

NATIONAL ACADEMY OF SCIENCES

JAMES PERRIN SMITH

1864—1931

---

*A Biographical Memoir by*  
ELIOT BLACKWELDER

*Any opinions expressed in this memoir are those of the author(s)  
and do not necessarily reflect the views of the  
National Academy of Sciences.*

*Biographical Memoir*

COPYRIGHT 1965  
NATIONAL ACADEMY OF SCIENCES  
WASHINGTON D.C.



*Jas. Perren Smith*

# JAMES PERRIN SMITH

*November 27, 1864—January 1, 1931*

BY ELIOT BLACKWELDER

JAMES PERRIN SMITH, for many years professor of geology and paleontology at Stanford University in California, is best known for his study of the Mesozoic rock formations of the western United States and their contained fossil faunas, especially the ammonites.

One of his ancestors, Dr. T. M. Forster, a surgeon in the British Navy, came over from England in 1745 and settled in Virginia. His paternal grandfather moved from Virginia to South Carolina some time before the Revolutionary War. Smith's parents and grandparents were middle-class planters, well educated and particularly interested in religion and the classics. Indeed both his maternal grandfather and his father, the Reverend James Francis Smith, served from time to time as traveling preachers (circuit riders)—a common practice in those unspecialized days.

Born during the Civil War (November 27, 1864) in a rural district near Cokesburg, South Carolina, Smith spent an early childhood that was clouded to some extent by the hardships and poverty of the postwar Reconstruction period. His early education was obtained largely at home under the tutelage of his parents and his older brother Charles, who was later to become a noted professor of the classics at the University of Wisconsin. Evidently Perrin owed a lifelong interest in the

literature of ancient Greece and Rome largely to his brother's influence. He read the works of Homer and Sophocles, as well as much of Herodotus. He also enjoyed the works of Chaucer, and Mark Twain was his favorite American author.

In one of his letters soon after the death of his mother in 1905 he spoke with great appreciation of her, saying, "She was the making of me, and I can never be sufficiently grateful for her influence and inspiration." She was born in Charleston, South Carolina, and derived from her parents a special interest in history and English literature.

In the early 1870s the family moved to the town of Spartanburg, in South Carolina, in order to obtain the advantages of study at Wofford College, from which Perrin received the A.B. degree in 1884.

Thence he went to Vanderbilt University where he studied from 1884 to 1887, achieving the degree of Master of Arts. He then served for two years as teacher of mathematics and science in a high school at Nashville, Tennessee.

Up to that point his education had been chiefly classical, and there is little to indicate that he became much interested in science at that stage, though he is said to have acquired an interest in geology from reading Hugh Miller's book *How to Know the Rocks*. It is a fact of possible significance that his mother's brother, who was a physician, was also something of an amateur naturalist.

During the eighties he apparently acquired considerable knowledge of chemistry and some geology and mineralogy, which qualified him for his appointment as assistant chemist and geologist on the recently organized Arkansas Geological Survey. At Little Rock he came under the influence of the vigorous young director of that survey, John Casper Branner. In time, Smith's admiration for Dr. Branner made their relations at Stanford very satisfactory, as revealed in the tribute

which Smith published after Branner's death in 1922. He continued to do some field work in Arkansas during summer vacations of 1892-1900 and thereby amassed a goodly collection of fossils, mostly Carboniferous, which formed the basis of more than one of his important papers.

Probably on the advice of Branner and with the encouragement and help of his brother and his parents, he spent the years 1890 to 1892 in Germany studying chiefly at Goettingen and also at Munich. There, under the influence of Von Koenen, he became deeply interested in Mesozoic paleontology, especially the ammonoids. His interest in these forms seems to have been derived largely from his field work on the Triassic strata in southern Bavaria, under the guidance of Von Koenen. He also made frequent trips to Munich to confer with Von Zittel, with whom he corresponded for many years afterwards.

Having taken the Ph.D. degree at Goettingen (*magna cum laude*) in 1892, he had the good fortune to have his dissertation published by the Prussian Geological Survey. On thus terminating his studies in Germany, he returned to the United States, where he had already been chosen Assistant Professor of Paleontology and Mineralogy in the newly established Stanford University in California. Although he had the alternative of joining the faculty of one of the minor eastern colleges, he seems to have been attracted to Stanford by the better prospect of a life of scholarly research as well as teaching. Also, it was already known to him that California afforded an attractive field for the study of Triassic ammonites. At the same time he could not foresee that in its first decade the university was destined to be afflicted with acute poverty brought on by a law suit which tied up its endowment for several years.

In August 1896 he married Miss Frances Norris Rand of

Wisconsin. They established their home in the new village of Palo Alto and eventually reared a family of three sons (Forster, Howard, and Charles) and one daughter (Mary). His wife was an accomplished artist and helped him prepare drawings for some of his later publications.

