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CORRELATION OF CENOZOIC DEPOSITS OF NORTHWESTERN COLORADO

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This paper is a cooperative project between the Intermountain Association of Petroleum Geologists and the Wyoming Geological Association, in an attempt to correlate the Cenozoic deposits of northwestern Colorado with surrounding areas. This information is presented as a correlation chart (Fig. 1).

In most studies of Tertiary rock units, the number of dashed lines, question marks, and other noted anomalies of correlation runs high. They often exceed the number of definitely known age determinations. The present effort is no exception.

MECHANICAL FEATURES OF CHART

The columns of the chart are arranged so that they encircle the major area of interest (northwestern Colorado). Similar stratigraphic sequences are shown in the same or contiguous columns. Where part of the section has been removed by erosion, or was never deposited, a vertical-line pattern is used.

STRATIGRAPHIC NOTES

General

In many cases the time correlation of specific units between basins is highly tentative because of the lack of known vertebrate faunas. Absolute time correlation across the chart is not possible at this time and may never be. Constant revisions will be made in the future.

Fort Union Formation

The Fort Union formation is approximately 700 feet thick at the Hiawatha field in northwestern Colorado.

"Wasatch Group"

The Wasatch Group (Paleocene-Eocene) and correlative units are in a state of flux. Essentially, the term "Wasatch" indicates an environment of deposition predominantly fluvial) and what is believed to be, y stratigraphic position, older Tertiary strata. The stratigraphy of "Wasatch type rocks" must be studied

in more detail in limited areas before a consistent regional picture can be worked out.

The writers have departed from previous correlation charts (Jones, et al., 1954) in extending the base of the "Wasatch Group" in the Uinta basin downward to the top of the Upper Cretaceous. This was done primarily because of comparable stratigraphic thicknesses in the central part of the Uinta basin and the Wasatch Plateau area. In the Wasatch Plateau Spieker (1946) has demonstrated that the Cretaceous-Tertiary boundary occurs within the North Horn formation. It also seems possible that this system boundary occurs within the "Wasatch Group" of the central Uinta basin area. Stratigraphic relationships on the eastern edge of the Uinta basin are not clear.

A maximum thickness of 1,750 feet has been given (Nightingale, 1930) for the Cathedral Bluffs tongue along Kinney Rim in northwestern Colorado. The main body of the Wasatch formation is approximately 4500 feet thick at the Hiawatha field.

Green River Formation

The Green River formation of the Rocky Mountains is a complex stratigraphic unit. Fundamentally the formation is the product of fluctuating lacustrine and fluvial environmental conditions (Bradley, 1931, Dane, 1954, and Picard, 1955).

Bradley (1945) measured 1200 feet of Laney shale member in the vicinity of Lookout Mountain, Colorado. In the same area the Tipton Tongue member was approximately 300 feet thick.

Bishop Conglomerate

Scattered remnants of the Bishop conglomerate (Miocene) are present in northwestern Colorado. The exact age of the formation is very much in doubt.

Browns Park Formation

The Browns Park formation (Miocene (?)) is discussed elsewhere in this guidebook.

