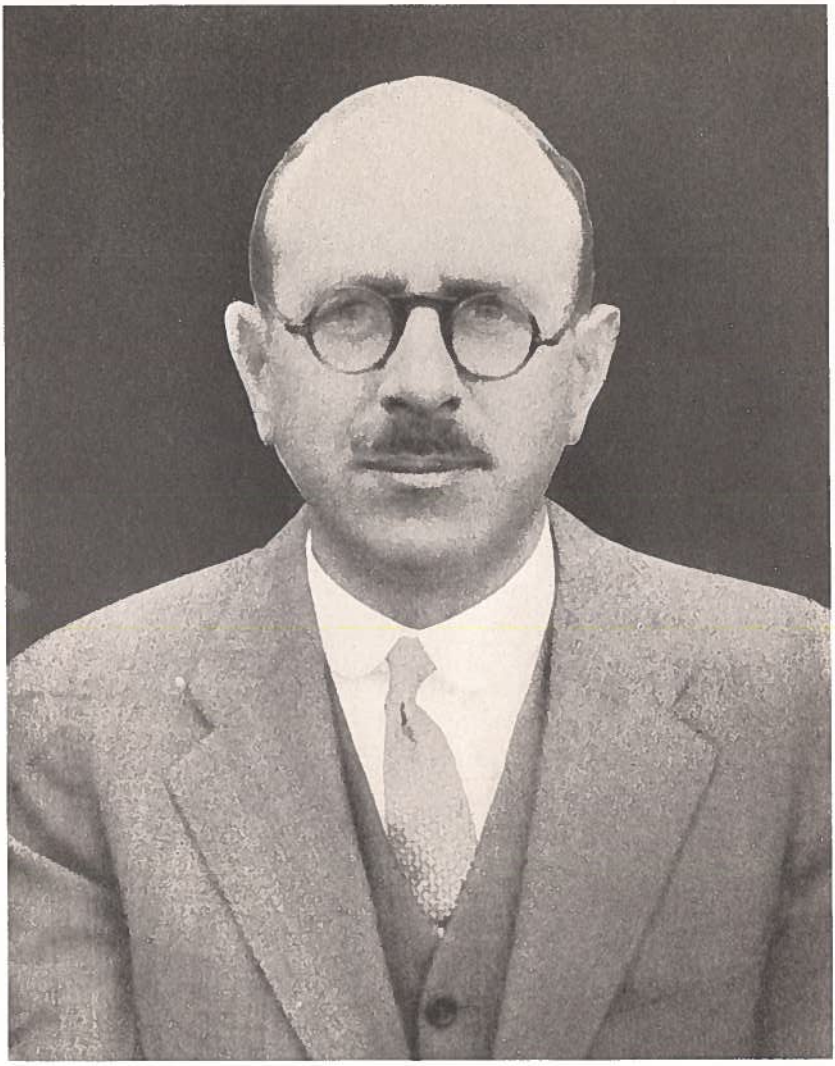

Sidney Powers

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MEMORIAL OF SIDNEY POWERS

BY E. DE GOLYER

Sidney Powers was born in Troy, New York, September 10, 1890, and died in Barnes Memorial Hospital, St. Louis, Missouri, November 5, 1932, following an operation for removal of the gall bladder.

He was one of the leading petroleum geologists, if not the leading petroleum geologist, of his day, yet he was never purely an economic geologist. He was a geologist. He happened to be engaged in economic work, but his interest lay not in the application of his science—not in his science as a tool to achieve economic results—but in the science itself. His standards were scientific rather than commercial, and he devoted himself to his science with the singleness of purpose, with the zeal, and with the austere fervor of a monk of the Middle Ages fulfilling his vows to the church.

Although Powers was a prolific writer, his direct contributions to geological thought, as expressed in his own writings, were probably outweighed by contributions to the literature through papers by others, inspired, solicited, sometimes literally dragged from lazy or reluctant authors by him. It was no unusual thing for him to expend more time and energy in the editing or rewriting of a faulty paper than was spent by its author in the first writing, and if his desire for a paper on a specific subject was great enough, he would even ghost-write it for the recalcitrant author.

His devotion to the science of geology, to the professional and technical organizations which serve it, and to geologists themselves was without stint or limit. Even during the last years of his life, hampered by illness, and realizing with cold scientific precision the tremendous odds against recovery, he spent precious remaining hours in scientific writing, in editorial work, and in administrative work for advancing the well-being of the two organizations nearest his heart—the American Association of Petroleum Geologists and the Geological Society of America.

