PRE-CARBONIFEROUS STRATIGRAPHY AND STRUCTURE OF THE UINTA BASIN, UTAH AND COLORADO¹

By
MAX D. CRITTENDEN, JR.²

INTRODUCTION

Although no pre-Carboniferous rocks have been penetrated by wells drilled within the Uinta Basin, some inferences regarding these rocks may be drawn from information available from outcrops around the margins of the Basin and from a few deep wells in adjoining areas. Information from these widely scattered sources is so diffuse, however, that one can do little more than speculate about the character and thickness of the pre-Carboniferous rocks beneath the Basin.

Pre-Cambrian Rocks

The basement complex.—Schistose or gneissic rocks, called "the Metamorphic complex" by Blackwelder 1949), underlie all of eastern Utah at depth. They are exposed in the core of the Uinta Mountains, where they were called the Red Creek series by Powell 1876). In the western Uintas, the basement complex is deeply buried by younger pre-Cambrian rocks, but it reappears in the western part of the Wasatch Mountains southeast of Salt Lake City on a projection of the axis of the Uinta arch. Rocks showing a comparable degree of metamorphism also crop out southeast of Santequin (Eardley, 1932), and gneissic rocks from the bottom of a well in the San Rafael Swell have been described by Match (1941). Pre-Cambrian schistose rocks crop out also in the Uncompahgre uplift of eastern Utah and western Colorado (Dane, 1935) (Hinds, 1936).

Younger pre-Cambrian rocks.—Rock units of great thickness and relatively slight metamorphism crop out in the Uinta Mountains, Wasatch Mountains, and in several areas in western Utah (Eardley and Hatch, 1940). In the Wasatch Mountains in the vicinity of Big Cottonwood Can-

¹ Published with permission of the Director of the United States Geological Survey.
² Geologist, United States Geological Survey.