bers are very likely about the same in each case. Their faculty and alumni connections are similar; their college activity has been about equal. Their members are drawn from about the same localities, that is, the majority of their members come from down state communities. If the freshmen pledged to these four chapters were lined up it would be highly difficult to point out to which chapter the different men were pledged. But in matters of scholarship there have been many big differences during the ten semesters. The reason for these differences is without doubt in the difference in chapter management. Only in this way could one explain why freshmen so much alike on entering should make up chapters so different in scholarship.

A member of Sigma Chi contends that their greatest handicap has been in the weakness of the junior and senior classes year in and year out. A comparison of these four chapters on this point shows the following results:

	Number Initiated in Ten Semesters	Number Graduated in Ten Semesters
Phi Gamma Delta ...	53	32
Alpha Tau Omega ...	55	29
Sigma Chi	59	20
Delta Tau Delta	61	16

In a chapter where the upper classes are weak the work is doubled; more freshmen must be initiated and trained to fill up the gaps, and at the same time there are fewer upperclassmen available for developing the underclassmen and for furnishing efficient leadership. Then, too, the presence around the house of a number of men who expect to drop out at the end of the semester without trying to complete their courses is very demoralizing upon the work of all other members of the chapter. I have no doubt that many chapters could strengthen themselves very greatly by building up a tradition that the members of the chapter should feel an obligation to stay in college until graduation.

Another conclusion that must inevitably be drawn is that the fraternity upperclassmen are open to a charge that fraternity life engenders in the members a spirit of contentment with a grade of work somewhat lower than that of which the men are capable. The freshmen seem to be holding up their end pretty well; but the upperclassmen fail to live up to the promises of the freshmen year. This charge is really serious, and the fraternities will have to meet it sooner or later. State universities are too expensively equipped to allow any of the students to do less than their best without damaging the interests of the citizens of the state. These universities, too, are so peculiarly prepared to give a kind of training that the students may get nowhere else that fraternity men may not say that they are justified in sacrificing a part of the benefit of this training in order to get other kinds of training which, in most cases, can be obtained elsewhere. By bringing their average up to that of the general university average for men the fraternities may show that they are not guilty of the charge that they tend to develop a happy mediocrity in their members toward matters of scholarship.

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THEODORE NICHOLAS GILL

MANY scientific associates and friends of Dr. Theodore Nicholas Gill, who died in Washington City at noon on September 25, 1914, met on the following day at the U. S. National Museum to do honor to the memory of their deceased colleague. Among those who spoke were Dr. Richard Rathbun, Acting Secretary of the Smithsonian Institution, Mr. Leonhard Stejneger, Dr. L. O. Howard, Dr. Paul Bartsch, Dr. Frank Baker, and Mr. Paul Brockett of the Museum staff, as well as Dr. Hugh M. Smith, Commissioner of Fisheries. A tribute expressing the sorrow attendant on his death and the great loss to science in general and the Smithsonian Institution and National Museum in particular was adopted at the meeting.

Dr. Theodore Gill, as he was best known, was the son of James Darrell and Elizabeth Vosburgh Gill, and was born in New York City on March 21, 1837. His early education

was received in private schools and from special tutors, and then he studied law, but was never admitted to the bar. As he grew to manhood he developed an interest in natural science and became especially interested in fishes, frequently visiting the markets along the river fronts in New York for the purpose of examining the uncommon varieties that were received there. During the winter of 1857–58 he visited Barbados, Trinidad and other West Indian Islands for Mr. D. Jackson Stewart, for whom he collected shells and various specimens of natural history. The results of his explorations were worked up mainly in the library of Mr. J. Carson Brevoort, and published in the *Annals* of the New York Lyceum of Natural History and in the *Proceedings* of the Philadelphia Academy of Natural Sciences. It was in this library (the best of its kind in the United States at that time) of this patron of science that he laid the foundations for that great knowledge of books and authorities which, combined with a splendid memory, served him so well in his after years. In 1859 he visited Newfoundland and studied its fauna, and in 1860 prepared a report on the fishes of the northern boundary for the State Department of the United States.

In 1861 he came to Washington and was given the teaching of zoology at Columbian, now George Washington, University, with which institution he remained connected until his death, although subsequent to 1910 he was emeritus professor of zoology. For much of the time during this long period he met his classes regularly, considering it a privilege to contribute his services to the university without compensation. Even after his retirement he continued his active interest in the department which he had organized and freely contributed aid and advice on all matters, devoting special attention, however, to the post-graduate work.

