringue surface; weathered surfaces react mildly with dilute HCl; very poorly preserved pelmatozoan columnals sparsely scattered throughout	30.6
2. Dolostone, same lithology as Unit No. 1, but no quartz sand grains; forms ledgy slope; very poorly preserved, silicified brachiopods and rugose corals common, USNM locs. 19489, 19489 (T), 19490, 19491, 19492	106.9

Distance above base of section: 23.6 feet.

Ibex Member

Thickness: 23.6 feet.

1. Dolostone, dark brownish-gray (5 YR 3/1), weathers medium gray (N 5), very finely crystalline, medium-bedded to thick-bedded (0.5-2'); small, irregular nodules of chert sparsely scattered throughout; weathers to a meringue surface; well-rounded, frosted, medium-sized, quartz sand grains floating in dolostone matrix, abundant in part; forms moderate, mostly covered slope; bioclastic beds and lenses common, contain poorly preserved dolomitized and silicified pelmatozoan columnals and brachiopods	23.6

Eureka Quartzite

CHERRY CREEK RANGE SECTION

The Section was measured about 12.5 miles southwest of Cherry Creek, Nevada, on the north side of the canyon; beginning in the SW 1/4 SE 1/4 of unsurveyed sec. 24, T. 22 N., R. 61 E. (see Fritz, 1968).

Sevy Dolostone

Distance above base of section: 1,842.3 feet.

Laketown Dolostone

Thickness: 1,151.8 feet.

Decathon Member

Thickness: 57.7 feet.

54. Dolostone, medium olive-gray (5 Y 5/1), weathers light olive

	Unit Thickness (feet)
gray (5 Y 6/1), medium-crystalline, thick-bedded (1-2′); upper 33.2′ covered, USNM loc. 19244	57.7

Distance above base of section: 1,784.6 feet.

Portage Canyon and **Jack Valley Members** (undivided)

Thickness: 220.2 feet.

53. Dolostone, medium dark-gray (N 4) with slight brownish tint to light-gray (N 7) with slight brownish tint, the former predominates, weathers light olive gray (5 Y 6/1), finely to medium crystalline, thick-bedded (1-2′)	61.7
52. Dolostone, dark-gray (N 3), weathers medium brownish gray (5 YR 5/1), weakly mottled, very finely crystalline, thick-bedded; vugs 5 mm in diameter sparsely scattered throughout; thin seams of chert and dolomite common	26.2
51. Dolostone, medium dark-gray (N 4) with slight brownish tint, weathers light brownish gray (5 YR 6/1), microcrystalline, thick-bedded (1-2′); small nodules of light-gray (N 7) chert very sparsely scattered throughout in lower half; forms gentle, semicovered, ledgy slope near small canyon bottom normal to main canyon; abundant, fairly well-preserved corals and brachiopods, USNM locs. 19275 (T), 19276 (T)	132.2

Distance above base of section: 1,564.4 feet.

High Lake Member

Thickness: 476.8 feet.

50. Dolostone, medium brownish-gray (5 YR 5/1), weathers medium dark gray (N 4), medium-crystalline, thick-bedded to very thick-bedded (2-6′); light gray (N 7) to very light gray (N 8) chert in lower one-fourth in beds 0.5-6″ thick, interbedded with dolostone beds 2-4 ft. thick; weathered surfaces react mildly with dilute HCl; forms semicovered slope	133.9
49. Dolostone, dark brownish-gray (5 YR 4/1), very finely crystalline, thick-bedded (1-3′); some patches of finely crystalline dolomite; forms part of small canyon normal to main canyon; nodular and bedded, light-gray (N 7) chert common in thin seams and beds up to 4 in. thick; randomly oriented seams of dolomite crystals common; USNM locs. 19273, 19274	38.8
48. Dolostone, medium-gray (N 5), weathers light olive gray (5 Y	

	Unit Thickness (feet)
6/1), finely crystalline, thick-bedded; sparsely scattered small patches of coarsely crystalline dolomite; forms semicovered, ledgy slope	76.8
47. Dolostone, light olive-gray (5 Y 6/1) to light-gray (N 7), weathers light gray (N 7), very finely to finely crystalline; weathered surfaces react mildly with dilute HCl; forms semicovered slope	32.3
46. Dolostone, light olive-gray (5 Y 6/1) to light-gray (N 7), weathers medium brownish gray (5 YR 5/1), medium-crystalline, thick-bedded; reacts mildly with dilute HCl; forms semicovered, ledgy slope	24.4
45. Dolostone, medium light-gray (N 6), weathers light gray (N 7), very finely to medium-crystalline, the former predominates, very thick-bedded (1-8′); dark-gray (N 3) to medium-gray (N 5) chert in nodules, seams, and thin beds (2 cm) common in lower two-thirds; solution pitting on weathered surfaces common; semicovered in upper part; reacts mildly with dilute HCl; sparsely scattered, poorly preserved rugose and tabulate corals, and brachiopods in cherty zones, USNM loc. 19272	55.5
44. Dolostone, medium light-gray (N 6) to light-gray (N 7), weathers light olive gray (5 Y 6/1) to light gray (N 7), finely to medium-crystalline, thick-bedded; some moderate-sized calcareous nodules 1-1.5 cm in diameter; forms semicovered, ledgy slope; sparse, poorly preserved favositids in lower one-third, USNM loc. 19271 (T)	41.4
43. Dolostone, medium-gray (N 5), weathers light gray (N 7), microcrystalline to very finely crystalline, the former predominates; fracture cleavage; some small fractures filled with crystals of calcite; possible fault indicated by steeper dip of bedding; weathered surfaces react mildly with dilute HCl; sparse, very poorly preserved favositid corals	5.8
42. Dolostone, light-gray (N 7), weathers light olive gray (5 Y 6/1), finely to medium-crystalline, the former predominates, thick-bedded to very thick-bedded (2-4′); some rust colored stains; sparsely scattered vugs up to 1.5 mm in diameter, some with crystals of calcite; solution pitting common on weathered surfaces; sparse clusters of authigenic, euhedral crystals of quartz up to 5 mm in diameter; weathered surfaces react slightly with dilute HCl; forms semicovered, ledgy slope; USNM loc. 19270	67.6

	Unit Thickness (feet)
Distance above base of section: 1,087.5 feet.	
Tony Grove Lake Member	
Thickness: 396.9 feet.	
41. Dolostone, dark-gray (N 3), weathers medium dark gray (N 4), finely crystalline, thick-bedded; laminated in part; small, rust colored patches, sparse; USNM loc. 19269	12.0
40. Dolostone, dark brownish-gray (5 YR 3/1), weathers dark gray (N 3) to brownish black (5 YR 2/1), medium- to very finely crystalline, thick-bedded to very thick-bedded (4′), the latter predominates in upper half; laminated in part; mottled in part; randomly oriented, thin seams of light colored material; very poorly preserved brachiopods abundant, USNM locs. 19267, 19268 (T)	61.4
39. Dolostone, light brownish-gray (5 YR 6/1) to dark-gray (N 3), weathers light gray (N 7) to medium dark gray (N 4), microcrystalline, medium-bedded; fine laminations, less distinct toward top; semicovered toward top; truncated algal stromatolite domes common on weathered surfaces, USNM loc. 19266	61.0
38. Dolostone, dark-gray (N 3), weathers medium dark gray (N 4) to light gray (N 7), the former predominates, finely crystalline, thick-bedded; coarsely laminated, thin seams up to 1 mm thick consisting of quartz crystals sparsely scattered throughout .	12.0
37. Dolostone, medium brownish-gray (5 YR 5/1), weathers brownish gray (5 YR 6/1) to light gray (N 7), microcrystalline, medium-bedded to thick-bedded (0.5-2′); laminated, laminae commonly 0.5-4 mm thick, some deformed; conchoidal fracture; weathers to a meringue surface	7.2
36. Dolostone, dark-gray (N 3) with slight brownish tint, weathers medium gray (N 4) with slight brownish tint, finely to medium-crystalline, thick-bedded to very thick-bedded (2-4′); solution pitted surfaces common; vugs 1.5-5 mm in diameter sparsely scattered throughout, some vugs filled with crystals of quartz or dolomite; brachiopod molds and casts common, many filled with crystals of calcite, USNM loc. 19265	7.8
35. Dolostone, dark brownish-gray (5 YR 3/1), weathers medium dark gray (N 4) to medium gray (N 5), finely crystalline, thick-bedded (2′); indistinctly laminated; weathered surfaces react mildly with dilute HCl	20.1

	Unit Thickness (feet)
34. Dolostone, dark-gray (N 3) to light gray (N 7), weathers medium dark gray (N 4) to light gray (N 7), medium-crystalline, medium-bedded to very thick-bedded (0.5-4′), the latter predominates toward top; laminated distinctly in lower half, some laminae deformed; lighter colored laminae more finely crystalline than darker ones	40.6
33. Dolostone, dark brownish-gray (5 YR 3/1), weathers dark brownish gray (5 YR 3/1), very finely crystalline, thick-bedded; small solution pits common; small fractures, some filled with calcite; weathered surfaces react mildly with dilute HCl	20.2
32. Dolostone, dark brownish-gray (5 YR 3/1), weathers brownish gray (5 YR 4/1), very finely crystalline, thick-bedded to very thick-bedded (2-6′); thin seams of calcite and dolomite; small nodules of calcite and dolomite up to 2.5 cm in diameter; small fractures filled with calcite common; vugs up to 2.5 cm in diameter filled with crystals of quartz and dolomite sparsely scattered throughout; reacts very mildly with dulute HCl; forms semicovered, small ravine along slope of canyon; well-preserved silicified brachiopods, USNM loc. 19264	68.0
31. Dolostone, medium dark-gray (N 4) with slight brownish tint, weathers medium brownish gray (5 YR 5/1), finely crystalline, very thick-bedded; laminated, fewer laminae than in Unit No. 30; bioclastic lenses common; weathered surfaces react mildly with dilute HCl	25.9
30. Dolostone, brownish-gray (5 YR 4/1), weathers light brownish gray (5 YR 6/1) to brownish gray (5 YR 4/1), finely to medium-crystalline, the former predominates, medium-bedded to thick-bedded (1-2′), the former predominates in middle; distinctly laminated (0.5-1 mm) and banded (1-1.5 cm), lenticular; bioclastic lenses and beds common; thin, argillaceous seams sparsely scattered throughout; forms moderate, talus-covered, ledgy slope in lower half; some weathered surfaces react mildly with dilute HCl; poorly preserved rugose corals and brachiopods, USNM locs. 19261, 19262, 19263 (T)	60.4
Distance above base of section: 690.5 feet.	

Ely Springs Dolostone

Thickness: 690.5 feet.