A R E A S		U T A H		C O L O R A D O		W Y O M I N G		W Y O M I N G AND COLORADO			
		U I N T A	B A S I N	P I C E A N C E C R E E K	N O R T H W E S T E R N	W A S H A K I E	B R I D G E R & U. G R E E N	N O R T H P A R K	L A R A M I E B A S I N		
		C E N T R A L	E A S T E R N E D G E	B A S I N	C O L O R A D O	B A S I N	R I V E R B A S I N	B A S I N	C O O P E R L A K E B A S I N	H A N N A B A S I N	
Q U A T E R N A R Y	R E C E N T		A L L U V I U M	A L L U V I U M	A L L U V I U M	A L L U V I U M	A L L U V I U M	A L L U V I U M	A L L U V I U M		
	P L E I S T O C E N E	U N D I F F E R E N T I A T E D		U N D I F F E R E N T I A T E D		U N D I F F E R E N T I A T E D		U N D I F F E R E N T I A T E D		U N D I F F E R E N T I A T E D	
Y		P L I O C E N E									
	H E M P H I L L I A N										
	C L A R E N D O N I A N										
	A	M I O C E N E									
		B A R S T O V I A N									
		H E M I N G F O R D I A N									
	I	A R I K A R E E A N		B I S H O P C G L.	B I S H O P C G L.	B R O W N S P A R K F M.	B R O W N S P A R K F M.	B I S H O P C G L.	B I S H O P C G L.	B R O W N S P A R K F M.	B R O W N S P A R K F M.
		W H I T N E Y A N									
		O R E L L A N									
		C H A D R O N I A N									
T	E O C E N E		D U C H E S N E R I V E R F M.	D U C H E S N E R I V E R F M.							
	U I N T A N		S S & L S. F A C. S A L I N E F A C I E S	U I N T A F M.							
	B R I D G E R I A N		E V A C U A T I O N & P A R A C H U T E C R E E K M E M. D E L T A F A C I E S	E V A C U A T I O N C R. M E M. P A R A C H U T E C R E E K M E M.	P A R A C H U T E C R E E K M E M.	L A N E Y S H A L E M E M. O F G R E E N R I V E R F M.	B R I D G E R F M. I S A N D M A N H I	W A S H A K I E F M.	T I M B U T T E S M E M. B L A C K F O R K M E M.	U P P E R C O A L M O N T	
	W A S A T C H I A N		B L K. S H F A C I E S	G A R D E N G U L C H M E D O U G L A S C R. M E.	U N N A M E D	C A T H E D R A L B L U F F S T O N G U E	T I P T O N T O N G U E	H I A W A T H A M E M B E R	C A T H E D R A L B L U F F S T O N G U E	H A N N A F M.	
E	P A L E O C E N E		G R E E N R I V E R F M.	G R E E N R I V E R F M.	W A S A T C H F M.	U P P E R M E M.	F O R T U N I O N F O R M A T I O N	F O R T U N I O N F M.	A L M Y F M.	L O W E R C O A L M O N T (?)	
	C L A R K F O R K I A N		G R E E N R I V E R F M.	G R E E N R I V E R F M.	W A S A T C H F M.	L O W E R M E M.	F O R T U N I O N F O R M A T I O N	F O R T U N I O N F M.	A L M Y F M.	L O W E R C O A L M O N T (?)	
	T I F F A N I A N		G R E E N R I V E R F M.	G R E E N R I V E R F M.	W A S A T C H F M.	L O W E R M E M.	F O R T U N I O N F O R M A T I O N	F O R T U N I O N F M.	A L M Y F M.	L O W E R C O A L M O N T (?)	
	T O R R E J O N I A N		G R E E N R I V E R F M.	G R E E N R I V E R F M.	W A S A T C H F M.	L O W E R M E M.	F O R T U N I O N F O R M A T I O N	F O R T U N I O N F M.	A L M Y F M.	L O W E R C O A L M O N T (?)	
	D R A G O N I A N		G R E E N R I V E R F M.	G R E E N R I V E R F M.	W A S A T C H F M.	L O W E R M E M.	F O R T U N I O N F O R M A T I O N	F O R T U N I O N F M.	A L M Y F M.	L O W E R C O A L M O N T (?)	
P U E R C A N		G R E E N R I V E R F M.	G R E E N R I V E R F M.	W A S A T C H F M.	L O W E R M E M.	F O R T U N I O N F O R M A T I O N	F O R T U N I O N F M.	A L M Y F M.	L O W E R C O A L M O N T (?)		
U P P E R C R E T A C E O U S			M E S A V E R D E G R O U P	M E S A V E R D E G R O U P	M E S A V E R D E G R O U P	L A N C E F M.	L A N C E F M.	L A N C E F O R M A T I O N	A D A V I L L E F M.	P I E R R E S H A L E	
			M E S A V E R D E G R O U P	M E S A V E R D E G R O U P	M E S A V E R D E G R O U P	L A N C E F M.	L A N C E F M.	L A N C E F O R M A T I O N	A D A V I L L E F M.	P I E R R E S H A L E	