Almost immediately after settling in Washington, Gill came under the influence of Professor Spencer F. Baird, who was quick to appreciate his ability, and who found congenial work for him in the library of the Smithsonian Institution, of which he had charge from 1862 until 1866. When the library was transferred to the National collections in the Capitol he continued in that service until 1874 and was for a time assistant librarian of the Library of Congress. He then severed his connection with the library and thereafter devoted his attention almost exclusively to studies in natural history, working largely in the libraries of the Smithsonian Institution and the U. S. National Museum, holding the honorable appointment of associate in zoology on the scientific staff of the museum subsequent to 1894.

His activity as a zoologist was unceasing and his contribution to science included over five hundred separate papers, the greatest number of which have been on ichthyology. Of these many appear in the *Proceedings* of the Philadelphia Academy of Natural Sciences, but since 1878 the *Proceedings* of the U. S. National Museum have been his favorite medium of publication. His work was chiefly on systematic ichthyology, especially in the arrangement of fishes in classes, orders and families, yielding a more natural and restricted distribution of genera which is now universally accepted in the United States, and largely so in Europe. While no monumental work is left to us from his pen, nevertheless in nearly every zoological work his name will be found in connection with the descriptions, nomenclature, or classification of the specimens under discussion. Among the more important monographs prepared by him are the following: "Synopsis of Fresh-water Fishes" (1861); "Arrangement of the Families of Mollusks" (1871); "Arrangement of the Families of Mammals" (1872); "Arrangement of the Families of Fishes" (1872); "Catalogue of the Fishes of the East Coast of North America" (1861–73); "Principles of Zoogeography" (1884); "Scientific and Popular Views of Nature Contrasted;" "Account of Progress in Zoology" (1879–84); "Parental Care among Fresh-water Fishes" (1906); "Contributions to the Life-histories of Fishes" (1909). He wrote most of the volume on fishes and much of that on mammals in the "Standard Natural History" and was the author of numerous addresses and reviews that appeared in *Nature*, Science and other scien-

tific journals. The zoological portion of Johnson's Universal Cyclopædia and the zoological text of the Century and Standard Dictionaries were also prepared by him.

George Washington University recognized his splendid services so freely given to that institution by the conferment of the honorary degrees of A.M. in 1865; M.D. in 1866; Ph.D. in 1870, and finally in 1895 bestowing upon him its highest doctorate, that of laws. His many contributions to science were gladly recognized by honorary elections to more than seventy-five scientific societies. In the United States he was a member of the American Academy of Arts and Sciences, the American Philosophical Society, and the National Academy of Sciences. To the last of these he was elected in 1873, and at the time of his death his length of membership was exceeded by only five other members. He represented the academy at the International Zoological Congress in 1898 and was its delegate and that of the Smithsonian Institution at the 450th anniversary of the founding of the University of Glasgow in 1901. In 1868 he was elected to the American Association for the Advancement of Science, and in 1897 succeeded to the presidency of that organization on the death of his friend and colleague, Edward D. Cope.

It has been said that literature and science are not two things, but rather two aspects of the same thing—they both deal with knowledge, but the recorder of literature, the librarian, deals with knowledge in its secondary form, conclusions, which he files and reissues from time to time, while the scientist perhaps comes happily closer to nature itself through his personal investigations, the results of which he turns over to the recorder. Dr. Gill, it may be said, therefore possessed a remarkable dual ability, being both a librarian and a scientist, and, ably combining his talents, he made researches, recorded them and was able whenever called upon to present the results.

Having thus two distinct specialties, it may be readily understood that Dr. Gill, unlike many of our leading scholars, was not narrowed by a sole point of view, but possessed an exceptionally broad and generous mind, which he readily lent to divers purposes for the advancement and diffusion of scientific learning.

To establish a touch of fellowship and fraternalism among the men of the District of Columbia who had common interests in science, literature and the fine arts, he rendered much assistance during the organization of Washington's unique club, The Cosmos, and was enrolled as one of the ten founders who incorporated December 13, 1878. As a token of the esteem and affection with which he was held by the many members thereof, he was given a banquet by more than a hundred members of the club, on the occasion of his 75th birthday, and the 56th year of his published contributions to knowledge. This dinner was held on December 13, 1912, and was made the occasion for many valuable testimonials by some of the most learned scientific investigators and writers as well as numerous intimate friends, to his long and faithful services to science and literature.