Until middle age he enjoyed the excellent health and vigor which made his arduous field work a pleasure. In one of his letters he mentions having carried a fossil *Nautilus* weighing more than fifty pounds up over a mountain ridge. Thereafter, a serious illness, involving surgery, left him with somewhat impaired health and strength. He died of pneumonia on January 1, 1931, only a few months after retiring from active duty as professor.

At Stanford until 1905 he taught mineralogy and petrography as well as paleontology and stratigraphy; but thereafter he concentrated his attention almost entirely on the two latter subjects.

As time went on his interest was centered on the Triassic ammonites and especially their phylogeny, ontogeny, migrations, and ecology. Along with these studies he was necessarily concerned with Triassic stratigraphy and paleogeography. Problems of correlation between the western United States and Europe also occupied much of his attention.

Early in his career Alpheus Hyatt of Harvard became interested in Smith, who visited him in 1900. They planned a monograph on the Triassic Cephalopod Genera of America, but Hyatt died before the work went much beyond the planning stage. However, Smith completed it and generously designated the authors as "Hyatt and Smith." He later prepared three extensive reports in the same general field, and these were published by the U.S. Geological Survey, one of them posthumously.

Each of these monographs was devoted to one of the main

divisions of the Triassic period. In them were described and figured every known species of ammonite from North America. The author prepared a correlation table of Triassic stratigraphic units for the entire world and also a classification of Triassic ammonites based on their apparent evolution. Smith also found time to write the chapter on Cephalopods for the newer edition of Zittel's well-known textbook. One of his last important publications, issued in Holland in 1925, was on the Permian ammonites of Timor. By that time, Smith was recognized, along with his friend Carl Diener, of Vienna, as one of the world's leading authorities on the history and distribution of the ammonites.

Although much of his time and effort was necessarily devoted to describing species and genera, and to working out the stratigraphic succession of the Mesozoic formations, he was especially interested in the conditions, events, and changes which the facts revealed. He wrote several papers on the larval stages and development of individual ammonite species and also on the evolution of certain genera and larger groups of these animals. One of his papers dealt with the Biogenetic Law as illustrated by some of these studies. In other publications he interpreted the geographic changes during the Triassic and other periods, the climatic variations indicated by the faunas, and the periodic migrations of animals, especially in the Pacific area. Smith also gave a good deal of attention to the current problem of the boundary between the Paleozoic and the Mesozoic eras.

Although well qualified in petrology, which he had studied under Liebisch while in Germany, it was only in his early years at Stanford that he published any noteworthy papers in that field. In one of these he described the metamorphic rocks of Shasta County, California, while in a later paper he discussed the glaucophane schists of California.

In addition to his more formal works Smith published many abstracts of papers presented before scientific meetings, and he contributed much to the development of ideas in his field by writing numerous reviews of the current papers published by others.

Nearly all his life Smith was an active field geologist. His favorite locality was in Shasta County, California, where the Triassic rocks are well exposed and where he found good hunting for ammonites. Not least among the attractions of the area was the good trout fishing. He had already acquired valuable experience in field work while on the Arkansas Geological Survey and in southern Bavaria while he was studying in Germany. In his search for ammonites he also explored the Star Peak area in northern Nevada, parts of southeastern Idaho, and the Inyo Range of southeastern California. Additional trips were made to Calgary and Glacier National Park in 1914.

Most of the specimens (especially types) resulting from his trips are now in the possession of the U.S. Geological Survey, although many of the duplicates remained at Stanford University.

At no time in his life did Smith have adequate support for his research work, either in field or in laboratory. This probably explains the fact that he made so few trips to the eastern United States or foreign countries.

During his summer vacations (1895-1924) he was a temporary geologist with the U.S. Geological Survey, and he also received some help from the Southern Pacific Railroad.

Even before he went to Stanford, Smith became interested in Recent and Tertiary shells, which had obvious relationships with the older fossil forms that were his main concern. In a letter to his brother, early in 1892, he expressed the hope that he might some day be able to collect modern

shells, especially in the tropics. In the same year he established a collection of these shells at Stanford. By 1915 the collection had grown so large that he obtained the appointment of a regular curator (Mrs. T. S. Oldroyd, whose own extensive collection had been purchased by the university at Smith's request). Over the years, many of his students made large and small additions to this wealth of material from various parts of the world.

In connection with his course on the geology of California, Smith and some of his students, in 1914-1915, compiled the first comprehensive geologic map of the state. A year later this was published, with an explanatory bulletin on the geology of the state, by the California State Mining Bureau.

Only occasionally did Smith publish anything of general popular interest, such as his two papers in the *Popular Science Monthly*—one of them on the past climates of the West Coast and the other on "Ancient Portals of the Earth." The latter gave his interpretation of the geographic changes indicated by his studies of the distribution of fossil animals.