	Unit Thickness (feet)
Floride Member	
Thickness: 195.3 feet.	
29. Dolostone, medium dark-gray (N 4), weathers medium light gray (N 6), microcrystalline, medium-bedded to thick-bedded (8-18″); oolites floating in dolostone matrix common in upper half	2.5
28. Covered; medium-gray dolostone float	20.7
27. Dolostone, dark-gray (N 3), weathers brownish gray (5 YR 4/1) to medium gray (N 5), very finely crystalline, thick-bedded to very thick-bedded (2-6′); randomly oriented, small fractures filled with crystals of calcite; silicified corals and brachiopods sparsely scattered throughout, USNM locs. 19258, 19259, 19260	72.7
26. Covered; medium-gray dolostone float	94.0
25. Dolostone, medium dark-gray (N 4) with slight brownish tint, weathers medium gray (N 5) with slight brownish tint, very finely to finely crystalline, the latter predominates; indistinctly medium-bedded (4″-1′); dolomite crystals in small nodules up to 3 mm in diameter; irregular nodules of chert-like material up to 4 mm in diameter common; silicified brachiopods, USNM locs. 19256, 19257	5.2
Distance above base of section: 495.2 feet.	
Lost Canyon Member(?)	
Thickness: 196.8 feet.	
24. Dolostone, dark brownish-gray (5 YR 3/1) to dark-gray (N 3), weathers dark brownish gray (5 YR 3/1), very finely to finely crystalline, very thick-bedded (3-6′); weakly laminated in part; weathers to a meringue surface; small vugs 1-2 mm in diameter, some filled with crystals of dolomite, sparsely scattered throughout; small solution pits abundant throughout; semi-covered in upper half, forms ledgy slope with scattered outcrops; bioclastic lenses and beds common; dolomitized halysitid, favositid, and auloporid (?) corals; brachiopods, pelmatozoan fragments, and cephalopod, USNM locs. 19254, 19255	115.0
23. Dolostone, brownish-gray (5 YR 4/1), weathers medium light gray (N 6), microcrystalline, thick-bedded (2′); distinctly lam-	

	Unit Thickness (feet)
inated, laminae of light and dark material, light laminae 0.5-4 mm thick, dark laminae 1 mm thick, conchoidal fracture; semicovered in upper half	23.4
22. Dolostone, dark brownish-gray (5 YR 3/1), weathers light gray (N 7), microcrystalline, thin-bedded to medium-bedded (2-6″); laminated; conchoidal fracture; randomly oriented, small fractures filled with calcite	7.3
21. Dolostone, medium dark-gray (N 4), weathers light brownish gray (5 YR 6/1) to medium light gray (N 7), microcrystalline, thin-bedded to medium-bedded (2″-1′); weathers to a meringue surface	8.4
20. Dolostone, dark-gray (N 3), weathers brownish gray (5 YR 4/1), very finely crystalline, medium-bedded to thick-bedded (0.5-2′); contact with Unit No. 19 sharp; poorly preserved, silicified and dolomitized brachiopods and corals in bioclastic lenses common in upper half, USNM loc. 19253	14.9
19. Argillaceous dolostone, dark brownish-gray (5 YR 3/1), weathers light brownish gray (5 YR 6/1) to medium dark gray (N 4), microcrystalline, thin-bedded to medium-bedded (2″-1′); distinctly laminated in lower half; dark, more argillaceous, laminae weather in relief; less argillaceous toward top; forms moderate, semicovered slope	27.6
Distance above base of section: 298.4 feet.	
Barn Hills Member(?)	
Thickness: 273.6 feet.	
18. Dolostone, medium-gray (N 5), weathers medium gray (N 5), microcrystalline, thick-bedded to very thick-bedded (2-4′); weathers to a meringue surface	8.8
17. Dolostone, dark-gray (N 3), weathers brownish gray (5 YR 4/1), very finely crystalline, medium-bedded (1′); mottled by round and flattened blebs; small nodules of calcite; randomly oriented, very thin seams of dolomite common, may represent very poorly preserved fossils	10.6
16. Dolostone, medium dark-gray (N 4), weathers medium gray (N 5) to light brownish gray (5 YR 6/1), microcrystalline to very finely crystalline, thick-bedded to very thick-bedded (2-5′); small nodules and discontinuous seams of quartz crystals	

	Unit Thickness (feet)
sparsely scattered throughout; forms moderate slope with small cliffs; dolomitized corals, USNM locs. 19251, 19252 ..	38.3
15. Dolostone, dark brownish-gray (5 YR 3/1), weathers brownish gray (5 YR 4/1), microcrystalline, medium-bedded (4″-1′) ...	6.9
14. Dolostone, medium dark-gray (N 4), weathers light brownish gray (5 YR 6/1), very finely crystalline, medium-bedded (4″-1′); semicovered slope; USNM loc. 19250 (T)	12.3
13. Dolostone, brownish-black (5 YR 2/1), weathers brownish gray (5 YR 4/1), very finely crystalline, medium-bedded (4″-1′) in lower half to thick-bedded (2′) in upper half; laminated and weakly mottled throughout; some lighter colored interbeds toward top; dark chert in thin beds and nodules common in upper half; slope semicovered in upper half; corals, brachiopods, and gastropods rare in cherty zones, USNM loc. 19249	39.4
12. Dolostone, brownish-gray (5 YR 4/1), weathers medium light gray (N 6), microcrystalline, medium-bedded	2.1
11. Dolostone, dark brownish-gray (5 YR 3/1), weathers medium brownish gray (5 YR 5/1), microcrystalline, medium-bedded to thick-bedded (0.5-1.5′); sparsely scattered nodules of brownish-gray chert; numerous randomly oriented, small fractures filled with calcite; fracture cleavage common	36.1
10. Covered; medium brownish-gray dolostone float	9.4
9. Dolostone, brownish-black (5 YR 2/1), weathers medium gray (N 5), very finely crystalline, thick-bedded; large nodules of chert sparsely scattered throughout; weathers to a saccharoidal texture; forms moderate, ledgy slope	7.5
8. Dolostone, dark brownish-gray (5 YR 3/1), weathers dark gray (N 3) with slight brownish tint, finely to very finely crystalline, very thick-bedded (3-5′); some small rust colored nodules up to 3 mm in diameter; randomly oriented, small fractures filled with calcite common	7.0
7. Dolostone, medium dark-gray (N 4), weathers medium brownish gray (5 YR 5/1), very finely crystalline, medium-bedded (3-5′), the latter predominates in upper part; laminated in part; vugs 0.5 cm in diameter sparsely scattered in upper half, some filled with crystals of calcite; forms semicovered, ledgy slope; dolomitized rugose corals, brachiopods, and gastropods, USNM loc. 19248	50.0

	Unit Thickness (feet)
6. Dolostone, brownish-black (5 YR 2/1), weathers brownish gray (5 YR 4/1) to dark brownish gray (5 YR 3/1), very finely crystalline, thick-bedded (1.5-3'); bioclastic lenses and beds contain pelmatozoan, rugose and halysitid coral remains common; near some fossils small to large, sparsely scattered, black, mottled chert nodules; forms gentle, semicovered, ledgy slope; poorly preserved silicified rugose corals, USNM loc. 19247 .	31.5
5. Dolostone, same lithology as Unit No. 3	1.1
4. Dolostone, same lithology as Unit No. 2	10.5
3. Dolostone, medium dark-gray (N 4), weathers medium brownish gray (5 YR 5/1), very finely crystalline, medium-bedded to thick-bedded; small nodules of calcite common; bioclastic beds and lenses containing brachiopods, etc., surrounded by calcareous matrix common	1.5

Distance above base of section: 24.7 feet.

Ibex Member

Thickness: 24.7 feet.

2. Argillaceous and sandy, quartzic dolostone, brownish-black (5 YR 2/1), weathers dark brownish gray (5 YR 3/1), very finely crystalline, medium-bedded to thick-bedded; randomly oriented, small fractures filled with calcite common; rounded, frosted, fine-sized quartz sand grains sparsely scattered throughout; forms semicovered slope	4.8
1. Argillaceous and sandy quartzic dolostone, brownish-black (5 YR 2/1), weathers brownish gray (5 YR 4/1), microcrystalline to very finely crystalline, medium-bedded to thick-bedded (0.5-2'); black to grayish-black chert in irregular nodules common; fine to medium-sized, frosted, rounded quartz sand grains common; forms semicovered, ledgy slope; abundant, silicified, well-preserved brachiopods, USNM locs. 19245, 19246	19.8

Eureka Quartzite

PANCAKE RANGE SECTION

The Section was measured about 8.5 miles northeast of Black Rock Summit, Nevada, beginning and ending in the NE 1/4 of unsurveyed sec. 25, T. 9 N., R. 54 E. See Budge and Sheehan (1980, Fig. 5).

Laketown Dolostone	Unit Thickness (feet)
Decathon Member (part)	
30. Dolostone, light brownish-gray (5 YR 6/1), weathers yellowish gray (5 Y 8/1), very finely crystalline, thick-bedded; reacts mildly with dilute HCl; porous texture; forms moderate, ledgy slope. Thickness not measured, but probably several hundred feet.	
Distance above base of section: 1,414.9 feet.	
Portage Canyon Member	
Thickness: 149.9 feet.	
29. Dolostone, dark brownish-gray (5 YR 3/1), weathers medium brownish gray (5 YR 5/1), very finely crystalline, thick-bedded (1-3′); irregular, discontinuous, thin seams of brownish-gray (5 YR 4/1) chert throughout; forms moderate, ledgy, and cliffy slope; well-preserved tabulate and rugose corals common throughout, some dasyclad algae or pelmatozoan columnals throughout; USNM locs. 19487, 19488	36.3
28. Dolostone — probably tongue of High Lake Member, same lithology as Unit No. 26	53.7
27. Dolostone, medium dark-gray (N 4), weathers medium light gray (N 6) with slight olive tint, very finely crystalline, thick-bedded; dense texture	2.7
26. Dolostone, probable tongue of High Lake Member, light olive-gray (5 Y 6/1), weathers light gray (N 7), very finely crystalline, thick-bedded (1-3′); dense texture	28.5
25. Dolostone, brownish-black (5 YR 2/1), weathers brownish gray (5 YR 4/1), microcrystalline to very finely crystalline, medium-bedded to thick-bedded (3′), the latter predominates; irregular nodules of dark-gray (N 3) chert sparsely scattered throughout; dense texture; outlines of small pellets on weathered surfaces; weathers to a meringue surface; yellow lichens throughout; chert sparsely scattered throughout; forms moderately steep, ledgy slope; fairly well-preserved tabulate and rugose corals, USNM locs. 19214, 19485, 19486	28.5
Distance above base of section: 1,264.9 feet.	

TRAVERSE MOVED TO NORTH ACROSS GULLY TO WEST FACING SLOPE.

