

NATIONAL ACADEMY OF SCIENCES

JOHN WEST WELLS

*1907—1994*

---

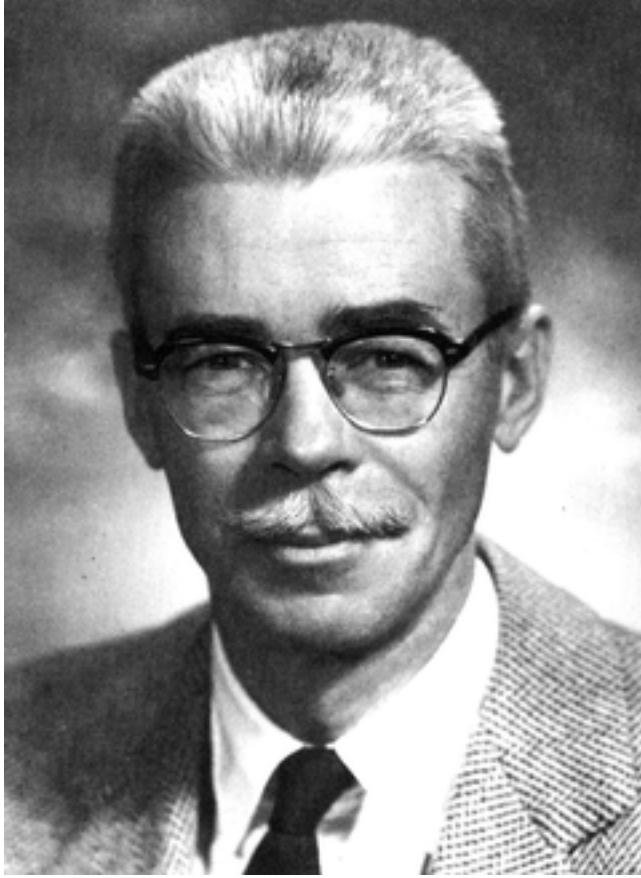
*A Biographical Memoir by*

WILLIAM R. BRICE

*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 1996  
NATIONAL ACADEMIES PRESS  
WASHINGTON D.C.



Courtesy of the Division of Rare and Manuscript Collections, Cornell University Library

*John W. Wells*

# JOHN WEST WELLS

*July 15, 1907–January 12, 1994*

BY WILLIAM R. BRICE

JOHN WEST WELLS DIED at his home on Brook Lane in Ithaca, New York, on January 12, 1994. As a teacher, scholar, and internationally known researcher he made an indelible mark on the world of paleontology through his own contributions and through the work of his many students. Although he spent the formative years of his teaching career at Cornell University, he served on the faculty at the University of Texas (1929-31), at the State Normal School (SUNY) at Fredonia, New York (1937-38), and at Ohio State University (1938-48). During World War II he served with the Office of Strategic Services and assisted with war damage assessment studies.

Wells was a leading authority on both modern and fossil corals, and it was through his work with these simple fossils that he provided tangible evidence of changes in the rotational period of the earth. Geophysicists had long predicted that tidal friction should cause a slowing of the earth's rotation, but it was John Wells who, using only the simplest of equipment, counted the daily growth rings on fossil corals clearly demonstrating the predicted changes in the rotational rate. This one small paper of only three pages spawned a remarkable increase in research studies dealing with the incremental skeletal growth in many groups of invertebrates.

## EARLY YEARS AND EDUCATION

John Wells was born in Philadelphia on July 15, 1907, but spent most of his youth in Homer, New York, about 20 miles from Cornell University, surrounded by the classic Devonian rocks of the Finger Lakes region. After graduating from the local high school he attended the University of Pittsburgh with the intention of studying medicine, but soon switched to chemistry. As part of his course work he took a few geology courses which really captured his imagination. He especially liked the two geology professors, Ransom E. Sommers and Henry Leighton. This chance meeting of Wells with Sommers and Leighton has an interesting twist to it, for both Sommers and Leighton were graduates of Cornell University.

Eventually Wells took more courses in geology than chemistry, which was his major, and he received his bachelor of science degree in 1928. Upon graduation he obtained a position at the University of Texas, not in chemistry, but as an instructor of geology. By this time he had developed an interest in paleontology and Leighton, his mentor at the University of Pittsburgh, suggested he should study biology. As his home was only a few miles from Cornell University, it became the obvious choice and he attended two summer sessions there to increase his knowledge of biology.