Being too far from most of the centers of research in his field to attend meetings or conferences with fellow workers, he maintained extensive correspondence with many of those in the eastern United States and Europe.

As a teacher, Smith was at his best in the laboratory, the field, and the seminar room rather than in the lecture hall. His own deep interest in his subject was contagious among his students, many of whom carried on similar studies after leaving the campus. One of his outstanding traits was a genuine interest in his students, their problems and personal affairs. He made himself readily available to them in his office and also in what came to be known as the "curbstone seminar." As smoking was forbidden in the Geology building—a precaution against fire—it was a long-continued custom for Smith and a

group of his students to gather on the street in front of the building for a half hour at some convenient time during the day, for a quiet smoke and for general conversation. In keeping with his habitual frugality, he rolled his own cigarettes. At such times, always provided with a wealth of stories, mostly about his early experiences in the field and in Europe, "J. P." was the center of attraction of the group.

Like many another scientist devoted to his own research Smith was not well adapted to the administrative duties which fell to his lot while he was head of the geology department from 1919 to 1922. Doubtless he was glad to be relieved of such distractions from the studies in which he was habitually engrossed.

Considering his experiences in the South after the Civil War, it is hardly surprising that Smith was a lifelong Democrat. Though never offensively partisan in political matters, he found himself in a very embarrassing quandary when one of his favorite old students became a candidate for election as President of the United States in 1928. It is said that on that election day, being unwilling to vote against his old friend, and yet being unable to bring himself to vote the Republican ticket under any circumstances, he did not go to the polls at all.

In his later years, his many devoted students and other friends showed their appreciation of what he had done for them by arranging a dinner in his honor, at the time he relinquished his position as head of the geology department in order to devote his time to research rather than administration. On that occasion they presented him with a fund of about \$10,000 as a token of their esteem.

In his work as a professor at Stanford he shared his duties with Dr. Branner until 1905, offering courses in historical geology, mineralogy, crystallography, petrography, and paleontology. In those earlier years a large proportion of his students were preparing themselves for careers in mining and there-

fore required courses in physical geology. After 1905 additions to the faculty of the department made it possible for Smith to concentrate his attention on courses in paleontology, historical geology, and the geology of California. He also offered a course in conchology which was of interest to students in the Department of Zoology, as well as to paleontologists. On a trip to Yosemite in 1909 he gave a few out-of-doors lectures on the geology of the Sierra Nevada.

In his last few years of active duty he was ably assisted in the courses in paleontology by Hubert G. Schenck and Siemon W. Muller. In due time, the latter became his successor in the professorship.

Perhaps because he could not afford long journeys to attend meetings, Smith did not seek membership in many of the scientific societies of his day. While still in Germany he was elected a member of the Deutsche Geologische Gesellschaft; but he never became a member of the Geological Society of America. He was a charter member of the Le Conte Geological Club, a member of the Paleontological Society, and a fellow of the California Academy of Sciences. In 1922 he was elected a member of the American Philosophical Society, to whose proceedings he had contributed a paper as early as 1896, having been introduced by Dr. John C. Branner. His election to the National Academy of Sciences in 1925 came as a surprise to him and he modestly deprecated the honor as undeserved. In 1928 the Academy awarded him the Mary Clark Thompson gold medal for his distinguished work on fossil ammonites. As early as 1916, Wofford College conferred on him the degree of LL.D.

As a man and a friend, J. P. Smith was described by one of his old colleagues, Solon Shedd, as being "one of the most kind and lovable men it has ever been my privilege to know. He was uniformly courteous, exceedingly modest and unassuming, and possessed the highest sense of honor."

## BIBLIOGRAPHY

*KEY TO ABBREVIATIONS*

Am. Geol. = American Geologist

Am. J. Sci. = American Journal of Science

Bull. Calif. State Mining Bur. = Bulletin of the California State Mining Bureau

Bull. Geol. Soc. Am. = Bulletin of the Geological Society of America

Geol. Zentr. = Geologische Zentralblatt

J. Geol. = Journal of Geology

J. Morphol. = Journal of Morphology

Pop. Sci. Monthly = Popular Science Monthly

Proc. Am. Phil. Soc. = Proceedings of the American Philosophical Society

Proc. Calif. Acad. Sci. = Proceedings of the California Academy of Sciences

Stanford Univ. Publ. = Stanford University Publication

U.S. Geol. Surv., Monogr. = United States Geological Survey, Monograph

U.S. Geol. Surv., Profess. Papers = United States Geological Survey, Professional Papers

Zentr. Mineral. Geol. Paleontol. = Zentralblatt fuer Mineralogie, Geologie, und Paleontologie

1894

The Arkansas coal measures in their relation to the Pacific Carboniferous Province. J. Geol., 2:187.

The metamorphic series of Shasta County, California. J. Geol., 2:588.