CORRELATION TABLE OF CENOZOIC FORMATIONS OF NORTHWESTERN COLORADO AND ADJACENT AREAS

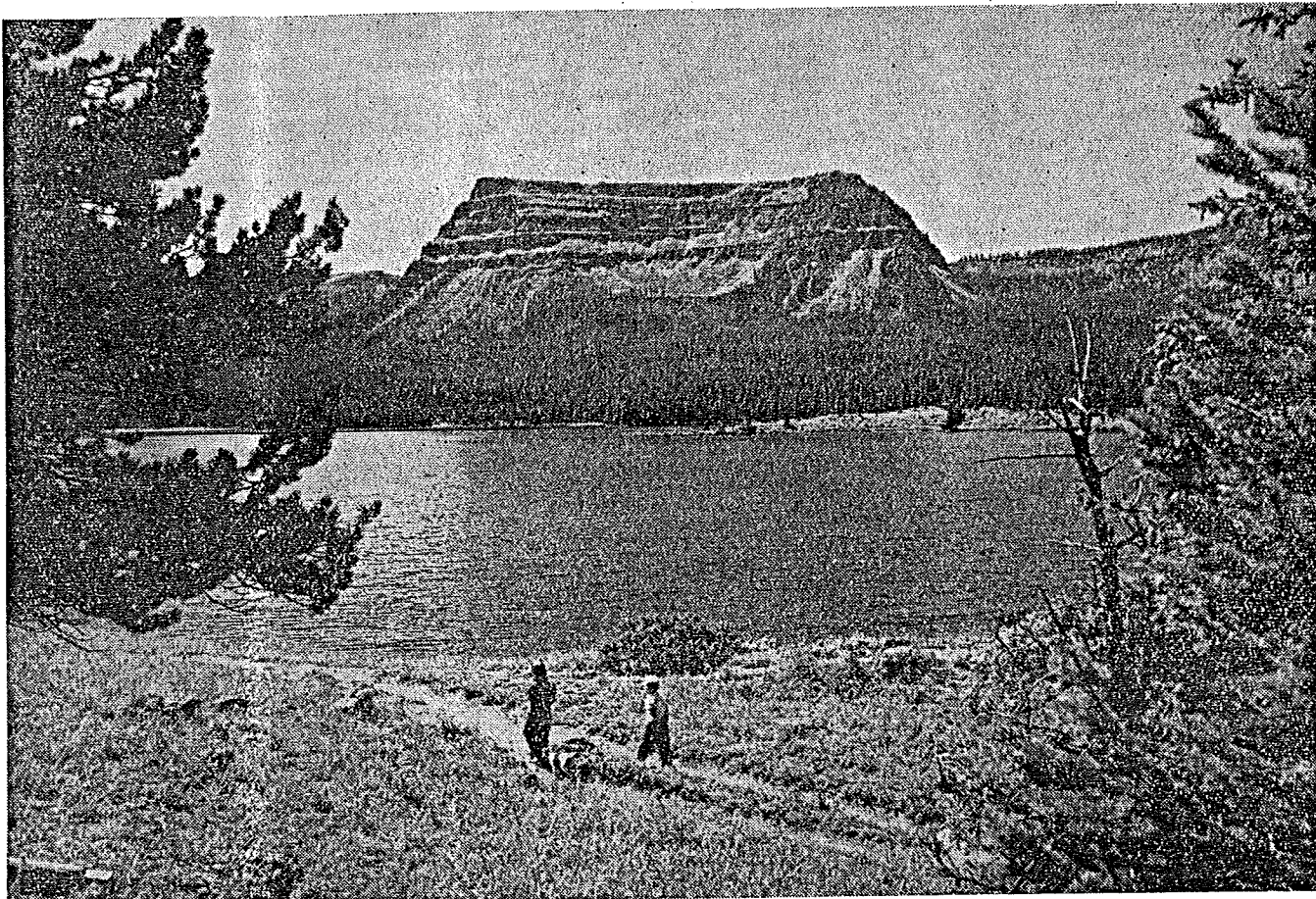
COMPILED BY: M. DANE PICARD AND PAUL O. Mc GREW