Powers was of early New England and English stock. The American branch of the family roots, some eight generations back, in one William Power, who was born in England and came out to New England as a child. His maternal grandparents were English born. An only child, Sidney was born to A. W. Powers and Matilda Wheeler Page Powers in the old Powers

home at Troy. Born to gracious, gentle, and charming parents in an old, well-established and successful family, his childhood and early youth were not markedly different from those of other well-born young Americans, except that Powers himself felt that this period of his life had been lived in a certain seclusion and loneliness which had left him timid and shy about meeting people. This timidity and shyness was masked by an outward reserve, so brusque at times as to cause him to be regarded as crusty and unsocial by those who did not know him well, and was a constant cause of regret to him.

He prepared for college at Troy Academy and entered Williams in the fall of 1907. Graduating with his class in 1911, Powers had apparently just found his life interest in geology. He took up graduate work in Boston and received his M.S. degree from the Massachusetts Institute of Technology in 1913 and A.M. and Ph.D. degrees from Harvard in 1915. He was Sheldon Travelling Fellow in 1915 and Research Fellow 1915-16, Harvard University.

His undergraduate studies, from the beginning, seem to have anticipated some form of science as a life work. He elected mathematics during his entire course, neglected the humanistic courses, except such as were required and modern languages, and seems really to have found himself as a student only when he reached his junior year and was able to elect courses in the natural sciences.

By the time he had taken up graduate work, Powers had become, as one of his contemporaries so aptly puts it, "violently interested in geology." Independence of mind, eagerness to learn, and lack of respect for established beliefs and traditions were his marked characteristics as a graduate student, as they were in after-life. Courses were something more than things to be passed, and whether professors were pleased or not did not concern him too much. He took a great and critical interest in geological technique and never hesitated to question professor or fellow student as to the sufficiency of the methods by which they arrived at their declared results. During his last year or two at Harvard, he catalogued the departmental library. He did much reading and abstracting during this period and continually furnished notes and references to his colleagues. This early interest in the work of fellow geologists, willingness to furnish unsolicited help, and a remarkable knowledge of the problems in which they were interested was a characteristic which continued in an increasing degree throughout his entire life. Then, as later, he could be critical to the point of harshness when a question of science was involved, but his criticisms were entirely impersonal, and he accepted criticism of his own

work with the same impersonal dispassionate detachment with which he gave it.

Powers' field work began with his interest in geology. While he was yet an undergraduate, he made a field study of the peat bogs of the northern Berkshires. The summer of 1912 was spent with the Harvard Summer School of Geology in Montana and the West. The summers of 1913 and 1914 were spent in Nova Scotia in the study of the Acadian Triassic for his doctor's thesis, and in Massachusetts and Rhode Island. In 1915, having won the fellowship supported by the Frederick Sheldon Fund at Harvard, the income of which is used for the "further education of students of promise and standing in the University, by providing them with facilities for foreign education by travel after graduation," he traveled to Hawaii and Japan.

One of the enigmas of Powers' professional career, and the subject of frequent speculation by his friends, is why he should have become an economic geologist. He loved the science of geology for itself. His standards were strictly scientific. He was conscientiously, but only mildly, interested in the application of the science to economic ends.

It may be that chance and the opportunity to gain a livelihood controlled his choice of petroleum geology as a field for work upon completing his graduate work. He passed the civil service examination for assistant geologist in the United States Geological Survey in 1914, took his doctor's degree in 1915, spent 1915 and the early part of 1916 in fellowships, and was employed by E. G. Woodruff, then chief geologist for The Texas Company, as geologist for that company in the summer of 1916. For The Texas Company, he studied the interior salt domes of Texas, examined the coastal plain of Honduras, and studied the oil possibilities of southern Oklahoma.

He was married on September 10, 1917 and a week later accepted an appointment as assistant geologist in the United States Geological Survey, having just been offered appointments by both the Illinois and the Federal Surveys. A few days later he received a commission as second lieutenant in the Engineer Officers Reserve Corps.

His military service was deferred, at the request of the Survey, in order that his professional talents and experience might be utilized in the study of prospective oil regions, oil being then a badly needed war material of prime importance. On this assignment he mapped the structure of part of the Osage Nation, studied the Preston anticline and adjoining areas in southern Oklahoma and northern Texas, and studied again the interior salt domes of Texas. In May 1918, he commenced a study of the oil and gas possibilities of the Fort Sill military reservation. While on this assign-

ment, he was requested by the commanding officer at Fort Sill to report on the water supply for the camp and for the city of Lawton, Oklahoma.