High Lake Member	Unit Thickness (feet)
Thickness: 610.5 feet.	
24. Dolostone, light olive-gray (5 Y 6/1), weathers light gray (N 7), microcrystalline to finely crystalline, thick-bedded (2′); randomly oriented, small fractures react with dilute HCl; fault of small displacement may cut unit; forms gentle, semicovered, down-dip slope along ridge near bottom of gully	113.0
23. Dolostone, medium olive-gray (5 Y 5/1), weathers light brownish gray (5 YR 6/1), very finely crystalline, thin-bedded to very thick-bedded (1″-4′), the latter predominates; finely laminated in part, some deformed laminae; randomly oriented, small fractures filled with crystals of calcite throughout; orange, yellow, and green lichens common throughout; brownish-gray (5 YR 4/1) chert, weathering dark brownish-gray (5 YR 5/1) to brownish-black (5 YR 2/1), common in upper two-thirds; forms moderate, ledgy slope	62.7
22. Dolostone, light brownish-gray (5 YR 6/1), weathers medium light gray (N 6), medium-crystalline, thick-bedded; porous texture; small chert nodules sparsely scattered in upper half; reacts mildly with dilute HCl	81.6
21. Dolostone, same lithology as Unit No. 19	12.6
20. Dolostone, probable tongue of Portage Canyon Member, brownish gray (5 YR 4/1), weathers brownish gray (5 YR 4/1), finely crystalline, very thick-bedded (5′); small clusters of light colored dolomite crystals sparsely scattered throughout; fairly well-preserved halysitid and favositid corals, USNM loc. 19484	5.0
19. Dolostone, light olive-gray (5 Y 6/1), weathers light gray (N 7) with slight olive tint, finely to medium-crystalline, very thick-bedded; porous texture; small vugs 1-3 mm in diameter common throughout; weathers to a meringue surface; reacts mildly with dilute HCl; forms moderate, ledgy slope along ridge; a large mound of breccia occurs about 155 ft. above the base of the Member; composed of olive-gray (5 Y 4/1) chert and lithic quartzite fragments in light olive-gray (5 Y 6/1) chert matrix; fragments 1-30 mm in diameter and very angular; mound represents erosional remnant, unrelated to the Laketown Dolostone, resting on surface	308.8
18. Dolostone, light olive-gray (5 Y 6/1), weathers light brownish gray (5 YR 6/1), finely to medium-crystalline, thick-bedded	

	Unit Thickness (feet)
to very thick-bedded (2-6′); laminated in part; porous texture; weathers to a meringue surface in part; reacts mildly with dilute HCl; interbedded with beds like those of Unit No. 17 near base, but with deformed laminations; forms moderate, ledgy slope	26.6

Distance above base of section: 654.4 feet.

Tony Grove Lake Member

Thickness: 207.2 feet.

17. Dolostone, dark-gray (N 3), weathers brownish gray (5 YR 4/1), very finely crystalline, very thick-bedded; laminated in part, intraformational conglomerate common throughout, lithic fragments several millimeters in diameter surrounded by light gray (N 7) matrix; USNM loc. 19213 ..... 62.9

16. Dolostone, medium olive-gray (5 YR 5/1), weathers olive gray (5 Y 4/1), finely crystalline, medium-bedded to very thick-bedded (4″-1′), the latter predominates; argillaceous; some darker colored interbeds; laminated, some deformed laminae; porous texture; reacts mildly with dilute HCl 10.8

15. Dolostone, brownish-gray (5 YR 4/1), weathers brownish gray (5 YR 4/1), very finely crystalline, thick-bedded to very thick-bedded; small sparsely scattered clusters of dolomite that are more coarsely crystalline than matrix; porous texture; chert nodules sparsely scattered in upper half; brachiopods, USNM loc. 19483 ..... 11.1

14. Dolostone, brownish-gray (5 YR 4/1), weathers brownish gray (5 YR 4/1), finely crystalline, thick-bedded to very thick-bedded (2-6′); thickly laminated intervals interbedded with bioclastic beds and lenses; bioclastic material composed of abundant, poorly preserved brachiopods; forms steep slope with massive cliffs 122.3

Distance above base of section: 447.2 feet.

Ely Springs Dolostone

Thickness: 447.2 feet.

Floride Member

Thickness: 114.2 feet.

13. Dolostone, olive-gray (5 Y 4/1), weathers light olive gray (5 Y

		Unit Thickness (feet)
	6/1), microcrystalline, medium-bedded to thick-bedded; argillaceous; well-preserved coral and brachiopods common throughout, USNM locs. 19212, 19475, 19476, 19478, 19479, 19480, 19481, 19482	51.2
12.	Covered; dark-gray dolostone float	21.9
11.	Dolostone, dark-gray (N 3), weathers dark brownish gray (5 YR 3/1), mottled, microcrystalline to finely crystalline, the former predominates, medium-bedded; medium dark gray (N 4) chert in small nodules throughout; burrowed in part forms dark colored massive, cliff-like bed along mountain front; USNM loc. 19477 (T)	15.5
10.	Dolostone breccia, dark-gray (N 3) to medium dark-gray (N 4), weathers light olive gray (5 YR 6/1) to brownish gray (5 YR 4/1), very finely crystalline; medium-bedded to thick-bedded; argillaceous; randomly oriented small fractures, filled with crystals of calcite, common throughout; horizontal and vertical burrows filled with brownish-gray weathering dolostone at top	0.8
9.	Dolostone, brownish-gray (5 YR 4/1), weathers light olive gray (5 YR 6/1), microcrystalline, medium-bedded to thick-bedded (0.5-3′); argillaceous; irregular, small nodules of brownish-gray (5 YR 4/1) chert throughout, USNM loc. 19474	24.6
	Distance above base of section: 353.0 feet.	
Barn Hills and **Lost Canyon Member** (undivided)		
	Thickness: 333.0 feet.	
8.	Covered; brownish-gray dolostone float	27.8
7.	Dolostone, dark brownish-gray (5 YR 3/1), weathers brownish gray (5 YR 4/1), microcrystalline to finely crystalline, very thick-bedded (4′); thick beds of intraformational conglomerate common in lower part, lithic fragments consist of argillaceous microcrystalline light olive gray (5 YR 6/1) dolostone; reacts slightly with dilute HCl; fractured throughout; some large chert fragments 4-6 ins. in diameter at top; oncolites 2-15 mm in diameter common to abundant in upper half; possible north-south fault indicated by reoccurrence of intraformational conglomerate and oncolites 62 ft. higher in section (not subtracted from unit thickness); USNM loc. 19473	91.6

	Unit Thickness (feet)
6. Dolostone, dark-gray (N 3), weathers brownish gray (5 YR 4/1), microcrystalline, thick-bedded (2-3′); thin seams of dolomite crystals sparsely scattered throughout; bioclastic lenses and beds composed of pelmatozoan columnals, brachiopods, and corals common throughout; USNM Locs. 19470 (T), 19471, 19472	60.0
5. Dolostone, dark-gray (N 3), weathers brownish gray (5 YR 4/1), weakly mottled, microcrystalline, thick-bedded (1-3′); randomly oriented, thin seams of quartz or dolomite common throughout	22.0
4. Dolostone, brownish-black (5 YR 2/1), weathers dark brownish gray (5 YR 3/1), microcrystalline to very finely crystalline, thick-bedded (1-2′); randomly oriented, thin seams of dolomite throughout; forms steep, semicovered, ledgy slope; poorly preserved brachiopod and pelmatozoan columnals, USNM loc. 19469	75.3
3. Dolostone, brownish-black (5 YR 2/1), weathers brownish gray (5 YR 4/1), microcrystalline, thick-bedded (1-3′); forms steep, semicovered, ledgy slope	25.2
2. Dolostone, brownish-gray (5 YR 4/1), weathers medium dark gray (N 4), finely crystalline, thick-bedded to very thick-bedded (1-4′); randomly oriented, thin seams of dolomite throughout; small clusters of medium-crystalline dolomite sparsely scattered throughout; reacts mildly with dilute HCl	15.8
1. Dolostone, light brownish-gray (5 YR 6/1), weathers light brownish gray (5 YR 6/1), finely crystalline, thick-bedded to very thick-bedded (1-4′); porous texture; reacts mildly with dilute HCl	15.0

Eureka Quartzite

Table II. Position of USNM localities in measured sections.

Section: Tony Grove Lake, Utah

USNM Locality	Formation	Member	Unit	Feet above base of unit
19324	Laketown	Jack Valley	28	—
19323	—"—	Portage Canyon	27	
19322	—"—	—"—	27	
19321T	—"—	High Lake	26	
19320	—"—	—"—	26	
19319	—"—	—"—	25	
19318	—"—	—"—	25	
19317	—"—	—"—	25	
19316T	—"—	—"—	25	
19315	—"—	—"—	24	
19314	—"—	—"—	24	
19313	—"—	—"—	24	
19312	—"—	—"—	24	
19311	—"—	Tony Grove Lake	23	
19310	—"—	—"—	23	
19309	—"—	—"—	22	
19308	—"—	—"—	22	
19307	—"—	—"—	21	
19306	—"—	—"—	21	
19305	—"—	—"—	20	
19304	—"—	—"—	19	
19303	—"—	—"—	19	
19302	—"—	—"—	18	
19301	—"—	—"—	17	
19300	—"—	—"—	17	
19299	Fish Haven	Bloomington Lake	15	
19298	—"—	—"—	15	
19297	—"—	—"—	15	
19296	—"—	—"—	9	
19295	—"—	Deep Lakes	5	
19294	—"—	—"—	5	
19293	—"—	—"—	4	2.9
19292	—"—	—"—	1	
19291	—"—	Paris Peak	—	

Section: Southern Lakeside Mountains, Utah

USNM Localtiy	Formation	Member	Unit	Feet above base of unit
19048	Laketown	Portage Canyon	38	1.3
19047	—"—	—"—	34	2.6
19039	—"—	High Lake	31	5 to 20
19040	—"—	—"—	22	11.0
19042	—"—	Tony Grove Lake	19	hill east of measured section
19041	—"—	—"—	19	—"—
19046	Fish Haven	Undivided	10	16.0
19045	—"—	—"—	10	12.9
19044	—"—	—"—	10	near base
19043	—"—	—"—	8	2.3

Section: Barn Hills, Utah

USNM Locality	Formation	Member	Unit	Feet above base of unit
19552	Laketown	Decathon	44	lower 2 feet
19551	—"—	Jack Valley	42	50.8
19550	—"—	—"—	41	62.8
19549	—"—	—"—	39	53.1
19548	—"—	Gettel	38	19.1
19547	—"—	—"—	38	9.4
19546	—"—	—"—	38	6.7
19545	—"—	High Lake	37	153.5
19544	—"—	—"—	37	146.6
19543	—"—	—"—	37	132.6
19542	—"—	—"—	37	123.3
19541	—"—	—"—	37	54.6
19540	—"—	Tony Grove Lake	36	7.6
19539	—"—	—"—	35	20.3
19538	—"—	—"—	33	41.4
19537	—"—	—"—	33	27.3
19536	—"—	—"—	33	11.1
19535	—"—	—"—	19	at base
19534	—"—	—"—	18	20.4
19533	—"—	—"—	18	3.0
19532	Ely Springs	Floride	12	12.9
19567	—"—	Lost Canyon	7	8.1
19556	—"—	—"—	7	1.5
19555	—"—	Barn Hills	4	13.4
19554	—"—	—"—	3	71.5
19553	—"—	—"—	3	41.8