Age of the auriferous slates of the Sierra Nevada. Bull. Geol. Soc. Am., 5:243. Abstract, Am. Geol., 13:215.

1895

Mesozoic changes in the faunal geography of California. J. Geol., 3:369.

Geologic study of migration of marine invertebrates. *J. Geol.*, 3:481.

Supplementary notes on the metamorphic series of the Shasta Region of California. *Am. Geol.*, 16:249; *Science*, n.s., 2:401; *Am. J. Sci.* 50(3):346.

1896

Marine fossils from the coal measures of Arkansas. *Proc. Am. Phil. Soc.*, 35:213. Abstract, *J. Geol.*, 2:187, 1894.

Classification of marine Triassic. *J. Geol.*, 4:385.

1897

Comparative study of paleontology and phylogeny. *J. Geol.*, 5:507, il.

The development of *Glyphioceras* and the phylogeny of the *Glyphioceratidae*. *Proc. Calif. Acad. Sci.*, 3d ser., 1:105-28.

1898

Geographic relations of the Trias of California. *J. Geol.*, 6:776-86.

The development of *Lytoceras* and *Phylloceras*. *Proc. Calif. Acad. Sci.*, 3d ser., 1:129-60.

1899

Larval stages of *Schloenbachia*. *J. Morphol.*, 16:1-32.

1900

The biogenetic law from the standpoint of paleontology. *J. Geol.*, 8:413-25.

Principles of paleontologic correlation. *J. Geol.*, 8:673-97.

The development and phylogeny of *Placentoceras*. *Proc. Calif. Acad. Sci.*, 3d ser., 1:181-240, il.

1901

With S. Weller. *Prodromites*, a new ammonite genus from the

lower Carboniferous. *J. Geol.*, 9:255-66.

The border line between Paleozoic and Mesozoic in western America. *J. Geol.*, 9:512-21.

1902

Ueber Pelecypoden-Zonen in der Trias Nord-Amerikas. *Zentr. Mineral. Geol. Paleontol.*, pp. 689-95.

1903

The Carboniferous ammonoids of America. *U.S. Geol. Surv., Monogr.*, 42:1-211.

1904

Periodic migrations between the Asiatic and the American coasts of the Pacific Ocean. *Am. J. Sci.*, 17(4):217-33.

The comparative stratigraphy of the marine Trias of western America. *Proc. Calif. Acad. Sci.*, 3d ser., 1:323-430.

1905

With A. Hyatt. The Triassic cephalopod genera of America. *U.S. Geol. Surv., Profess. Papers*, 40:1-394.

1906

The paragenesis of the minerals in the glaucophane-bearing rocks of California. *Proc. Am. Phil. Soc.*, 45:183-242.

1907

The stratigraphy of the western American Trias. *Festschrift, Adolph v. Koenen*, pp. 377-434. Stuttgart, 1907.

1909

Salient events in the geologic history of California. *Science*, n.s., 30:346-50.

1910

The geologic record of California. *J. Geol.*, 18:216-27.

Ancient climates of the West Coast. *Pop. Sci. Monthly*, 76:478.

## 1912

On the distribution of lower Triassic faunas. *J. Geol.*, 20:13.

The occurrence of coral reefs in the Triassic of North America.  
*Am. J. Sci.*, 33(4):92-96.

Geologic range of Miocene invertebrate fossils of California. *Proc. Calif. Acad. Sci.*, 4th ser., 3:161-82.

Ancient portals of the earth. *Pop. Sci. Monthly.*, 80:393-99.

## 1914

The middle Triassic marine invertebrate faunas of North America.  
*U.S. Geol. Surv., Profess. Papers*, 83:1-254.

Acceleration of development in fossil Cephalopoda. *Stanford Univ. Publ.*, 30:1-30.

## 1915

With others. Relations of the invertebrate faunas of the American Triassic to those of Asia and Europe (discussion). *Bull. Geol. Soc. Am.*, 26:412.

## 1916

The geologic formations of California, with reconnaissance geologic map. *Bull. Calif. State Mining Bur.*, 72:1-47.

## 1919

Climatic relations of the Tertiary and Quaternary faunas of the California region. *Proc. Calif. Acad. Sci.*, 4th ser., 9:123-73.

## 1924

John Casper Branner. *J. Geol.*, 32:240.

## 1927

Upper Triassic marine invertebrate faunas of North America.  
*U.S. Geol. Surv., Profess. Papers*, 141:1-262.

1929

The transitional Permian ammonoid fauna of Texas. *Am. J. Sci.*,  
17:63-80.

1931

Upper Triassic marine invertebrate faunas of North America.  
*Geol. Zentr.*, 44:440.

1932

Lower Triassic ammonoids of North America. *U.S. Geol. Surv.*,  
*Profess. Papers*, 176:199.