APRIL, 1955

FIGURE-1-

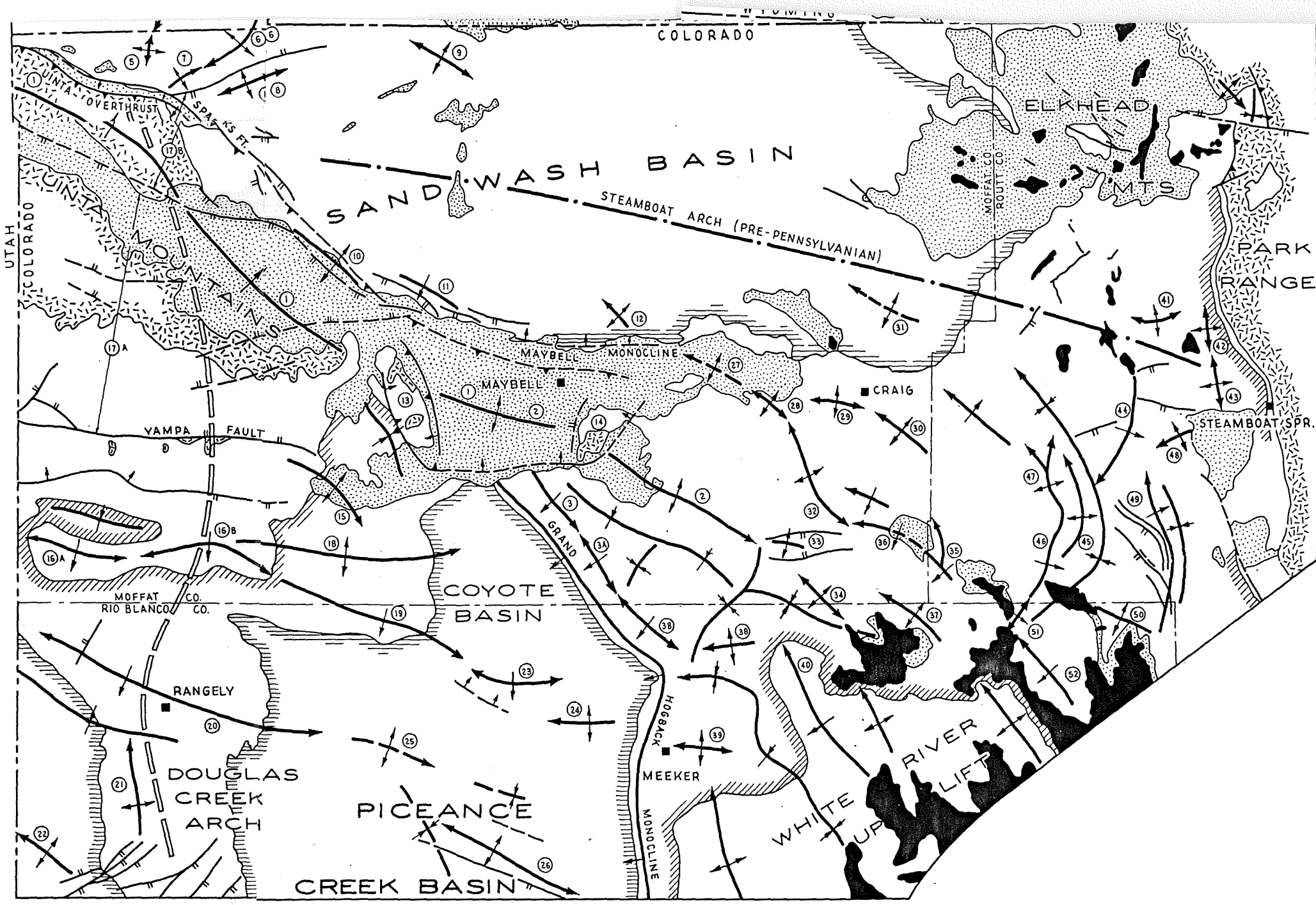
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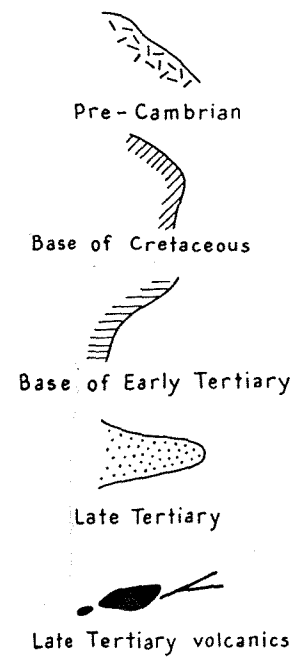


Amphitheatre Mountain and Trappers Lake in the Flat Tops.