Leighton also suggested that, if Wells was truly interested in paleontology, he should study with Gilbert D. Harris at Cornell. No doubt Wells had made contact with Harris during his two summers studying biology at Cornell, for he soon obtained an assistantship with Harris which covered his living expenses and \$75 per term for tuition. While still teaching at the University of Texas, Wells completed his M.A. at Cornell in 1930, and the following year he left

Texas to pursue further graduate work under Harris's guidance at Cornell.

While at Cornell Wells met and married a fellow geology student, Elizabeth Baker, known to her friends as "Pie," a name which came from her childhood days in Indian Guides. John and Pie were married in 1932, and they had one daughter Ellen Baker Wells. John was predeceased by his wife of almost sixty years, who died at their summer home on Cayuga Lake in Sheldrake, New York, on July 1, 1990. Their daughter died in 1995, but he is survived by two granddaughters, Diane Elizabeth Hull and Linda Ann Wilson, and two great-grandchildren, Alan Scott Hull and Elizabeth Darlene Hull, all of San Luis Obispo, California.

After receiving his Ph.D. in 1933 Wells was awarded a National Research Council Fellowship and he spent well over a year in Europe studying at the British Museum in London, the Musée Nationale in Paris, the Humboldt Museum in Berlin, and other locations. During this time he laid a strong paleontological foundation that was to pay great dividends later with his taxonomic work on corals. The motivation behind this trip may have come from his friend and advisor at Cornell, G. D. Harris, for Harris had made a similar but less extensive study sojourn in Europe before joining the faculty at Cornell in 1894.

Upon his return from Europe, Wells managed to work with T. Wayland Vaughan in Washington, D.C., while job hunting. One result of this association was their monumental volume on the revision of Scleractinia<sup>1</sup> in 1943. During 1937-38 Wells taught at the State Normal School at Fredonia, now part of the state university system of New York, but soon left for a position at Ohio State University, where a former Cornell classmate, W. Storrs Cole, was on the faculty. It is most likely that his association with George White at Ohio State led Wells to develop an interest in the history

of geology and he eventually produced over a dozen papers in that field. Both Wells and White were strong supporters of the History of Earth Sciences Society, which was founded in 1981-82.

In 1948 Wells followed his colleague, Storrs Cole, to Cornell where he would spend the rest of his career, serving as a professor of paleontology in the department where he had been a graduate student and occupying an office just down the hall from Cole. Wells was department chairman from 1962 until 1965, and upon his retirement in 1973 became professor emeritus.

#### PROFESSIONAL ACTIVITIES

From his first paper in 1930 until his last in 1988 Wells directed his research efforts toward a better understanding of scleractinian corals. Over half of his more than 175 professional papers addressed some aspect of these organisms. The first work, in which he described corals from the Glen Rose Formation, was a result of his research while at the University of Texas; but he soon expanded his work to include fossils from the Atlantic and Gulf coastal plain. Wells benefited from his relationship with G. D. Harris, who, two years before his retirement from Cornell, founded the Paleontological Research Institution (PRI) in 1932, a private research organization devoted primarily to the study of Tertiary fossils but encompassing the study of all geologic history. Several of Harris's former students were working in many parts of the world during the 1930s and they would send Harris well documented samples from their field areas, and he would have Wells do the identification and descriptions. Another benefit was derived from the fact that PRI published two paleontological journals which Harris founded, *Bulletins of American Paleontology* (1895) and *Palaeontographica Americana* (1916), which provided an av-

enue for continuous publication of the material as it became available. Although Wells did publish many papers through PRI, he was not in any way limited to those journals; nor did he limit his research just to the corals, for he turned his boundless curiosity to other topics of paleontology such as fossil vertebrates in the Devonian rocks of Ohio and New York and, being in the heart of Devonian country, he examined the tabulate and rugose corals from those rocks. His analysis of *Heliophyllum halli*<sup>2</sup> remains the seminal description of individual variation in fossil invertebrates. While his work on scleractinian corals was systematic and highly developed, his work with fossils from the Devonian rocks seemed to be driven more by his interest in the particular topic or fossil than part of a planned, orderly study.