Section: Silver Island Mountains, Utah

USNM Locality	Formation	Member	Unit	Feet above base of unit
19122	Laketown	Tony Grove	25	22.7
19121	—"—	—"—	24	7.0
19402	—"—	—"—	23	approx. 5.0
19120	—"—	—"—	23	approx. 2.0
19400	Ely Springs	Floride	22	at top
19401	—"—	—"—	22	89.0
19119	—"—	Lost Canyon	21	68.2
19118	—"—	—"—	21	12.9
19117	—"—	—"—	21	1.2
19116	—"—	—"—	20	29.8
19115	—"—	—"—	20	16.7
19114	—"—	—"—	15	26.7
19113	—"—	—"—	15	11.6
19112	—"—	—"—	15	7.3
19111	—"—	—"—	15	3.3
19110	—"—	—"—	15	0.4
19109	—"—	Ibex	7	33.5
19108	—"—	—"—	7	10.2
19107	—"—	—"—	5	1.0
19106	—"—	—"—	3	0.5
19105	—"—	—"—	1	at base

Section: Southern Egan Range I, Nevada

USNM Locality	Formation	Member	Unit	Feet above base of unit
19192	Laketown	Decathon	38	at base
19191	—"—	Jack Valley	37	66.4
19190	—"—	—"—	37	63.1
19189	—"—	—"—	37	51.6
19188	—"—	—"—	37	43.5
19187	—"—	—"—	37	37.0
19186	—"—	—"—	37	24.7
19185	—"—	—"—	37	at base
19184	—"—	High Lake	35	111.3
19183	—"—	—"—	35	104.7
19182	—"—	—"—	35	58.4
19181	—"—	—"—	35	52.3
19180	—"—	—"—	35	10.9

19178T	—"—	—"—	34	58.0
19179	—"—	—"—	34	52.7
19177	—"—	—"—	33	60.2
19176	—"—	—"—	29	at base
19174	—"—	Tony Grove Lake	26	111.6
19172	—"—	—"—	26	96.6
19173	—"—	—"—	26	90.7
19171	—"—	—"—	26	71.5
19170	—"—	—"—	26	58.7
19169	—"—	—"—	26	29.2
19168	—"—	—"—	26	12.3
19167	—"—	—"—	25	39.4
19166	—"—	—"—	24	at top
19165	—"—	—"—	24	26.6
19164	—"—	—"—	24	14.8
19163	—"—	—"—	24	4.5
19162	Ely Springs	Floride	20	at base
19161	—"—	—"—	19	at top
19160	—"—	—"—	19	0.7
19159T	—"—	Undifferentiated	15	—
19158T	—"—	—"—	15	—
19157	—"—	—"—	14	99.2
19156	—"—	—"—	14	38.4
19155	—"—	—"—	13	22.7
19154	—"—	—"—	13	18.1
19153	—"—	—"—	12	18.8
19152	—"—	—"—	11	at top
19151	—"—	—"—	10	31.8
19150	—"—	—"—	10	30.2
19149	—"—	—"—	10	25.3
19148	—"—	—"—	10	20.1
19147	—"—	—"—	8	23.4
19146	—"—	—"—	3 & 5	top of unit 3 through unit 5 (12 foot interval)
19145	—"—	—"—	3	11.1
19143	—"—	—"—	3	0.7
19144	—"—	—"—	3	at base

Section: Southern Egan Range II, Nevada

USNM Locality	Formation	Member	Unit	Feet above base of unit
19211	Laketown	Jack Valley	6	47.7
19210	—"—	—"—	6	45.2
19209	—"—	—"—	6	17.9
19208	—"—	—"—	6	16.4
19207	—"—	—"—	6	11.2
19206	—"—	—"—	6	8.7
19205	—"—	—"—	6	at base
19204	—"—	Undifferentiated High Lake and Gettel	4	184.0
19203	—"—	—"—	4	173.1
19202	—"—	—"—	4	162.4
19201	—"—	—"—	4	157.0
19200T	—"—	—"—	4	108.7
19199	—"—	—"—	4	96.3
19198	—"—	—"—	4	85.6
19197	—"—	—"—	4	50.1
19196	—"—	—"—	4	47.7
19195	—"—	—"—	4	12.8
19194	—"—	—"—	2	35.6
19193	—"—	—"—	1	at base

Section: Southern Egan Range III, Nevada. NW 1/4 NE 1/4, Sec. 5, T. 8 N., R. 64 E.

USNM Locality	Formation	Member	Unit	Feet above base of unit
19175	Laketown	High Lake	—	near top

Section: Delamar Mountains, Nevada

USNM Locality	Formation	Member	Unit	Feet above base of unit
19521T	Laketown	Portage Canyon	27	upper part
19520	—"—	—"—	27	34.7
19519	—"—	High Lake	22	29.8
19523	—"—	—"—	21	about 105
19522	—"—	—"—	21	above 90
19517	—"—	—"—	21	62.1
19516	—"—	—"—	21	56.8
19515	—"—	—"—	21	24.2
19514T	—"—	Tony Grove Lake	19	near base
19513	—"—	—"—	18	4.8
19524	—"—	—"—	17	near base
19518T	—"—	—"—	17	near base
19512	—"—	—"—	14	53.8
19511	—"—	—"—	14	44.7
19510	—"—	—"—	14	27.7
19509	—"—	—"—	13	at top
19508	—"—	—"—	12	63.8
19507	—"—	—"—	12	37.7
19506	—"—	—"—	12	20.3
19505	—"—	—"—	12	7.3
19504	Ely Springs	Floride	11	36.8
19503	—"—	—"—	9	at base
19502	—"—	—"—	8	11.0
19501	—"—	—"—	8	5.5
19500	—"—	Lost Canyon	6	24.9
19499	—"—	—"—	6	19.3
19498	—"—	—"—	6	7.2
19497	—"—	—"—	6	4.6
19496	—"—	—"—	6	2.6
19495	—"—	—"—	6	0.5
19494	—"—	Barn Hills	5	64.1
19493	—"—	—"—	5	57.3
19492	—"—	—"—	2	97.0
19491	—"—	—"—	2	91.0
19490	—"—	—"—	2	84.8
19489T	—"—	—"—	2	17.7
19489	—"—	—"—	2	9.2

Section: Cherry Creek Range, Nevada

USNM Locality	Formation	Member	Unit	Feet above base of unit
19244	Laketown	Decathon	54	from lower 24.5 ft.
19276T	—"—	Portage Canyon or Jack Valley	51	116.5
19275	—"—	—"—	51	105.7
19274	—"—	High Lake	49	10.1
19273	—"—	—"—	49	at base
19272	—"—	—"—	45	16.8
19271T	—"—	—"—	45	—
19270	—"—	—"—	42	34.2
19269	—"—	Tony Grove Lake	41	at top
19268T	—"—	—"—	40	—
19267	—"—	—"—	40	29.4
19266	—"—	—"—	39	12.0
19265	—"—	—"—	36	at base
19264	—"—	—"—	32	3.2
19263T	—"—	—"—	30	upper 2/3 of unit
19262	—"—	—"—	30	18.7
19261	—"—	—"—	30	14.8
19260	Ely Springs	Floride	27	at top
19259	—"—	—"—	27	25.5
19258	—"—	—"—	27	11.0
19257	—"—	—"—	25	2.5
19256	—"—	—"—	25	1.8
19255	—"—	Lost Canyon?	24	67.8
19254	—"—	—"—	24	29.5
19253	—"—	—"—	20	0.4
19252	—"—	Barn Hills?	16	33.9
19251	—"—	—"—	16	14.5
19250	—"—	—"—	14	at top
19249	—"—	—"—	13	38.7
19248	—"—	—"—	7	43.1
19247	—"—	—"—	6	2.1
19246	—"—	Ibex	1	17.6
19245	—"—	Ibex	1	2.6

Section: Pancake Range, Nevada

USNM Locality	Formation	Member	Unit	Feet above base of unit
19488	Laketown	Portage Canyon	29	35.2
19487	—"—	—"—	29	9.6
19486	—"—	—"—	25	24.3
19485	—"—	—"—	25	21.0
19214	—"—	—"—	25	—
19484	—"—	High Lake	20	—
19213	—"—	Tony Grove Lake	17	near top
19483	—"—	—"—	15	7.2
19482	Ely Springs	Floride	13	41.6
19481	—"—	—"—	13	40.4
19476	—"—	—"—	13	39.0
19475	—"—	—"—	13	37.7
19480	—"—	—"—	13	34.5
19478	—"—	—"—	13	17.9
19212	—"—	—"—	13	—
19479	—"—	—"—	(100′ N. of sect. in 13)	approx. 23.0
19477T	—"—	—"—	11	—
19474	—"—	—"—	9	22.4
19473	—"—	Barn Hills or Lost Canyon	7	15.3
19472	—"—	—"—	6	57.0
19471	—"—	—"—	6	27.4
19470T	—"—	—"—	6	4.6
19469	—"—	—"—	4	66.2

PART B: NOTES ON SECTIONS THAT WERE VISITED BUT NOT MEASURED

EUREKA, UTAH

Late Ordovician and Silurian rocks were examined in the Eureka, Utah, area along a section which was described in detail by Morris & Lovering (1961, p. 58-70). The section begins west of the Raymond-Illinois shaft and continues eastward beyond the Colorado Chief shaft in N½, NE¼, sec. 1, T. 10 S., R. 3 W. (see Morris, 1957, pl. 4).

Overlying the Ophonga Limestone, Morris & Lovering (1961) recognized 285.5 feet of Fish Haven Dolomite, which is here questionably assigned to the lower part of the Ely Springs Dolostone. The lower part of the Ely Springs Dolostone is overlain by the 491 foot thick Bluebell Dolomite (named by Lindgren & Laughlin, 1919) which is late Ordovician, Silurian, and Devonian in age.

The Bluebell Dolomite was divided into Lower and Upper Members by Morris & Lovering (1961). In the section studied, Morris & Lovering (1961) divided the Lower Member of the Bluebell Dolomite into units 1 through 10, and the Upper Member into units of 11 through 23. The basal 130 feet of the Bluebell Dolomite (units 1 through 4) are assigned to the Floride Member of the Ely Springs Dolostone and resemble the Member as developed in the Ibex Hills and on Spors Mountain.

Morris & Lovering (1961, p. 68) report that a fossil collection (USGS 3075-SD) from Unit 3 contains *Propora* sp., identified by Jean Berdan, who assigned an age of "probably Late Ordovician". Unit 4 is undated.

On the basis of lithologic similarity, stratigraphic position and Middle Llandovery age, Units 5 to 10 of the Bluebell Dolomite are allied with the Tony Grove Lake Member of the Laketown Dolostone, which is thus 361 feet thick in this section (thickness from Morris & Lovering, 1961). Fossils from Unit 5 include *Virgiana* sp. (ibid, p. 68); it is thus Middle Llandovery in age. USNM loc. 19574, collected in Unit 10, also has *Virgiana* sp. and is Middle Llandovery. Units 5 to 10 are medium and dark gray in color, and include coquinas of *Virgiana*? sp; they also contain conglomerates, laminated, and mottled beds, as is characteristic of the Tony Grove Lake Member.