Wiggins Studio, Craig



OUTCROP PATTERNS



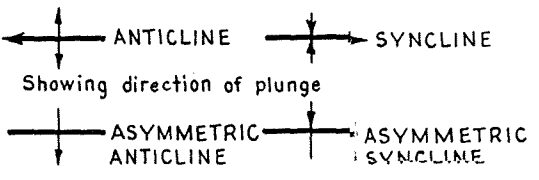
ALPHABETICAL KEY TO STRUCTURAL FEATURES

- (Anticlines and domes unless otherwise noted.)
- | | |
|----------------------------|------------------------|
| Axial Basin 2 | Mud Spring 12 |
| Beaver Creek 36 | Ninemile 38 |
| Bell Rock 28 | North Craig 31 |
| Blue Mountain 16 | North Douglas Creek 22 |
| Breeze 30 | North Trull 42 |
| Canyon Creek 4 | Oak Creek 49 |
| Chimney Creek 41 | Pagoda 35 |
| Coyote Basin 18 | Piceance Creek 26 |
| Craig 29 | Pinyon Ridge 18 |
| Croscho Lake 50 | Poose Creek 52 |
| Cross Mountain Uplift 13 | Powder Wash 9 |
| Curtis 48 | Powell Park 24 |
| Danforth Hills 3 | Rangely 20 |
| Douglas Creek Arch 21 | Sage Creek 47 |
| Dry Mountain 10 | Seely 37 |
| Elk Springs 15 | Shell Creek 8 |
| Fish Creek 45 | Skull Creek 16B |
| Georges Gulch 41 | Sugarloaf 7 |
| Haymower 5 | Thornburg 34 |
| Hiawatha 6 | Tow Creek 44 |
| Iles 33 | Trout Creek 49 |
| Juniper Mountain Uplift 14 | Trull 43 |
| Lay Creek 27 | Two Bar 11 |
| Little Poose Creek 51 | Uinta Arch 1 |
| Massadonna 19 | Uinta Graben 17 |
| Maudlin Gulch 3A | White River 23 |
| Meeker 39 | Williams Park 46 |
| Moffat 32 | Willow Creek 16A |
| Morapos 34 | Wilson Creek 38 |
| | Yellow Creek 25 |
| | Yellowjacket 40 |

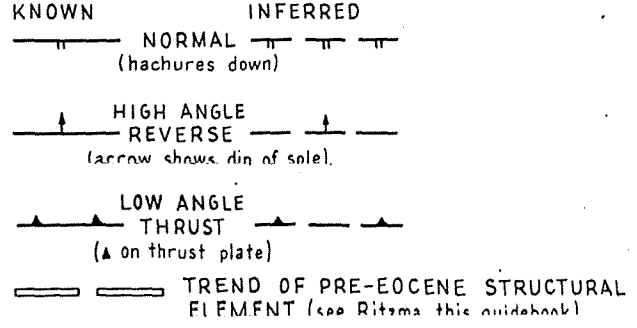
NUMERICAL KEY TO STRUCTURAL FEATURES

- (Anticlines and domes unless otherwise indicated.)
- | | |
|--------------------------------|--------------------------------|
| 1 Uinta Arch | 23 White River |
| 2 Axial Basin | 24 Powell Park |
| 3 Danforth Hills | 25 Yellow Creek |
| A. Maudlin Gulch | 26 Piceance Creek |
| B. Wilson Creek | 27 Lay Creek |
| 4 Canyon Creek | 28 Bell Rock |
| 5 Haymower | 29 Craig |
| 6 Hiawatha | 30 Breeze |
| 7 Sugarloaf | 31 North Craig |
| 8 Shell Creek | 32 Moffat |
| 9 Powder Wash | 33 Iles |
| 10 Dry Mountain | 34 Thornburg (Morapos) |
| 11 Two Bar | 35 Pagoda |
| 12 Mud Spring | 36 Beaver Creek |
| 13 Cross Mountain Uplift | 37 Seely |
| 14 Juniper Mountain Uplift | 38 Ninemile |
| 15 Elk Springs | 39 Meeker |
| 16 Blue Mountain | 40 Yellowjacket |
| A. Willow Creek | 41 Georges Gulch—Chimney Creek |
| B. Skull Creek | 42 North Trull |
| 17 Uinta Graben | 43 Trull |
| A. Main Segment | 44 Tow Creek |
| B. North Segment | 45 Fish Creek |
| 18 Pinyon Ridge (Coyote Basin) | 46 Williams Park |
| | 47 Sage Creek |
| 19 Massadonna | 48 Curtis |
| 20 Rangely | 49 Trout Creek (Oak Creek) |
| 21 Douglas Creek Arch | 50 Croscho Lake |
| 22 North Douglas | 51 Little Poose Creek |

FOLDS



FAULTS



TECTONIC MAP OF NORTHWEST COLORADO

PREPARED BY THE EDITORIAL STAFF
 FROM ALL AVAILABLE PUBLISHED SOURCES FOR
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