He resigned from the United States Geological Survey and reported for active military service, June 11, 1918, at Fort Sill, Oklahoma. He suffered an operation for mastoiditis and was in the hospital until August 1st. He then attended the Engineer Officers' training schools, Camp Lee and Camp A. A. Humphreys, Virginia, until October 1st, was transferred to the 6th Training Regiment, and sailed for France, October 26, 1918, as casual officer for geological duty. Landing in Liverpool, November 8th, he proceeded to general headquarters at Chaumont, France. The war being over, he returned to Philadelphia, February 21, 1919, and was discharged from active service February 23, 1919.

Chance may have made Powers a petroleum geologist. He continued to be one by choice. Upon his return to civil life he called on the writer, who engaged him to take charge of geological work for the enterprise which, a few months later, was organized as the Amerada Petroleum Corporation. He was the first man employed by that corporation, becoming its chief geologist. He was something too much of an individualist to fit easily into a new and raw organization, but the high respect for his abilities and capacities held by his co-workers in the corporation soon brought about satisfactory adjustments—rather more of the organization to him than mutual—and so commenced his work in a position which he continued to fill with increasing success throughout the remainder of his life.

In his professional work he demonstrated surprising capacities as an organizer. His employees were devoted to him, and his department operated so efficiently that in later years he was largely free from annoying administrative details and was consequently able to look ahead, to occupy himself with the constructive thinking necessary to successful work in his position, and to go far afield in order to stimulate and to check his thinking. Much of the success of the corporation was due to his work. Good geology is essential to successful oil production. This he gave to his corporation. Questioning and critical, he probably contributed as much in keeping his associates out of bad or weak prospects as he did in getting them into good plays.

His outstanding contribution to the progress of geological thought was his early recognition of the importance of unconformities in petroleum geology and his bringing into proper perspective in the science the functional importance of buried hills as structure-building agencies, particularly in the Mid-Continent region. Another substantial contribution to the science was his study of the age of folding and inter-relationships of

the Ouachita, the Arbuckle, and the Wichita mountains of Oklahoma, and the Llano-Burnet and the Marathon uplifts of Texas.

His outstanding technical contributions as a petroleum geologist were his recognition of the petroleum possibilities of the Crinerville anticline, Carter County, Oklahoma, after it had been passed by many competent petroleum geologists, and his contributions to the improvement of the reflection (seismic) geophysical method as a prospecting tool.

His early attitude toward geophysics, once his initial curiosity had been satisfied, was somewhat hostile. He apparently feared, deep in his heart, that it would displace geologists in petroleum work, and he could be friendly to nothing which would displace geology in even a slight degree. Furthermore, some of the geophysicists with whom he worked presented part of their results with a sureness which he could not accept and which time and the drill have since refused to substantiate. Once he got the picture, however, of geophysics as it is—a geological tool—and of the physical measurements of the geophysicist as data to be rationalized and interpreted by the geologist, he became intensely interested, and by his constructive criticism, strict separation of fact and theory, and sound common sense, he did much to reduce petroleum geophysics to a tool of sound practical value. One of his last pieces of work was an excellent re-interpretation, in terms of greatest geologic probability, of an excellent geophysical survey of what is now the Lucien Pool, Oklahoma.

He was an avid student of geology to the very end. He followed the literature closely; that having to do with petroleum geology, as completely as his facilities would allow. The breadth of his reading is clearly shown by the great number of reviews listed in the latter part of his bibliography.

He maintained, through correspondence and personal visits, innumerable contacts with geologists, and particularly with petroleum geologists. He was a good correspondent, and in addition to more formal and carefully written letters, sent off a continual stream of hastily scribbled postal cards. He wrote from the train, from the station, from the hotel, and from the camp.

He was the most inquisitive of men. Meeting an old friend or even a chance acquaintance would result in a series of questions so frank and direct as often to embarrass the one being questioned, but the result was always that Powers got the information.

He organized his own time so as not to waste a moment. If he arrived in a town which he had not visited for some time, he would have a memorandum of people to be seen and information to be obtained. He would see the geologists, find old school friends, perhaps inquire into some financial security for the sake of one of his beloved scientific societies, see a politician

on behalf of the state survey, ask someone to write a paper which should be written. At home he would forego social pleasures or any form of relaxation that was time-consuming in order to devote the time to his writing, editing, and correspondence. Vacations were simply opportunities for geological field excursions into areas which lay outside of his regular professional work.

He ran, single-handed, an informal employment bureau for geologists. This became so well known that men sought him when they needed jobs; chief geologists consulted him when they needed men.