The Colorado Chief marker bed (Unit 11) at the base of the Upper Member of the Bluebell Dolomite, contains abundant algal stromatolites (see Morris & Lovering, 1961, fig. 27). Unit 11 was placed in the Upper Member of the Bluebell Dolomite by Morris & Lovering (1961), but it could just as reasonably be placed in the Lower Member of the Bluebell (Tony Grove Lake Member of Laketown Dolostone). Four miles to the northwest, in the Pinyon Peak area, Morris & Lovering (1961, p. 64-5) report that Unit 11 has been "eroded away", and above the erosion surface

is a bed which has Devonian age fish plates. Since Unit 11 was probably eroded prior to commencement of deposition of the Upper Member in the Pinyon Peak area it can be inferred that, during deposition, the Colorado Chief was more likely related to the Lower than the Upper Member of the Bluebell Dolomite.

The higher Members of the Laketown Dolostone are absent due to either erosion or non-deposition. Morris & Lovering (1961) established that the Upper Member of the Bluebell Dolomite (unit 12 upward) is Devonian.

Since the Bluebell Dolomite has proved a successful formational unit during mapping in this structurally complex area we do not recommend its abandonment. The stratigraphic relationships suggested above are tentative and only detailed mapping and stratigraphic work can establish their validity.

USNM loc. 19574 - Below contact of Colorado Chief marker bed in Unit 10 of Morris and Lovering (1961).

USNM loc. 19575 - From Colorado Chief marker bed (Unit 11 of Morris & Lovering, 1957). Collected in a gully near Colorado Chief Mine.

COVE FORT, UTAH

USNM loc. 19430, from rocks that are possibly part of the Laketown Dolostone, was collected in a road cut on the west side of Interstate 15 north of Cove Fort, Utah, NE¼, NE¼, sec. 35, R. 7 W., T. 24 S. This collection was made from a large upright block. The Sevy Dolostone overlies USNM loc. 19430 by about 20 feet. The rocks which contain this locality were mapped as Fish Haven Dolomite by Zimmerman (1961).

USNM loc. 19431 is from the same general area as USNM loc. 19430 but about 2/10 mile to the north on the west side of Interstate 15.

USNM loc. 19432 is talus from the same place as USNM loc. 19431.

SHEEP ROCK MOUNTAINS, UTAH

The Fish Haven and Laketown Dolostones were examined briefly in the Sheeprock Mountains near Vernon, Utah, in sections 30 and 31, T. 8 S., R. 6 W., along the mountain front. The stratigraphy of this region was described by Cohenour (1959). Sufficient time was not available for us to identify each of the numbered units recognized by Cohenour (1959, p. 160-163). In the discussion below his numbered units are tentatively assigned to the various members.

Fish Haven Dolostone

The lower members of the Fish Haven Dolomite are dark gray, and medium to thick bedded; dark brownish chert is common in nodules and discontinuous beds. The lower members probably included Units. 6, 7 and 8 of the Fish Haven described by Cohenour (1959, p. 161) in his section

0-5. The total thickness of these units, as measured by Cohenour, is 257 feet.

The upper part of the Fish Haven Dolostone is alternating light and dark gray dolostone, thin to massively bedded and mottled in places. This member is less cherty than the lower part of the formation.

Laketown Dolostone

The Laketown Dolostone is divisable into the Tony Grove Lake, High Lake, and Portage Canyon Members. The section was described by Cohenour (1959, p. 162-163) as his composite section S-1 and S-2.

The Tony Grove Lake Member is dark gray, laminated in part, mottled in part, and commonly medium to thick bedded. It includes units 8 to 10 of Cohenour (1959, p. 163); he reported an aggregate thickness of 193 feet.

The High Lake Member is light colored, thick to massively bedded, with abundant light colored chert. It includes the 128 foot Unit 7 of Cohenour (1959, p. 163) and the lower 120 feet of his Unit 6.

The Portage Canyon Member is dark gray, medium to thick bedded, and more finely crystalline than the High Lake Member. It includes Units 4, 5, and the upper part of Unit 6 of Cohenour (1959, p. 163), with a reported aggregate thickness of 144 feet.

Water Canyon Formation

Units 1 to 3 (411 feet thick) of the Laketown Dolomite described by Cohenour (1959, p. 162) should be included in the Water Canyon Formation. Cohenour described the lithology of the units as gray, aphanitic dolomite that is faintly laminated. Our examination revealed the units to by typical of the Water Canyon Formation. Cohenour (1959, p. 162) placed the upper boundary of the Laketown at a point where small, rounded sand grains appear in the light gray dolomite. Williams and Taylor (1964) divided the Water Canyon Formation in Northern Utah into a lower, Card Member, which has no coarse clastic content, and an upper, Grassy Flat Member, which is "marked by an increase in grain size in the clastic component" (Williams and Taylor, 1964, p. 39). Units 1 to 3 of the Laketown Dolomite, as described by Cohenour (1959, p. 162), are placed in the Card Member of the Water Canyon Formation. The sand speckeled unit, assigned by Cohenour to the Sevy Dolomite, is here assigned to the Grassy Flat Member of the Water Canyon Formation.

USNM loc. 19576 is from the upper 35 feet of the Portage Canyon Member of the Laketown Dolostone. It was collected in the S.W. ¼ of sec. 30, T. 8 S., R. 6 W., along the outcrop of Unit 4 of Cohenour (1959, p. 163, pl. 1), from beds that are near or include fossil localities S2, S3, S4 and S5 of Cohenour (pl. 2, p. 186-187).

SPORS MOUNTAIN, UTAH

Staatz & Osterwald (1959) divided the stratigraphic interval under consideration into six formations, some of which we recognize as members. This stratigraphic work was refined by Staatz & Carr (1964), who also carried the units to the adjacent Thomas and Dugway Ranges. We examined the section near the Lost Sheep Blowout Mine, northern Spors Mountain T. 12 S., R. 12 W. (Staatz and Osterwald, 1959, pl. 1).

Ely Springs Dolostone

In the two reports cited above, rocks overlying the Swan Peak Quartzite were assigned to the Fish Haven Dolomite and divided into lower and upper members. We assigned this unit to the Ely Springs Dolostone rather than to the Fish Haven Dolostone.

We recognize the Floride Formation of Staatz & Osterwald (1959, p. 21-22) and Staatz & Carr (1964, p. 40) as a member of the Ely Springs Dolostone. It is a fine grained, gray, thick-bedded unit which ranges from 100 to 135 feet in thickness on Spors Mountain (Staatz & Carr, 1964). Scattered, small oolites occur 20 feet from the top of the Floride Member. They represent the oolite horizon that is often associated with the sand horizon at the top of the Ely Springs Dolomite (Mullens & Poole, 1972).

Laketown Dolomite

Strata we assign to the Tony Grove Lake Member were divided into three formations by Staatz & Osterwald (1959). They are the Bell Hill Dolomite at the base, the Harrisite Dolomite in the middle, and the Lost Sheep Dolomite at the top. These formations are described in detail by Staatz & Osterwald (1959) and Staatz & Carr (1964). Staatz & Carr (1964) described the units in the Thomas and Dugway Ranges and reported their presence in the Fish Springs Range.

The Bell Hill Dolomite is commonly cross bedded and bioclastic. Bioclastic beds of rugose corals are abundant (See Staatz & Osterwald, 1959, p. 6). Staatz and Carr (1964, p. 43) reported that *Virgiana* cf. *V. decussata* was identified by J. Berdan and H. Duncan in collections from the upper 100 feet of the formation; a Middle Llandovery age is indicated by that brachiopod. The Bell Hill Dolomite ranges in thickness from 340 to 410 feet on Spors Mountain and in the Dugway Range.

The Harrisite Dolomite is massive, dark gray to black, and averages about 140 feet in thickness (Staatz & Carr, 1964, p. 45). *Pentamerus* sp. was collected from the upper few feet of this formation near Lost Sheep Blowout Mine (USNM loc. 19570). Lithologically the upper beds resemble Unit No. 33 in the Barn Hills Section, which also contains *Pentamerus* sp. The upper part of the formation is dated on the basis of these brachiopods as Late Llandovery. *Petamerus* is not known to range below the Late Llandovery; the upper age limit is established by Late Llandovery (C4-5) age *Pentameroides* sp. in overlying units.

The Lost Sheep Dolomite is of alternating light and dark gray. In its upper part it is interbedded with the light colored High Lake Member of the Laketown Dolostone. Staatz & Carr (1964) report that formation is 215 to 220 feet thick on Spors Mountain. The Tony Grove Lake Member of the Laketown Dolostone is thus about 700 feet thick.

The Thursday Dolomite (Staatz & Osterwald, 1959) corresponds to the High Lake Member of the Laketown Dolostone. Staatz & Carr (1964, p. 47) reported a composite thickness of about 330 feet, but no complete section was available to them. Two of our collections (USNM loc. 19569 & 19571) contain *Pentameroides* sp. Overlying members of the Laketown Dolostone are not present. The Sevy Formation is typical of that formation in its type section in the Deep Creek Range, Utah.

The validity of the formations in the areas in which they were recognized has been amply demonstrated by the detailed mapping of this region by Staatz, Carr, and Osterwald. The formational names have been applied to only a limited region, however, and for the purposes of this work it is sufficient to point out their regional stratigraphic relationships.

USNM loc. 19569 is from the High Lake Member of Laketown Dolostone (equals Thursday Dolomite) in northern Spors Mountain, collected on a ridge northeast of the Lost Sheep Blowout Mine, at an elevation of 5,775 feet (see Staatz & Osterwald, 1959, pl. 1).

USNM loc. 19571 is from the High Lake Member of Laketown Dolostone (equals Thursday Dolomite), on northern Spors Mountain, east of road to Lost Sheep Blowout Mine, stratigraphically just below the contact with the Sevy Dolomite, on the divide shown by Staatz & Osterwald (1959, pl. 1).

USNM loc. 19570 from the Tony Grove Lake Lower Member of Laketown Dolostone, was collected from the upper few feet of the Harrisite Dolomite, at the point where a dirt road is shown to end at the Lost Sheep Blowout, northern Spors Mountain (see Staatz & Osterwald, 1959, pl. 1). The collection was made from the west side of the roadcut and from beds a few feet above the road.

CONFUSION RANGE, UTAH

The Jack Valley member of the Laketown Dolostone is exposed in sec. 16, R. 16 W., T. 20 S., just south of U.S. Highway 50 near the west end of Kings Canyon in the Confusion Range, Conger Mountain 15′ Quadrangle, Millard Co., Utah. It is overlain by the Decathon Member which is 47 feet thick. The Jack Valley Member is 155 feet thick, and its lithology is closely comparable with the development of the member in the Barn Hills section, about 20 miles to the southeast.

USNM loc. 19050 was collected from the first prominent outcrops of

the Jack Valley Member that lie south of the highway. It is about 140 feet above the base of the Member.

