Cretaceous rocks of the San Juan Basin area

Paul H. Umbach, 1950, pp. 82-84

in:

This is one of many related papers that were included in the 1950 NMGS Fall Field Conference Guidebook.

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The Graneros shale, 20-150 feet thick, consists of a black, dense, heavy, "poker chip" shale which can be correlated over the entire basin.

The overlying Greenhorn limestone, 50-100 feet thick, is recognized as a very calcareous shale over most of the central and northern portion of the San Juan Basin. The Mancos, with a thickness of 700-2,300 feet, thins and intertongues with the Mesaverde in the southern portion of the San Juan Basin. In the northeastern portion of the basin the Mancos consists of black, dense shale, which grades to a more silty shale in the southwestern portion.

Although the Carlile and Niobrara shale are recognizable in some areas, they are not in common use. Most geologists at the present time prefer to obtain more control to determine the value of these members as correlative markers.

The Mesaverde Group

The Mesaverde group consists of the Point Lookout, Menefee, and Cliff House formations, with the exception of the southern portion of the San Juan Basin, where the group is further subdivided as a result of coal studies made by the U. S. Geological Survey.
The Point Lookout sandstone, 150-200 feet thick, consists of a medium- to fine-grained sandstone which extends over the central and northern portion of the basin. In the southern portion of the basin this sandstone is underlain by tongues of sandstone interbedded with shale and coal which are considered to be in the Mesaverde group.

The Fruitland formation 0-500 feet thick, consists of coal, clay, shale, and sandstone of brackish and fresh water origin.

The Kirtland formation 0-1, 200 feet thick, contains green to gray shale with interbedded sandstone and is divided into an upper and a lower member with a middle sandstone tongue which has been called the Farmington sandstone member.

The McDermott formation, 0-300 feet thick, is composed of brown to purple shale with a small amount of sandstone. This formation has its greatest thickness in the northwestern portion of the basin.

The Ojo Alamo sandstone, 0-200 feet thick, consists mainly of coarse sandstone and pebbles lying unconformably upon the Kirtland series. Although this contact has been reported as being conformable, sufficient evidence has been presented to prove that it is unconformable.

The Animas formation, 0-2,000+ feet thick, of late Cretaceous and Paleocene age, consists predominantly of arkosic sandstone and green to gray micaceous shale.
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