As mentioned above, Dr. Gill did not incorporate his matchless store of knowledge in ponderous volumes of monumental dimensions, but as one of the speakers at the memorial meeting happily put it: "If you ask for his monument look around" in the minds and hearts of the scientific men who came into contact with him. To them he was an inexhaustible fountain both of inspiration and of information. Many a learned dissertation, many a brilliant combination or hypothesis, many a lucid and critical exposition, emanating from Washington biologists in almost every branch of the science, originated from discussions with Dr. Gill. They were in the habit of coming to him with their problems and their doubts and they seldom left him without receiving both ideas and information, no matter what their specialty. His mind was a wonderful combination of characteristics rarely found together in one man. A keenly critical and analytical power was paired with an unusually fine synthetic tact, and an amazing memory of details combined with a discriminating faculty of seeing essentials. He also possessed the fortunate gift of divesting himself of preconceived notions. Finally, no selfish desire for

self-aggrandizement obscured his judgment, which was guided solely by his desire for scientific honesty and truth. Small wonder that he became a progressive and a radical in systematic zoology, so much so that when he first published his classificatory arrangement of fishes and other vertebrates he was almost a generation ahead of his time. True, his ideas were taken up and carried out by his pupils, the American ichthyologists with David Starr Jordan at their head, but it is only recently that he had the satisfaction of learning that the European fish specialists have finally accepted his views, giving him unstinted praise for their originality and intrinsic worth.

SCIENTIFIC NOTES AND NEWS

M. Paul de Saint Marceaux has completed the monument which is to be dedicated in memory of Pierre Berthelot, the great French chemist, in front of the Collège de France, Paris.

On the occasion of the Australian meeting of the British Association, the University of Adelaide conferred the degree of doctor of science on Professor W. J. Sollas, Professor A. Penck, Professor T. W. Edgeworth David, Professor E. W. Brown, Sir Oliver Lodge, Professor H. Jungersen, Professor G. W. O. Howe, Dr. C. F. Juritz and Professor von Luschan.

Dr. Eugen Oberhummer, professor of geography at the University of Vienna, was appointed visiting Austrian professor to Columbia University for the academic year. Despite the war Professor Oberhummer is expected to be in residence during the second half-year. The visiting professors appointed from Russia and France, Professors Theodor Niemeyer and M. Paul Hazard, are said to have been called to military service.

Dr. Allan J. McLaughlin, of the U. S. Health Service, has been appointed health commissioner for Massachusetts.

The Quadrennial Fellowship of $1,000 of the Nantucket Maria Mitchell Association for the year June 15, 1915, to June 15, 1916, has been awarded to Miss Margaret Harwood, A.B., Radcliffe College, 1907, who has been for three years astronomical fellow of the association. Miss Harwood has elected to work at the University of California. The second fellowship of $500 has been awarded a year in advance, in order that the candidate may prepare herself for the special work undertaken by the Maria Mitchell Observatory. Miss Susan Raymond, A.B., Smith College, 1913, has received the appointment.

Dr. Johan Nordal Fischer Wille, professor of botany and director of the Botanical Garden of the University of Christiania, is visiting the botanical institutions of the United States. He is one of the foreign delegates to the celebration of the twenty-fifth anniversary of the Missouri Botanical Garden to be held at St. Louis on October 15 and 16.

The following members of the Western Reserve University medical faculty have returned from abroad: T. N. Stewart, professor of experimental medicine; J. J. R. MacLeod, professor of physiology; G. W. Todd, professor of anatomy and P. J. Hanzlik, instructor in pharmacology.

The first meeting of the new session of the Royal Geographical Society, London, will be held on November 9, when Mr. Belloc will lecture on "The Geography of the War." On November 23, Lord Bryce will deal with "The Mental Training of a Traveler," and on December 7, Miss Lowthian Bell will give an account of her recent journey in Arabia.

The death is recorded in *Nature* of George Gresswell, formerly lecturer in physical science, under the government of the Cape of Good Hope, at the Diocesan College, Rondebosch, and demonstrator of practical physiology and histology at Westminster Hospital.

A meeting of the Society for the Promotion of Industrial Education will be held at Richmond, Va., December 9–12.

We learn from the Los Angeles *Tribune* of September 29, that the collection of Mr. Henry Hemphill, recently referred to in Science, was