USNM loc. 19051 was collected about 100 yards southeast of USNM loc. 19050 and 3 to 10 feet (stratigraphically) below the latter locality.

A section of the Jack Valley Member was measured about 150 yards south of USNM loc. 19050.

USNM loc. 19052 134 feet above the base of the Jack Valley Member.
19053 126 feet above the base of the Jack Valley Member.
19054 124 feet above the base of the Jack Valley Member.
19055 114 feet above the base of the Jack Valley Member.
19056 111 feet above the base of the Jack Valley Member.
19057 103 feet above the base of the Jack Valley Member.
19058 77 feet above the base of the Jack Valley Member.
19059 68 feet above the base of the Jack Valley Member.

USNM loc. 19061 lies in the uppermost part of the Gettel member of the Laketown Dolomite.

USNM loc. 19063 is a collection from talus high in the Jack Valley Member.

DEEP CREEK RANGE, UTAH

The Fish Haven, Laketown and Sevy Dolostones were examined in Sevy and Simonson Canyons, Gold Hill Quadrangle, Utah. The stratigraphic sequence in the Gold Hill Quadrangle was described by Nolan (1935).

Fish Haven Dolomite

The Fish Haven Dolomite, as described by Nolan (1935, p. 16-17), rests directly upon the Lower Ordovician Chokecherry Dolomite. The Eureka formation is not present.

Laketown Dolomite

The Laketown Dolostone as described by Nolan (1935, p. 17-18) is divisable into four members recognized in this report. Nolan (1935, p. 17-18) reported a thickness of 970 feet on a ridge between Dry Canyon and Sheep Canyon. Nolan's (1935) descriptions are reproduced under the subdivisions recognized in this report:

Tony Grove Lake Member:

Lithology. — The lower half of the Laketown dolomite is dark gray, rather massively bedded, and notably fossiliferous. Much of the rock is mottled or laminated, and such beds contain intraformational conglomerates. The appearance of these conglomerates was so striking that in the field they were distinguished by the name "marble cake" dolomite (pl. 5, D). Sections of a

pentameroid brachiopod (*Virgiana* sp.) may be found throughout this zone, and one persistent bed, about 100 feet above the base, is largely made up of this fossil. (Nolan, 1935, P. 17).

High Lake Member:

Above this dark dolomite is 350 to 400 feet of medium-gray massive dolomite. This zone is almost lacking in fossils and has none of the textural features so abundant in the lower beds. Most of the beds are rather coarsely crystalline, and a few contain vugs filled with white, well-crystallized dolomite (Nolan, ibid.)

Portage Canyon Member:

This zone is overlain by another of massively bedded dark-gray to black dolomite, which also shows no unusual textural features except local thin chert stringers. It contains abundant fossil corals, which are locally silicified. This zone is about 150 to 200 feet thick. (Nolan, ibid.)

Decathon Member:

Above it from Sheep Canyon southward is a medium to light gray coarsely crystalline dolomite, which locally contains a bed crowded with large brachiopods of the genus *Trimerella*. This dolomite is not found to the north. (Nolan, ibid.)

USNM loc. 19277 is from talus in the Portage Canyon Member of the Laketown Dolostone in Simonson Canyon (See Nolan, 1935, pl. 1).

USNM loc. 19278 is from talus in the Portage Canyon Member collected along road to Dewey Mine, Sevy Canyon (See Nolan ibid.).

USNM loc. 19279 is from talus from the Portage Canyon Member west of Dewey Mine, Sevy Canyon (see Nolan, ibid.).

USNM loc. 19284 is from the Portage Canyon Member just under the Sevy Dolostone, Dewey Mine, Sevy Canyon (see Nolan, ibid.).

USNM loc. 19281 is from the Sevy Dolostone at Sevy-Laketown Con-tact in typical Sevy lithology (the Decathon Member is absent), in Sevy Canyon west of Dewey Mine (type section of Sevy Dolomite). Gastropods.

USNM loc. 19282 is from fifty to sixty feet above the base of the Sevy Dolostone.

USNM loc. 19283 is from a point approximately two-thirds of the way through the Sevy Dolostone, west of Dewey Mine, Sevy Canyon.

PROMONTORY RANGE, UTAH

The upper part of the Laketown Dolostone was examined on the West-ern side of the Promontory Range, NE¼ sec. 36, T. 9 N., R. 6 W., Box Elder Co., Utah (Olson, 1956, fig. 11). Collections were made high in the Portage Canyon Member on the hill behind Old Fort Ranch. The hill includes two

domes; the southern (highest) dome may have the Water Canyon Formation exposed at its top. The three localities, USNM loc. 19002, 19003, 19004, are located in the saddle between the two domes. They were collected in the upper 10 to 20 feet of the Portage Canyon Member of the Laketown Dolostone. USNM loc. 19004 is stratigraphically the lowest and USNM loc. 19002 is stratigraphically the highest.

PAHRANAGAT RANGE, NEVADA

A section was examined on the east side of the southern Pahranagat Range, west of Upper Pahranagat Lake, Lincoln Co., Nevada. This is the Buckhorn Fault section of Reso (1960).

The stratigraphic sequence was described by Reso (1960, 1963). His divisions of the Ely Springs, Laketown and Sevy Dolomites correspond closely with those recognized herein. The stratigraphic section is similar to that in the Delamar Range measured section; the similarities were recognized by Reso (1960, 1963).

Reso (1963) divided the Ely Springs Dolomite into three members; his lower two (totaling about 250 feet) are included in the lower member of this report. The 150 foot thick Upper Member of the Ely Springs Dolomite is the Floride Member.

Reso (1963) divided the Laketown Dolomite into three members. Based on several sections in the Pahranagat Range he (1963, pl. 2) assigned thicknesses of 228 to 341 feet for the Lower Member (=Tony Grove Lake Member), 324 to 400 feet for the Middle Member (=High Lake Member), and 89 to 222 feet for the Upper Member (?=the Portage Canyon Member). Reso (1960) noted that the Upper Member includes interbeds with lithologic aspect similar to his Middle Member.

The Lower Member of the Sevy Dolomite (= unit 1 of Reso, 1960, p. 275) corresponds to the Decathon Member of the Laketown and is at least 245 feet thick in his Fossil Mountain section. Johnson and Reso (1964) described a brachiopod-coral fauna from the base of the Sevy Dolomite; we assign this horizon to the Decathon Member. They concluded that the age was probably Ludlow, but the possibility of a Late Wenlock age could not be eliminated.

USNM loc. 19141 was collected a few feet from the base of the Decathon Member in the Buckhorn Fault section.

MAHOGANY HILLS, NEVADA

The area was mapped by Merriam (1963, pl. 1) at a scale of 3/8 inch to a mile. Merriam (1963) recognized a sequence of Eureka Quartzite, Hanson Creek Formation, Roberts Mountains Formation, and Lone Mountain Dolomite. The section was examined north of a dirt road which passes north of Wood Cone Peak, Bellevue Peak 15′ Quadrangle. The section lies between Merriam's (1963) fossil localities 76 and 74. The sequence of

rock names used by Merriam is followed with the exception that Merriam's (1963) Roberts Mountains Formation is tentatively assigned to the Tony Grove Lake Member of the Laketown Dolostone.

The area was visited only briefly. The strata are poorly exposed and faulting complicates the sequence. As Merriam (1963, p. 38) indicated, the problems will not be solved until the area northwest of Wood Cone Peak is more carefully studied and mapped in more detail.

Hanson Creek Formation

The Hanson Creek Formation is poorly exposed north of the road near Merriam's (1963, pl. 1) fossil locality 76. Merriam's map (1963, pl. 1) indicates that the Eureka Quartzite extends northward beyond the road, but the Hanson Creek Formation lies near the intrusive body mapped by Merriam as Ti (older igneous rocks—intrusive). There is a covered interval between the contact and the road where the Eureka Quartzite may have been exposed when Merriam mapped the area. In a canyon south of the road where the Eureka-Hanson Creek contact is exposed, the basal unit of the Hanson Creek is a laminated limestone which is absent, as is the Eureka Quartzite north of the road. The Hanson Creek Formation is a bluish, mottled limestone which Merriam (1963, p. 31) indicated as partly dolomitic. Chert occurs as scattered nodules.

USNM 19531—Lower part of the Hanson Creek Formation, north of east-west dirt road which runs between Wood Cone Peak and Combs Peak, Bellevue Peak 15′ Quad., Nevada. This locality lies at an elevation of about 7,060 feet in the low point of an east-west trending, saddle-shaped ridge one mile northwest of Wood Cone Peak.

Laketown Dolostone

These rocks were assigned to the Roberts Mountains Formation by Merriam (1963, p. 37), who noted that the beds are highly disturbed. He did not attempt to differentiate them from the overlying Lone Mountain Dolomite on his map. The contact with the Hanson Creek Formation was not seen. The rocks tentatively assigned to the Tony Grove Lake Member are thick-bedded, dark gray and dark bluish gray dolomite. They include beds with a clastic texture similar to that which is common in the Tony Grove Lake Member. A ribbed pentamerid brachiopod identified as *Virgiana*? sp. was recovered from high in this interval.

The rocks are not platy and are more thickly bedded than the Roberts Mountains Formation. The basal chert zone of the Roberts Mountain Formation was not seen nor was it mentioned by Merriam (1963). Based on position in the sequence, lithologic aspect, and the presence of *Virgiana*? sp. the unit is tentatively assigned to the Laketown Dolostone. The member is probably over 100 feet thick.

USNM loc. 19528 two miles north and slightly west of Wood Cone Peak,

Bellevue Peak 15′ Quad., Nevada. 7200′ foot elevation, on a small ridge 500 feet north of a prominent nob. Upper part of ?Tony Grove Lake Member.

Lone Mountain Dolostone

The Lone Mountain Dolostone is light gray, thick to massively bedded, sugary dolomite. Several dark beds are present in the upper part of the formation. They might be included as the Portage Canyon Member of the Laketown Dolomite, but for the present we believe that they are equivalent to similar dark beds which have been found in the Lone Mountain Dolostone in the Ruby Mountains. This is probably Merriam & McKee's (1976) Unit 2 of the Lone Mountain Dolostone. The small fossil collections obtained, as well as fossils reported by Merriam (1963, p. 41), indicate a Wenlock or younger Silurian age for the dark beds (see Winterer and Murphy, 1960, p. 136-137).

USNM loc. 19529 from the Lone Mountain Dolostone, southern Mahogany Hills, Nevada, was collected 9,200 feet north of Wood Cone Peak and 4,700 feet southwest of hill 8,265 at an elevation of 7,300 feet, Bellevue Peak 15′ Quad., Nevada. The dolomitic fossils are from a dark unit, high in the Lone Mountain Dolostone.

USNM loc. 19530, collected about 60 feet southwest of USNM loc. 19529, has silicified fossils, and is from the same dark units.

