UNIVERSITY OF TEXAS BULLETIN NO. 1852, SEPT. 15,1918: NOTES ON THE GEOLOGY AND OIL POSSIBILITIES OF THE NORTHERN DIABLO PLATEAU IN TEXAS; BURBAU OF ECONOMIC GEOLOGY AND TECHNOLOGY DIVISION OF ECONOMIC GEOLOGY

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649271672

University of Texas Bulletin No. 1852, Sept. 15,1918: Notes on the geology and oil possibilities of the northern diablo plateau in Texas; Burbau of economic geology and technology division of economic geology by J. W. Beede & J. A. Udden

Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

www.triestepublishing.com

J. W. BEEDE & J. A. UDDEN

UNIVERSITY OF TEXAS BULLETIN NO. 1852, SEPT. 15,1918: NOTES ON THE GEOLOGY AND OIL POSSIBILITIES OF THE NORTHERN DIABLO PLATEAU IN TEXAS; BURBAU OF ECONOMIC GEOLOGY AND TECHNOLOGY DIVISION OF ECONOMIC GEOLOGY

Trieste

B200-620-3M-L

University of Texas Bulletin

No. 1852: September 15, 1918

NOTES ON THE GEOLOGY AND OIL POSSIBILITIES OF THE NORTHERN DIABLO PLATEAU IN TEXAS

By

J. W. BEEDE

BUREAU OF ECONOMIC GEOLOGY AND TECHNOLOGY
DIVISION OF ECONOMIC GEOLOGY

J. A. UDDEN
Director of the Bureau and Head of the Division

PUBLISHED BY THE UNIVERSITY SIX TIMES A MONTH, AND ENTERED AS SECOND-CLASS MATTER AT THE POSTOFFICE AT AUSTIN, TEXAS, UNDER THE ACT OF AUGUST 24, 1912

The benefits of education and of useful knowledge, generally diffused through a community, are essential to the preservation of a free government.

Sam Houston

Cultivated mind is the guardian genius of democracy. . . . It is the only dictator that freemen acknowledge and the only security that freemen desire.

Mirabeau B. Lamar

TABLE OF CONTENTS.

LIST OF ILLUSTRATIONS

PLATES

FIGURES

NOTES ON THE GEOLOGY AND OIL POSSIBILITIES OF THE NORTHERN DIABLO PLATEAU IN TEXAS

By J. W. Beede[1]

INTRODUCTION

A brief study was made recently of the northern portion of the Diablo Plateau to determine the likelihood of oil development on the University of Texas lands in Hudspeth County. In order to arrive at a proper understanding of the conditions to be encountered in drilling it was necessary to study the succession of the rocks of the Hueco Mountains, or escarpment, which form the plateau farther east. While this study was too hurried to permit the working out of all the complicated details of the geology of the Hueco escarpment, yet certain data were obtained which are of sufficient geologic and economic interest to warrant their publication. A word of appreciation is here due to the people of the Diablo Plateau and surrounding region, for the hospitality shown us and the unstinted assistance given us in pursuing our work; more especially to Mr. John Helms, Mr. John Molesworth, Mr. Wood, and Mr. Juan Escontrias. Their cooperation was of great value to us in making the hurried examination practicable.

Among the more important facts ascertained were the discovery of a considerable thickness of Mississippian beds, the unconformity at the top of the Magdalena beds, the unconformity within the Permian itself, and higher beds in the east edge of the Plateau.

The Diablo Plateau lies between the Hueco Mountains, or escarpment, on the west, and the Diablo Mountains, or escarpment, on the east. The northeastern limit is usually drawn from the Black Mountains to the Cornudas along a line of elevations formed by igneous intrusions.[2]

Note: Manuscript submitted May 17, 1920. Published Dec. 1920.

[1]Mr. C. E. Bowman assisted in the field work for this report.

[2]R. T. Hill, U. S. Geol. Surv., Geog. Atlas, No. 3, 1899.
Richardson, Geo. B., Univ. Tex. Min. Surv., Reconnaissance in Trans-Pecos Texas north of the Texas and Pacific Railway, 1904.

