Memorial to Orby Clinton Wheeler 1898-1970

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Orby Clinton Wheeler, a Fellow of The Geological Society of America since 1952, a member of the American Association of Petroleum Geologists, and a former executive of the International Petroleum Company, died on October 19, 1970, at Coral Gables at the age of 72 of complications following surgery. He is survived by his wife Kate and two sons, Chuck and Joe, both geologists and both holding responsible positions in the petroleum industry. To most of his friends and daily associates, Mr. Wheeler was known simply as “Jimmy.”

Jimmy, with his wife Kate, had recently returned from a Scandinavian tour, including a side visit to Russia, and on his arrival home had appeared to be in excellent health and spirit. Jimmy was born in Gainesville, Texas, on October 30, 1898, where he passed his youth and attended public school. In 1916, he entered the University of Texas, first as a law student, later transferring to geology where he came under the guidance of Professor J. A. Udden, then the recognized dean of Texan geology, and also under the stimulating teaching of Professor F. L. Whitney, best known for his studies on Cretaceous echinoids and for his special mechanical skill.

A memorial to Mr. Wheeler was prepared by Messrs. Knebel and Link for the Association of Petroleum Geologists with many details of Jimmy’s activities which will not be repeated in this review. In this Memorial, we wish to pay our last respects and tributes, not only to a very special friend of many years standing and close association, but also to emphasize his accomplishments as a geologist.

The major achievement in the life of Jimmy as a geologist is his work in Colombia, South America, in the establishment of the Tertiary section in the Middle Magdalena Valley. This work has since served as a basis for geological exploration through a large part of the inner Magdalena trough. On the De Mares concession, it furnished the information for areal mapping, interpretation of the subsurface structural picture, and led directly to the discovery through surface geology of the La Cira oil field, the largest so far known in Colombia. This was the work of a talented young geologist, lately out of college and newly married, who with devotion to his profession and to his company, was willing and able to endure the hardship of jungle exploration.

During the decade starting about 1915, Colombia entered the oil picture as a host of geologists and prospectors arrived in the country to explore the lands where signs of
oil were known to exist. The most spectacular of these surface manifestations was known in a section of the Middle Magdalena Valley over which Don Roberto de Mares in 1905 had secured a 510,000 hectare concession. After an early period of uncertainty, this concession was acquired by the oil-promoting firm of Benedum, Trees and Crawford of Pittsburgh, Pennsylvania, who organized the Tropical Oil Company in 1916; on April 27, 1918, the discovery well (Infantas No. 2) was completed at a depth of 1,531 to 1,500 feet for 800 to 1,000 barrels per day. These early wells were located on a faulted reversal, known as the Infantas Anticline along which there were many active oil seepages and asphalt deposits. In 1920, control of the Tropical Oil Company was acquired by the International Petroleum Company of Canada and active development of the property ensued, under the direction of the senior author as head of the geological and exploration work of the company.

The Magdalena Valley in its lower stretches is geologically a coastal embayment which narrows southward toward El Banco. Its Tertiary rocks are marine. South of El Banco, the valley narrows abruptly and becomes a longitudinal depression or trough between the foothills of the Eastern and Central Mountain systems and its Tertiary sedimentary fill is non-marine. Both Stille and Harrison\(^1\) likened the inner Magdalena depression to that of a graben of the classical Rhine type because of its shape and great length, but it has been found that its structural development is compressional with parallel folds and thrusts directed in a westerly direction. Also along its western border, rather than a faulted margin, its sedimentary formations lie mainly in depositional overlap upon the basement; the main Tertiary development most widely exposed at the surface consists of reddish to mottled-colored clays and grayish silty sands, a monotonous succession relieved only by occasional beds of fossils. In general, surface exposures are poor and found mainly along the banks of small streams. Their interpretation requires patient and discriminating inspection to determine whether they represent true formation in place, slumped soil, or bedded alluvium. The mapping of the surface geology of the De Mares concession was only completed after many years of effort. Jimmy realized early in the course of the work that the fossil zones occurred only at fixed levels and, being traceable from one stream course to the other, held the key to effective areal mapping, subdivision of the section, and structural delineation. These fossiliferous zones, three in number, and their associated beds were given formational names: the lowest, “Los Coros”; the middle, “Mugrosa”; and the highest, “La Cira”. The fossils in each zone were distinctive and recognizable in the field. As they were also encountered in wells, they served to control drilling operations and to outline the subsurface structure thus connecting it with the surface geology. It

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\(^1\)Stille, H., 1907, Geologisch Studien in Gebiet der Rio Magdalena. Koenen Festschr. Stuttgart.

was soon discovered that the Infantas reversal which had been mapped on dips as a simple anticline was actually a thrust and the oil seeps along its crest came from outcropping oil sands, the same as those encountered at depth on the west side of the thrust in the underlying block. The La Cira field, which in a few years became the most prolific pool on the De Mares concession, was discovered by means of this surface mapping. This brief review gives the general story of the development of the De Mares concession as a major petroleum district, discovered entirely on the basis of sound interpretation of surface geology for which Jimmy Wheeler was mainly responsible. A paper dealing with the stratigraphy of the Middle Magdalena Valley by Wheeler was published in the Proceedings of the Academy of Natural Sciences of Philadelphia in 1935. It includes a chapter by Pilsbry and Olsson dealing with the fossils and indicating their general age and biological significance.

Geological studies and mapping along the eastern, more rugged borders of the De Mares concession, principally along a major thrust zone (the Salina fault) had outlined the general features of the rocks underlying the productive Tertiary formations in the central part of the property. To supplement this information, Jimmy unaided conducted a reconnaissance survey along the middle and upper sections of the Sogamoso River which resulted in a complete section and formational differentiation of the rocks older than the La Paz sandstones, particularly that of the marine Cretaceous. This was the first attempt at a critical subdivision of the Cretaceous into its natural stratigraphic units by clear-cut definition which, although not published by Wheeler, nevertheless was applicable to understanding the Cretaceous development throughout the eastern Cordillera of Colombia.2

Jimmy’s geological work in Colombia, although directed primarily towards economic ends, proceeded along sound research lines and, consequently, it has endured and served as the basic framework on which others could build. It remains as an unusual example of how an economic geologist, in the course of routine duties, could contribute so fruitfully to the company he served, and at the same time to science. It will entitle him to a place of honor and distinction amongst the other pioneer geologists and naturalists who came to Colombia to explore its jungle and mountain fastness for the general well-being of man, both economically and culturally.

This Memorial would not be complete without reference to the help and inspiration given to Jimmy by his wife Kate. She went to Colombia as a bride, on Jimmy’s first assignment there. Because of the lack of accommodation in the newly established camp, Kate had to start their married life apart from her husband and live for a considerable time in the rather remote city of Medellin. In due course, they were united in a palm-thatched hut at a place called Infantas on the bank of the Colorado River where they lived for several years and where two of their sons were born.

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BIBLIOGRAPHY OF ORBY CLINTON WHEELER

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