BALD MOUNTAIN, NEVADA

Bald Mountain in White Pine County, Nevada, was mapped by Rigby (1960). Two sections were examined. The first section is near "The Gap" (see Rigby, 1960, fig. 5). The section was examined along the prominent ridge extending northwest from Hill 7524, sec. 16, T. 25 N., R. 57 E., Cold Creek Ranch 15′ Quadrangle. The second section examined is a short distance southeast of Copper Basin (Rigby, fig. 5). It lies at the head of Bourne Canyon on the nob which lies south of the road and west of several shafts, a prospect and a tunnel shown on the Cold Creek Ranch 15′ Quadrangle.

Rigby (1960, p. 174) found, that over a distance of three miles, the Eureka Quartzite thinned northward from 234 feet to approximately 100 feet. He suggested the thinning was due to a regional unconformity prior to the deposition of the overlying dolostone units.

Ely Springs Dolostone

Rigby (1960) recognized the Fish Haven Dolostone above the Eureka Quartzite. This brownish-gray unit is considered herein to include the lower members of the Ely Springs Dolostone. According to Rigby (1960, p. 174) the unit is 280 feet thick near "The Gap". The lower part is darker and more cherty than the upper part.

The Floride Member of the Ely Springs Dolostone was included as the lowest unit in the Laketown Dolostone by Rigby (1960, p. 174). It is fine-grained, light colored, laminated in part, and in some places mottled. The Floride Member includes some light colored, coarsely crystalline beds, and is to 30 to 100 feet thick (Rigby, 1960, p. 174). The sand grain horizon of Mullens and Poole (1972) was searched for but not found.

Laketown Dolostone

The Tony Grove Lake Member of the Laketown Dolostone is Rigby's (1960) second unit of the Laketown. It is dark gray to brownish gray; clastic and bioclastic beds are common. *Virgiana*? sp. is locally abundant in bioclastic beds. *Virgiana* sp. has been confidently identified from USNM loc. 19525 collected from equivalent strata in the southern section. Rigby reported a thickness of 230 feet for this member.

Lone Mountain Dolostone

Beds lying stratigraphically above the Tony Grove Lake Member of the Laketown Dolostone are light-colored, relatively coarsely crystalline, and thick to very thick-bedded. This unit is assigned to the Lone Mountain Dolostone rather than to the High Lake Member of the Laketown because the upper members of the Laketown were not seen, nor were strata with lithologic aspect typical of the upper members reported by Rigby (1960). The Tony Grove Lake Member is repeated by faulting near the top of Hill 7424.

USNM loc. 19525 is from the Tony Grove Lake Member of Laketown Dolostone, on Hill 7524, sec. 16, T. 27 N., R. 57 E., at an elevation of 7240 feet in the gully which extends to the northwest from the top of Hill 7524 (Cold Creek Ranch 15′ Quadrangle). It is from a segment of the member which has been repeated by faulting.

USNM loc. 19526 is from the Tony Grove Lake Member of Laketown Dolostone. It is near the top of Bourne Canyon, just west of the group of mines which lie south of the road, in Cold Creek Ranch 15′ Quadrangle.

USNM loc. 19527 is from the Ely Springs Dolostone, near USNM loc. 19526. It includes dolomitized corals.

SPRUCE MOUNTAIN, NEVADA

The Tony Grove Lake Member of the Laketown Dolostone rests directly upon a 10 foot bed of Eureka Quartzite on Spruce Mountain. The presence of the member was established during a brief visit to the area with Roger Hope in July, 1970.

The section was examined along the ridge crest beginning where the Eureka Quartzite crops our near the intersection of sections 26, 27, 34, 35, T. 31 N., R. 63 E., Spruce Mountain 15′ Quadrangle (Hope, 1972). The

section was not measured and thicknesses are only unreliable estimates. The basal 50 feet of the member is predominantly dark and laminated but contains a few 6 foot thick, light colored beds. Bioclastic beds contain pentamerid brachiopods (possible *Virgiana* sp.) and rugose corals. The lowest pentamerid was found 6 feet above the Eureka Quartzite. The lighter colored beds are laminated; some algal laminated beds are present. The upper 125 feet of the Tony Grove Lake Member is more lightly colored than the lower 50 feet of the member. The member is overlain by about 200 feet of predominantly light gray dolomite which may be the High Lake Member of the Laketown Dolostone. The unit is mottled in places.

The High Lake Member of the Laketown Dolostone is overlain by a 75 foot thick unit of dark to medium gray dolomite questionably assigned to the Portage Canyon Member of the Laketown. A single pentamerid brachiopod was found in the unit. Colonial corals are common and occur in colonies up to 18 inches in diameter. The single pentamerid which was collected has disjunct outer plates and cannot be included in *Pentameroides.*

RUBY MOUNTAINS, NEVADA

Two areas in the southern Ruby Mountains were visited on a brief field excursion with R. Wilden and R.W. Kistler in July, 1970.

The first area is in the southernmost Ruby Mountains, 3½ miles north of Overland Pass. The exposures lie along the ridge crest at the end of the "Jeep Road" which extends north from Overland Pass (see Sherman Mountain 15′ Quadrangle).

The stratigraphy of this area was described briefly by Wilden & Kistler (1967, p. D65). The Eureka Quartzite is only a few feet thick; it is overlain by about 30 feet of brownish gray dolostone which is typical of the lower part of the Ely Springs Dolostone. The contact with the Eureka Quartzite is gradational through a short interval with quartz sand grains scattered throughout the lowest beds of the Ely Springs Dolostone. This interval is the Ibex Member. Wilden & Kistler (1967, p. D65) report that J.W. Huddle (who identified conodonts) and R.J. Ross, Jr. (who identified brachiopods) assigned the lower part of the formation to the Middle or Upper Ordovician. A collection of brachiopods was made from this member but it has not yet been prepared. The Ely Springs Dolostone is overlain by a thick-bedded, light gray unit which has a sharp basal contact (Wilden & Kistler, 1967, p. D65, fig. 3). Wilden & Kistler (1967) assigned this unit to the Lone Mountain Dolostone. From the very brief examination of these beds we cannot eliminate the possibility that the unit might be the Floride Member of the Ely Springs Dolostone. The Lone Mountain Dolostone was not examined in this area.

During the same field excursion, three stratigraphic sections were examined farther north in the Ruby Mountains. The Eureka Quartzite and

Ely Springs Dolostone are not present in these sections, and Silurian dolomites rest upon the Pogonip Group with what Wilden & Kistler (1967) consider to be an angular unconformity. They recognized the Lone Mountain Dolomite above the Pogonip Group. The lower two units of their Lone Mountain Dolomite are herein excluded from that formation. Wilden & Kistler (1967) describe the lower unit as a "platy, medium to fine-grained, locally nearly porcellaneous dolomite that weathers to a light pinkish gray". They report that it does not exceed 100 feet in thickness. The stratigraphic assignment of this unit is uncertain. The overlying 40 to 60 foot unit described by Wilden and Kistler (1967, p. D7) is a dark dolomite assigned here to the Tony Grove Lake Member of the Laketown Dolostone rather than to the Lone Mountain Dolostone.

The Tony Grove Lake Member is overlain by the Lone Mountain Dolostone which is over 1,000 feet thick (Wilden and Kistler, 1967; Sharp, 1942). There are dark units approximately in the middle of the Lone Mountain Dolostone which resemble units in a similar position in the Mahogany Hills. They may be Unit 2 of Merriam & McKee (1976). Brachiopods from these units are being studied by Dr. A.J. Boucot and Dr. J.G. Johnson.

In an area in the Northern Ruby Mountains, which was not seen by the authors, Howard (1971) reported a metamorphic sequence of Paleozoic rocks. The Eureka Quartzite is present but thins and is absent to the south. The Eureka is overlain by "massive white dolomite, virtually free of impurities except for some scattered tremolites" (Howard, 1971, p. 26). The white dolomite could be the Lone Mountain Dolostone.

PINYON RANGE, NEVADA

The Railroad Mining District in the Central Pinyon Range, Elko County, Nevada, was mapped by Ketner and Smith (1963) and Smith & Ketner (1975). A brief visit to the area was made in July, 1970. The section was examined near longitude 116° 00′ 00″, and latitude 40° 31′ 00″ (see Ketner and Smith, pl. 1). Ketner and Smith (1963, p. B7) report the Eureka Quartzite to be 70 feet thick. The Eureka is overlain by dolostones assigned to the Hanson Creek Formation by Ketner & Smith (1963, p. B8) and Smith & Ketner (1975). The lower part is dark gray (not brownish gray), fine grained, thick- to very thick-bedded dolomite with a few limestone interbeds. The unit is 130 feet (Ketner and Smith, 1963, p. B8).

The 20 foot thick Floride Member of the Ely Springs Dolomite was assigned to the basal Lone Mountain Dolomite by Ketner and Smith (1963, p. B8). The member is a yellowish brown dolomitic siltstone.

The light colored Lone Mountain Dolostone which overlies the Floride Member is poorly bedded and is commonly mottled. Ketner and Smith (1963, fig. 3) report that only 350 feet of the Lone Mountain Dolostone are exposed in the Railroad Mining District, but that elsewhere in the Pinyon range it is 1,000 feet thick.

USNM loc. 19077 was collected in the Ely Springs Dolostone about 4 feet above the Eureka Quartzite. The locality is about 1,500 feet WSW from the Triopli Mine, on the 7,200 foot contour level.

USNM loc. 19076 is from talus from the Floride Member of the Ely Springs Dolostone, collected just north of Ketner and Smith's (1963, pl. 1) section line BB′ on the 7,300 foot contour interval. It is in beds mapped as Hanson Creek Dolomite by Ketner and Smith (1963, pl. 1).

HOT CREEK RANGE, NEVADA

A section was briefly examined in Hot Creek Canyon, two miles northwest of Hot Creek, Nye County, Nevada. The section is located in the NE¼, NE¼, sec. 30 (unsurveyed), T. 8 N., R. 50 E. Thicknesses given below are taken from Cook (1966). The cliff-forming Eureka Quartzite is overlain by the 135 foot thick Hanson Creek Formation. The sand grain horizon was found about 20 feet below the top of the Hanson Creek formation. A chert bed (about 15 feet thick) lies at the base of the 500 foot thick Roberts Mountains formation. The Roberts Mountains Formation in the Hot Creek Range is dolomitic, and less well bedded than is typical of the formation. The lithologic aspect is probably typical of eastern exposures of the Roberts Mountains Formation.

USNM loc. 19468 was obtained 200 feet from the top of the formation; the presence of *Conchidium*? sp. indicates a probable Late Wenlock to Ludlow Age. The Lone Mountain Dolostone overlies the Roberts Mountains Formation.

BARE MOUNTAIN, NEVADA

A detailed section was measured and collected at Bare Mountain, Nye County, Nevada. The section is on the north side of Chuckwalla Canyon, near the intersection of secs. 29, 30, 31, 32 (unsurveyed), T. 12 S., R. 48 E., Bare Mountain 15′ Quadrangle, and was mapped by Cornwall & Kleinhampl (1961).

The lower part of the Ely Springs Dolostone, as recognized in this report, corresponds with their entire Ely Springs Dolostone. We measured a thickness of 264 feet in the Chuckwalla Canyon section.