Powers was a political administrator—a natural politician, if you please—of great skill and of the very highest type, but always for the advancement of geology. He was impatient of compromise for expediency; a rather solitary worker who could, and did, succeed without organization because he mastered every detail bearing on his political problem, because he was an indefatigable worker, because of the high respect for his opinions and his motives held by his colleagues, young and old, and because his objectives were precisely and scientifically absolutely right. He cared nothing for the honor and the glory of official position; he cared everything for the opportunity and power it gave him to serve his beloved science.

He was a member of the American Institute of Mining and Metallurgical Engineers (1917), Society of Economic Geologists (1921), and Institute of Petroleum Technologists (London, 1925), but never very active in them. He was a member of the American Association of Petroleum Geologists (1917), its president in 1930, and, as past president, a member of its executive committee in 1931. He served it as an officer and as a private member with greater zeal than any other man. He wrote personals, reviews, solicited papers, edited them, investigated and directed the investment of its financial resources—there was no service too great or too small for him to perform. Much of the success which has marked the activities of this association were due to his personal labor. He was a keen and active Fellow of the Geological Society of America (1920) and a member of its Council at the time of his death. He was an active member of the Tulsa Geological Society (1920).

He attended the sessions of the Twelfth International Geological Congress at Ottawa, Canada, in 1913, as a student, and was a delegate of the American Association of Petroleum Geologists, the Society of Economic Geologists, the Tulsa Geological Society, and Williams College to the Fourteenth International Geological Congress in Madrid, Spain. He was, at the time of his death, a member of the organizing committee for the Sixteenth International Geological Congress which met in Washington in July, 1933.

Intensely interested in research, he was a member of the Division of Geology and Geography of the National Research Council.

Powers promoted the compilation and publication of the 1:500,000 scale geological map of Oklahoma which, published in 1926, was the first of the new series of state geological maps being published by the United States Geological Survey. He was the prime mover in securing confidential geological maps from the oil companies for inclusion in the compilation, lent much assistance in correlation of the different work and in its compilation, and, a hoped for appropriation from the State of Oklahoma having failed, personally solicited and collected some $3,396.25 as a necessary expense of the work.

After Walton, then governor of Oklahoma, had destroyed the State Survey by vetoing its appropriation, Powers succeeded in securing from him $2,500.00 for the publication of maps of portions of McCurtain, Choctaw, Pushmataha, and Le Flore counties (the Ouachita Mountain area) and personally assumed charge of contracts for the engraving and printing. He also wrote the draft of an appropriation bill for the Oklahoma Geological Survey in January, 1924, and, with the aid of other Oklahoma geologists, secured its passage by the legislature and approval by the new governor, Trapp.

Powers' later life was so singly and so whole-heartedly devoted to geology that it is hard to realize that his youth had had others interests. During the summer of 1910, he attended the Yale School of Forestry and a short time later imported some 10,000 white pine seedlings which he planted on his father's farm near Brandon, Vermont, where he also raised many thousand trees from seed. Whatever he did, he did intensely. During his graduate years he became deeply interested in dancing and achieved such proficiency that, with a professional partner, he gave an exhibition dance at the opening of the Copley-Plaza in Boston.

Geology was his avocation as well as his vocation during his maturer life, and he had no outside interests, beyond his family life, which did not touch on it except for a slight but developing interest in the early exploration of the Pacific.

He was married, September 10, 1917, to Dorothy Edwards, a New England girl of environment, education, and traditions similar to his own, and to her loving care and quiet sympathy with his tremendous interest in his science is due much of his achievement. He is survived by his devoted widow and by his daughters, Deborah and Elinor.

Geology suffered a great loss in the death of Sidney Powers at his prime. His broad knowledge of petroleum geology and his mature experience with, and understanding of, its problems had peculiarly fitted him for a critical

and constructive review of its entire substance and technique. He had begun to think in this direction as a result of his editing of volumes one and two of "Typical Oil Field Structures," and of the great amount of work which he did on the volume which was to have been volume three of the same series, but which is now to be published as a memorial to him as "Some Problems of Petroleum Geology." He had even taken steps in this direction, as is evidenced by his American Institute of Mining and Metallurgical Engineers paper on "Occurrence of Petroleum in North America" and by the draft manuscript of a much broader work on essentially the same subject, which was left unpublished at the time of his death.

He was a geologist, well trained and experienced. A clear and original thinker, he was prolific of ideas and untiring in their execution. An able organizer, he could inspire devotion and service in others. With little respect for tradition and authority, he was honest mentally, gave too much credit to others, and took too little for himself. Modest and retiring, he spent much of his life in helping others. All his powers and talents were pointed to a single objective—the advancement of the science of geology. His place will not be filled.

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