Until about 1950 Wells worked only with fossil corals from the Mesozoic and Cenozoic eras, but through his relationship with the U.S. Geological Survey, which he maintained from 1946 until well after his retirement, he and colleague Storrs Cole were selected to be part of the scientific team assigned to the atomic bomb testing sites in the Pacific: Bikini Atoll in 1947 and Arno Atoll in 1950. From this time forward he began to expand his knowledge of recent corals. Material from these and other expeditions occupied him from 1950 well into the 1980s. Few people were his equal in species-level coral taxonomy or in his encyclopedic knowledge of both fossil and recent corals. In addition to the monograph mentioned above he published in 1954 the *Recent Corals of the Marshall Islands*<sup>3</sup> and in 1956 with Dorothy Hill prepared most of the Coelenterata section of the *Treatise on Invertebrate Paleontology, Part F*.

From my own association with Wells at Cornell, first as a graduate student in the department and then as a member of the summer teaching faculty, I remember countless boxes of coral specimens arriving on a continual basis and all

addressed to Dr. Wells. In 1971 alone he identified well over one thousand specimens from the Red Sea sent to him by colleagues at Tel Aviv University after other people failed to identify them.

Even though the bulk of his work was on corals mainly from Mesozoic to Recent it was his work with some Devonian rugose corals of New York that really caught public attention. In 1954 Wells was a Fulbright Lecturer at Queensland University in Brisbane, Australia, which provided him with an opportunity both to study the corals of the Great Barrier Reef and make an extensive collection of corals for the U.S. National Museum in Washington, D.C. Around the Cornell department the story was told that it was while studying these living corals and their diurnal habits (active in the daytime and more dormant at night) Wells started thinking about the fossil corals with regard to this activity. Using Devonian rugose corals collected near Cornell and using very unsophisticated equipment, Wells began to count fine ridges about 50 microns wide between the larger ridges which were interpreted as annual layers on these samples. He believed these fine ridges represented daily growth lines deposited during the daytime activity of the animal; thus, a count of these would indicate the number of days the organism was active and, most importantly, this count would represent the number of days in the year at the time the coral was alive. His ridge counts centered around 400; thus, he postulated that the earth rotated 400 times per year during the Devonian, compared to about 365 today. Later studies showed the number of days during the Pennsylvanian to be somewhere in between. So he had provided independent evidence to support the geophysical calculations and speculation about the gradual slowing of the earth's rotational period. He first delivered these results as part of his presidential address to the Paleontological Soci-



ety in November 1962; shortly thereafter his address was published in *Nature* as *Coral Growth and Geochronometry*<sup>4</sup>. This discovery came at a time when “big science” was the order of the day and huge sums of money were being spent on equipment and research. J. B. S. Haldane, the British scholar, noted this fact in a *New York Times* article and pointed out that great science can still be done with nothing more complex than a hand lens and careful observation.

It was this work by Wells and the literal explosion of similar studies on the daily, monthly, and annual growth records preserved in fossils that allowed for new calculations on the orbital pattern of the earth; this, in turn, has caused a re-interpretation of the cyclical deposition of sedimentary rocks and climate variation.

#### THE FINAL YEARS

When the Department of Geological Sciences at Cornell moved from the College of Arts and Sciences to the College of Engineering in 1981, Wells, after being in and around McGraw Hall since his student days in the early 1930s, moved with it. In 1973 after twenty-five years at Cornell he retired from active teaching and became professor emeritus, but he certainly did not retire from active research. He published seven papers and abstracts in the year of his retirement and followed these with continued research and publication. His 1983 revision of the Galápagos Scleractinia<sup>5</sup> provided quite a comprehensive account of this fauna.

Although Wells was a private person he was generous and loyal to his friends. With a house, “Luck Stone Lodge”, on Cayuga Lake at Sheldrake, New York, Wells’s small home near Cornell was always vacant during the summer. It was not uncommon for him to loan his Ithaca place to a newly appointed professor of prior acquaintance who was waiting for his own dwelling to be readied. That invitation would

be supported by a bottle of champagne left in the refrigerator as a welcome. Wells was a noted historian of the Cayuga Lake region and I remember on field trips how he would give commentary not only on the fossils and rocks we were studying, but also on the changes in architectural styles of the houses over time and from which quarry the building stones in the various houses had come. His small publication *The Cayuga Lake Bridge*<sup>6</sup> went through three editions.

He earned and received many awards and accolades over his life time (e.g., a fellow in the Geological Society of America, president of the Paleontological Research Institution [1961-63], president of the Paleontology Society [1961-62], member of the National Academy of Sciences [1968], Paleontology Society Medal [1974], and the James Hall Medal of the New York Geological Survey [1987]).