The Floride Member of the Ely Springs Dolostone is 83 feet thick. It was described and included in the lower part of the Roberts Mountains Formation by Cornwall and Kleinhampl (1961). The unit is light colored, fine-grained argillaceous dolostone. The sand grain horizon (Mullens & Poole, 1972) occurs about 10 feet below the top of the formation.

The Roberts Mountains Formation as redefined here is dark, well bedded, silty, commonly limy dolomite that is 520 feet thick, according to Cornwall & Kleinhampl (1961).

NORTHERN UTAH

Fossil collections were made in five of the sections described by Budge (1966). These sections are the type section of the Laketown Dolostone in Lake Canyon, Blacksmith Fork Canyon, Four Mile Canyon, near Portage, and at Tony Grove Lake.

Laketown Canyon Section (type section):

The type section of the Laketown Dolostone is in the NW¼, SE¼, sec. 17, T. 12 N., R. 6 E., Randolph Quadrangle, Utah, and is 3½ miles southeast of Laketown, Utah. The stratigraphy was described by Budge (1966, p. 67-71).

USNM loc. 19079 was collected from the upper part of the High Lake Member of the Laketown Dolostone.

Fourmile Canyon Section:

The Fourmile Canyon section lies at the head of Fourmile Canyon, east of Mantua, Utah, in the SW¼, NE¼, sec. 31, T. 9 N., R. 1 E. The stratigraphic sequence was described by Budge (1966, p. 83-86).

USNM loc. 19069 was collected low in the High Lake Member of the Laketown.

USNM loc. 19070 was collected near the base of the Portage Canyon Member.

Portage Section:

The Portage Section is located 2 miles west of Portage, Box Elder Co., Utah, on Samaria Mountain, a half mile north of the canyon road at the mouth of the Portage Canyon, T. 14 N., R. 4 W. The section was described by Budge (1966, P. 80-82) and mapped by Beus (1968).

Two sections of the upper part of the Laketown Dolostone were measured and collected. The first lies at the crest of the ridge. This section began at the base of the Portage Canyon Member, which is 200 feet thick.

USNM loc. 19007 199 feet above the base of the Member.
19008 194 feet above the base of the Member.
19009 188 feet above the base of the Member.
19010 from a 48 foot interval beginning 130 feet above the base of the Member.
19006 127 feet above the base of the Member.

The second section lies one-third of the way from the bottom to the ridge crest. It begins in the High Lake Member of the Laketown Dolostone 114 feet below the contact with the Portage Canyon Member. The Portage Canyon Member is 186 feet thick in this section.

Portage Canyon Member of Laketown Dolostone:

USNM loc. 19026 180 feet above base of Member. (20 ft. N. of traverse)
19025 166 feet above base of Member.
19024 161 feet above base of Member.
19023 152 feet above base of Member.
19022 145 feet above base of Member.
19021 134 feet above base of Member.
19020 132 feet above base of Member.
19019 128 feet above base of Member. (20 ft. N. of traverse)
19018 126 feet above base of Member.
19017 124 feet above base of Member.
19015 111 feet above base of Member.
19016 107 feet above base of Member.
19014 105 feet above base of Member. (50 ft. N. of traverse)
19013 100 feet above base of Member.
19012 95 feet above base of Member.

High Lake Member of Laketown Dolomite:

USNM loc. 19027 8 feet below contact with Portage Canyon Member
19028 64 feet below contact with Portage Canyon Member
19029 72 feet below contact with Portage Canyon Member
19030 74 feet below contact with Portage Canyon Member
19031 80 feet below contact with Portage Canyon Member
19032 84 feet below contact with Portage Canyon Member
19033 99 feet below contact with Portage Canyon Member
19034 114 feet below contact with Portage Canyon Member
19035 From the same massive bed which contains USNM loc. 19029-19034 but collected considerably down the ridge from these localities.

Blacksmith Fork Section:

Collections from the Blacksmith Fork section were made on the first ridge west of the junction of the west fork of the river, directly above the road, sec. 3, T. 10 N., R. 2 E., Blacksmith Fork Canyon, southeast of Logan, Utah. The stratigraphic sequence was described by Budge (1966, p. 80-82).

USNM loc. 19036 - from the Decathon Member.

USNM loc. 19037 - collected high in the Portage Canyon Member of the Laketown Dolostone.

USNM loc. 19038 - collected from the upper part of the High Lake Member; the collection was made approximately 300 feet above the road.

Hyrum Canyon Section

Two collections were made from the Laketown Dolostone in Hyrum Can-

yon, Cache Co., Utah, on the north side of the road, near the section line between sections 22 and 23, T. 10 N., R. 2 E., Logan Quadrangle.

USNM loc. 19072 is stratigraphically the lowest locality. It occurs in beds of the High Lake Member.

USNM loc. 19073 is several hundred feet from the preceeding locality, and is in light colored chert in the High Lake Member of the Laketown Dolostone.

LITERATURE CITED

Beus, S.S., 1968. Paleozoic stratigraphy of Samaria Mountain, Idaho-Utah. Amer. Assoc. Petrol. Geol., Bull. 52:782-808.

Budge, D.R., 1966. Stratigraphy of the Laketown Dolostone, north-central Utah: M. Sc. dissertation, Utah St. Univ., Logan, Utah.

Budge, D.R. & Sheehan, P.M., 1980. The Upper Ordovician and Silurian of the eastern Great Basin — Part I, Introduction. Milwaukee Pub. Mus. Contrib. Biol. & Geol.

Cohenour, R.E., 1959. Sheeprock Mountains, Tooele and Juab Counties, Precambrian and Paleozoic stratigraphy, igneous rocks, structure, geomorphology, and economic geology. Utah Geol. Min. Surv. Bull. 63:1-201.

Cook, H., 1966. Geology of the southern part of the Hot Creek Range, Nevada: Ph.D. Thesis, University of California, Berkeley.

Cornwall, H.R. and Kleinhampl, F.J., 1961. Geology of the Bare Mountain Quadrangle, Nevada. U.S. Geol. Surv., Geologic Quad. Map. GQ-157.

Fritz, W.H., 1968. Geologic map and sections of the southern Cherry Creek and northern Egan Ranges, White Pine County, Nevada. Nevada Bur. Mines, Map. 35.

Hope, R., 1972. Geologic map of the Spruce Mountain quadrangle, Elko County, Nevada. U.S. Geol. Surv. Map GQ-942.

Howard, K.A., 1971. Paleozoic metasediments in the northern Ruby Mountains, Nevada. Geol. Soc. Am. Bull. 82:259-264.

Johnson, J.G. and Reso, A., 1964. Probable Ludlovian brachiopods from the Sevy Dolomite of Nevada. Jour. Paleon. 38:74-84.

Keller, A.S., 1963. Structure and stratigraphy behind the Bannock thrust in parts of the Preston and Montpelier quadrangles, Idaho: unpublished Ph.D. thesis, Columbia Univ., 204 p.

Kellog, H.E., 1964. Cenozoic stratigraphy and structure of the southern Egan Range, Nevada. Geol. Soc. Am. Bull. 75:949-968.

Ketner, K.B. and Smith, J.F., 1963. Geology of the Railroad Mining District, Elko County, Nevada. U.S. Geol. Surv. Bull. 1162-B:1-27.

Merriam, C.W., 1963. Paleozoic rocks of Antelope Valley, Eureka and Nye Counties, Nevada. U.S. Geol. Surv. Prof. Pap. 423:1-67.

Merriam, C.W. and McKee, E.H., 1976. The Roberts Mountains Formation, a regional stratigraphic study with emphasis on rugose coral distribution. U.S. Geol. Surv. Prof. Pap. 973:1-77.

Morris, H.T., 1957. General geology of the East Tintic Mountains, Utah, *in* Geology of the East Tintic Mountains and ore deposits of the Tintic mining districts. Utah Geol. Soc. Guidebook. 12:1-56.

Morris, H.T. and Lovering, T.S., 1961. Stratigraphy of the East Tintic Mountains, Utah. U.S. Geol. Surv. Prof. Paper 361:1-145.

Mullens, J.E. and Poole, F.G., 1972. Quartz sand-bearing zone and Early Silurian age of upper part of the Hanson Creek Formation in Eureka County, Nevada. U.S. geol. Surv. Prof. Paper 800-B:21-24.

Nolan, T.B., 1935. The Gold Hill mining district, Utah. U.S. Geol. Surv. Prof. Paper 177:1-172.

Olson, R.H., 1956. Geology of the Promontory Range. Utah Geol. Soc., Guidebk. Geol. Utah, 11:41-75.

Osterwald, F.W., 1955. Thomas Range: U.S. Geol. Survey Rept. TE1-330:104-106.

Reso, A., 1960. The geology of the Pahranagat Range, Lincoln County, Nevada: Ph.D. dissertation, Rice Institute.

Rigby, J.K., 1960. Geology of the Buck Mountain-Bald Mountain area, southern Ruby Mountains White Pine County, Nevada. Intermountain Assoc. Petrol. Geol. 11th Ann. Field conference, Guidebk. to the geology of east central Nevada. 175-180.

Rush, R.W., 1956. Silurian rocks of western Millard County, Utah. Utah Geol. Mineralog. Survey Bull., 53:1-66.

Schaeffer, F.E., 1960. Stratigraphy of the Silver Island Mountains. Utah Geol. Soc., Guidebk. Geol. Utah, 15:15-113.

Sharp, R.P., 1942. Stratigraphy and structure of the southern Ruby Mountains, Nevada. Geol. Soc. Am. Bull. 53:647-690.

Smith, J.F. and Ketner, K.B., 1975. Stratigraphy of Paleozoic rocks in the Carlin-Pinion Range Area, Nevada. U.S. Geol. Surv. Prof. Paper. 867-A:1-87.

Staatz, H.H. and Carr, W.J., 1964. Geology and Mineral deposits of the Thomas and Dugway Ranges, Juab and Tooele Counties, Utah. U.S. Geol. Surv. Prof. Paper 415:1-188.

Staatz, M.H. and Osterwald, F.W., 1959. Geology of the Thomas Range flourspar district, Juab County, Utah. U.S. Geol. Surv. Bull. 1069:1-97.

Thorman, C.H., 1970. Metamorphosed and non-metamorphosed Paleozoic rocks in the Wood Hills and Pequop Mountains, northeast Nevada. Geol. Soc. Amer. Bull. 81:2417-2448.

Wilden, R. and Kistler, R.W., 1967. Ordovician tectonism in the Ruby Mountains, Elko County, Nevada. U.S. Geol. Surv. Prof. Paper 575-D:64-75.

Winterer, E.L. and Murphy, M.A., 1960. Silurian reef complex and associated facies, central Nevada. Jour. Geol. 68:117-139.

Young, J.C., 1955. Geology of the southern Lakeside Mountains, Utah. Utah Geol. Min. Surv. Bull. 56:1-110.

Zimmerman, J.T., 1961. Geology of the Cove Creek area, Millard and Beaver County, Utah. M.Sc. Thesis, Univ. Utah.

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