The present studies were confined to the northern part of this region. Roughly, the area here considered lies north of the latitude of the south side of Black Mountain, extending east from the Diablo Mountains to the edge of the Shakespeare escarpment, then turning northwest to the foot of the Hueco Mountains.

The first comprehensive treatment of the immediate region under consideration was the "Reconnaissance in Trans-Pecos Texas north of the Texas and Pacific Railway", by George B. Richardson[1]. In this report he gives a rather full bibliography up to the date of the publication, so that it only remains to note later work.

In Richardson's report the rocks of the Hueco formation, comprising the main part of the Diablo Plateau, were referred by Girty to the Pennsylvanian system. In his "Guadalupian Fauna", Girty places the Hueco formation at the base of the whole Guadalupian succession.[2] This is correct for all but a small part east and northeast of the Black Mountains. The peculiar collection of fossils referred to on page 26 of his book probably came from this locality.

In 1909, Lee and Girty published a paper on the "Manzano Group of the Rio Grande Valley"[3], in which the Manzano rocks were referred to the Pennsylvanian system, and suggested also that the Magdalena group below the Manzano group belonged to the same system.

Since the publication of his reconnaissance, Richardson has thrown much additional light on the Hueco region through his work in New Mexico in which he found that the Magdalena group and the Manzano group pass southward into the Hueco formation. The Magdalena was traced into the Franklin Mountains and the unconformity at its top was recognized there, but was not recognized in the Hueco escarpment. The Manzano was correlated with the Hueco and he states that "The sections which have been described (in West Texas and southeast New Mexico) can be approximately correlated and together they

[1]Richardson, ibid., Univ. of Tex. Min. Surv., pp. 119, 1904.
[2]Guadalupian Fauna, U. S. Geol. Surv., Prof. Paper 58, p. 11, 1908.
[3]W. T. Lee and Geo. H. Girty, U. S. Geol. Surv., Bull. 389, 1909.

comprise the local complete section of the Upper Carboniferous column. It appears that (a) the Hueco formation embraces both the Magdalena and Manzano groups of the Rio Grande Valley section in New Mexico....."[1] Since the Manzano Series was described prior to the Hueco, the latter term should be dropped.

Up to the present time the whole of the Hueco "formation" has been regarded as Pennsylvanian so far as printed references are concerned, except in two cases. One, a reference in an article entitled "A Comparison of Paleozoic sections in Southern New Mexico", by Darton,[2] contains the two following statements: "The Hueco limestone carries an abundant fauna regarded by Girty as of late Carboniferous age, on account of which at least the upper part of it has been tentatively correlated with the Kaibab limestone of northern Arizona"; "Pennsylvanian and Permian time is represented in the main by deposits of the Magdalena and Manzano groups and the Hueco and Gym limestones". The other reference is in a paper entitled "The Permo-Carboniferous ammonoids of the Glass Mountains of West Texas, and their stratigraphic significance", by Böse,[3] who places them in the basal Permian ("Permo-Carboniferous"), making it correspond to the Wichita and Clear Fork stages of Central Texas.

STRATIGRAPHY

A somewhat more detailed study of the Hueco escarpment reveals a number of additional facts of interest regarding the stratigraphic and faunal succession. As Richardson had already suggested, the Hueco formation contains both the Magdalena and Manzano groups of rocks, and in addition a considerable thickness of the Mississippian.

Mississippian

At the base of the Magdalena group is an unconformity that is not easily recognized. In the southern Huecos, these beds rest

[1] Stratigraphy of the Upper Carboniferous in West Texas and southwestern New Mexico. Amer. Jour. Sci., 4th ser., XXIX, pp. 325-337, 1910. Quotation from p. 337.

[2] U. S. Geol. Surv., Prof. Paper 108, pp. 31-55, (ref. p. 55), 1917.

[3] Emil Böse, Bureau of Economic Geology and Technology, Univ. of Tex. Bull. 1762, chart facing p. 46, 1919.