The fame changed him very little; he remained just John Wells. One day not long after his election to the National Academy of Sciences he was sorting his mail during the slow elevator ascent to the fourth floor of McGraw Hall. Just as he reached the floor a student heard him mutter to himself after opening an impressive looking envelope, "Oh, dinner at the White House. The wife will like that," and went through the open door into his laboratory, leaving a somewhat speechless student in his wake.

Perhaps the James Hall Medal citation says it best:

John W. Wells  
for distinguished contributions to  
paleontology and stratigraphy  
Professor, Historian, Mentor

NOTES

1. Revision of the suborders, families, and genera of the Scleractinia. Geological Society of America Special Paper, no. 44.

2. Individual variation in the rugose coral species *Heliophyllum halli* E. & H. *Palaeontogr. Am.* 2(6):1-22, 1937.
3. U.S. Geologic Survey Professional Paper, 260-I, p. 385-486.
4. *Nature* 197(4871):948-50.
5. Annotated list of the scleractinian corals of the Galápagos. In *Corals and Coral Reefs in the Galápagos Islands*, eds. P. W. Glynn and G. M. Wellington, pp. 212-96. Berkeley: University of California Press.
6. Ithaca, New York: DeWitt Historical Society, 1958, 1961, 1966.

## SELECTED BIBLIOGRAPHY

For a complete bibliography see W. A. Oliver and S. D. Cairns. John West Wells, 1907-1994. *Fossil Cnidaria & Porifera* 23(1.2), 1994.

1932

Study of the reef corals of the Tortugas. Annual Report of the Tortugas Laboratory. *Carnegie Inst. Washington, Yearb.* 31:290-91.  
Corals of the Trinity Group of the Comanchean of central Texas. *J. Paleontol.* 6:225-56.

1933

Corals of the Cretaceous of the Atlantic and Gulf coastal plains and western interior of the United States. *Bull. Am. Paleontol.* 18(67):85-288.

1934

Eocene corals from Cuba. *Bull. Am. Paleontol.* 20:147-60.  
Notes on some European Upper Cretaceous corals. *Ann. Mag. Nat. Hist.*, ser. 10, 14:385-90.  
Some fossil corals from the West Indies: *Proc. U.S. Natl. Mus.* 83(2975):71-110.

1937

New genera of Mesozoic and Cenozoic corals: *J. Paleontol.* 11:73-77.  
Fish remains from the Tully formation *Science* 86(2244):611-12.

1941

Upper Cretaceous corals from Cuba: *Bull. Am. Paleontol.* 26(97):282-300.

1942

Arthrodiran fish plates from the Enfield Formation (Upper Devonian) of New York: *J. Paleontol.* 16:651-56.

1943

Early hydrographic work on an American lake. *Science* 98:562.

1947

A list of books on the personalities of geology. *Ohio J. Sci.* 47:192-200.

1948

Lower Cretaceous corals from Trinidad, B. W. I. *J. Paleontol.* 22:608-16.

1951

With H. S. Ladd, J. I. Tracey, and W. S. Cole. Drilling on Bikini Atoll, Marshall Islands. *Int. Geol. Congr. 18th Session Rep.* 8:38-43. Geologic studies of atolls. Handbook for atoll research (Preliminary trial edition), pp. 32-33. National Research Council: Pacific Science Board.

The coral reefs of Arno Atoll, Marshall Islands. Atoll Research Bulletin Number 9.

1952

Thomas Wayland Vaughan (1870-1952). *Bull. Am. Assoc. Petrol. Geol.* 36:1495-97.

1953

Lower Jurassic corals from the Arequipa region. American Museum of Natural History Novitates, no. 1631.

1954

Recent corals of the Marshall Islands. U.S. Geological Survey Professional Paper, 260-I, pp. 385-486.

Fossil corals from Bikini Atoll. U.S. Geological Survey Professional Paper, 260-P, pp. 609-17.

1963

Early investigations of the Devonian system in New York, 1656-1836: Geological Society of America Special Paper, no. 74.

1968

Scleractinian anthozoa. In *Developments, trends, and outlook in paleontology*, ed. R. C. Moore. *J. Paleontol.* 42:1361-62.

1970

Problems of annual and daily growth rings in corals. In *Palaeogeophysics*, ed. S. K. Runcorn, pp. 3-9. London: Academic Press.

1973

New and old scleractinian corals from Jamaica. *Bull. Mar. Sci.* 23:16-55.

1986

A list of scleractinian generic and subgeneric taxa, 1758-1985: *Cnidaria* 15(1.1).

