SCIENCE

FRIDAY, NOVEMBER 6, 1896.

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MSS. intended for publication and books, etc., intended for review should be sent to the responsible editor, Prof. J. McKeen Cattell, Garrison-on-Hudson, N. Y.

GEORGE BROWN GOODE.

THE grievous loss to the scientific world of Dr. George Brown Goode has already been recorded in SCIENCE. At the request of the editor I now add a notice of some of the prominent features of his biography and an estimate of his scientific works.

For the biographical portion (I.) I am indebted to Dr. Marcus Benjamin.

I.

In the untimely death of Dr. G. Brown Goode, American science mourns the loss of one of its most distinguished representatives. No more, and equally no less, can be said of the man whose best years seemed as yet unlived, when he was suddenly stricken with pneumonia and died a victim of that cruel disease at his home on Lanier Heights, in Washington City, on Sunday evening, September 6.

George Brown Goode was born in New-Albany, Ind., on February 13, 1851. His ancestry was colonial and he traced with pride his paternal line to John Goode, of Varina Parish, in Virginia, who was a soldier under Bacon in 1676, in the first armed uprising of Americans against the oppressions of royal authority. On his mother's side he was descended from the Crane family of New Jersey, of which Stephen Crane was one of the most conspicuous representatives of that colony in the events that led to the war of the Revolution.

As a boy he moved with his parents from Indiana and settled in New York. He early showed a fondness for natural history and it was his pride to recall how this boyish fancy was confirmed by his reading the reports of the Smithsonian Institution, a set of which formed part of the family library. As he grew older he was prepared for college and in time entered Wesleyan University, in Middletown, Conn., where he was graduated in 1870, being one of the youngest members of his class. During his college career his predilection for natural history studies was marked, and he was recognized as 'a man exceptionally promising for work' in that direction. During the first part of the college year of 1870–71, he was entered as a graduate student in Harvard University and there came under the influence of the elder Agassiz. Meanwhile, Orange Judd Hall, a building devoted to natural sciences, was erected in Middletown through the munificence of the gentleman whose name it bears, and young Goode was promptly called by the faculty of his *alma mater* to arrange and display the natural history collections of the university in such a shape as to make them worthy the name of a museum. As the work proceeded it became manifest that he had found his vocation and in the task of arranging the museum of Wesleyan University he began to display that remarkable ability for museum administration, that has since found so worthy a field in the National Museum in Washington.

His scientific studies, however, were not neglected and he sought to increase his knowledge by becoming acquainted with the workings of the United States Fish Commission. He met Prof. Baird, in the summer of 1873, in Portland, Me., during the meeting there of the American Association for the Advancement of Science. It proved a fortunate meeting for both men. The elder naturalist was at once impressed by the enthusiasm of the younger man and invited him to become an assistant in the service of the commission. Regularly thereafter from 1873 until 1880 Goode was a member of one of the summer parties and later served in other capacities until, on the death of Prof. Baird, he was at once called to the place of Fish Commissioner, which high office, notwithstanding the many other duties pressing on him, he consented to fill without salary until the law could be amended so as to make the office independent of the National Museum.

In connection with the Fish Commission it is proper to mention the active part that he took in behalf of the United States at the Halifax Commission, which had to do with settling the fishery relations between this country and Canada. Nor should the fact that he had charge of the work for the Fishery Division of the tenth census be omitted.

The ability displayed by Goode during his first season with the Fish Commission soon led to closer ties between himself and Prof. Baird, for the latter invited him to join the scientific staff of the National Museum. In 1873 he became regularly connected with that institution, and for a time received as his only compensation specimens of natural history which he in turn presented to the Museum in Middletown, where he retained his connection until 1877. From assistant curator in the National Museum he was advanced to the office of assistant director, and in 1887 he was made, on the recommendation of Secretary Baird, assistant secretary of the Smithsonian Institution in charge of the National Museum, which office he continued to fill until his death. The genius that he first showed in the arrangement of the collections in Wesleyan University broadened and developed as he grew older until it was universally conceded that he had no superior in the world among museum administrators. His writings on

this subject are accepted authorities, and include the well-known monograph 'Museums of the Future' (1890) and 'Principles of Museum Administrations' (1895) to which should be added his annual reports as assistant secretary during the years of his incumbency of that post.

The ability for museum administration with which he was so liberally gifted, led naturally to his active participation in what has come to be known among government officials as 'Exposition work.' Prof. Baird intrusted him with the installation of the Smithsonian exhibits at the Centennial Exhibition held in Philadelphia in 1876, and he served as U. S. Commissioner to the Fisheries Exhibitions that were held in Berlin in 1880 and in London in 1883. The minor expositions held in New Orleans, in Cincinnati, in Louisville, and more recently in Atlanta, contained his name on the Government Boards, and he was prominent in the management of the Government Exhibit at the World's Columbian Exposition held in Chicago during 1893, for which he also prepared a 'Plan of Classification' that formed the basis of the arrangement subsequently adopted by the officials for the installation of the exhibits. He had also to do with the Columbian Historical Exposition held in Madrid, Spain, during the winter months of 1892-93, and, after the death of the Commissioner General, acted in that capacity. His services in that connection gained for him the Order of Isabella the Catholic with the grade of Commander.

In this hasty summary of his life, only the more important of his many interests can be referred to; at least, mention must be made of his great fondness for matters pertaining to American history. His study of genealogy began when he was but a boy and led to his publication of the record of his family under the title of 'Our Virginia Cousins.' Soon after leaving college he was made one of the editors of the *Alumni Record*, of Wesleyan University, which is among the best of the 'college books.' He was one of the founders of the American Historical Association and contributed to its proceedings in 1890 his valuable paper on 'The Origin of the National Scientific and Educational Institutions of the United States.' He was also a member of the newly organized Southern Historical Society. Much of his leisure during the past two summers was given up to the preparation of the material that is to be used in the 'Half Century Book of the Smithsonian Institution,' which was his project, and which, when published, will be a monument to his knowledge of science in this country during the half century of the existence of the Smithsonian Institution.

Dr. Goode was one of the founders of the District of Columbia Society of the Sons of the American Revolution, becoming from the beginning one of its officers and since 1894 its president. He was a vice-president of the Society of the Sons of the Revolution and a lieutenant-governor of the Society of Colonial Wars.

In scientific societies he was equally conspicuous. In Washington he was a founder in several, and was a past president of the Philosophical Society and of the Biological Society, to both of which he contributed, on retiring, addresses that treated of the history of American science. Other societies both in this country and abroad were honored in having his name on their rolls. Among these were the Zoological Society of London and the National Academy of Sciences in the United States, to which he was elected in 1888. He was elected a member of the American Association for the Advancement of Science in 1873, and at its meeting held in Buffalo during August of this year he was chosen a vice-president for the section on zoology.

The honorary degree of LL. D.. was

conferred upon him by Wesleyan University and the degree of Ph. D. by Indiana University.

Incidental mention has been made of some of his larger works, but a complete bibliography of his papers would include hundreds of titles, so indefatigable had he been in the too few years of his busy life. He has gone, but his influence will remain so long as the National Museum shall exist, and his memory will ever be cherished by all who had learned to love and respect him.

II.

Dr. Goode's first contribution to science was published in 1871 in his twenty-first year and incorporated in a note of the editors of the *American Naturalist* (v. 489); it merely recorded the occurrence of 'The bill fish in fresh water' in the Connecticut river.

His first memoir giving any indication of his range of reading and ability in the systematization of facts was published two years later (1873) "On the question 'do snakes swallow their young'"*. Through an advertisement in *The American Agriculturist*, a weekly journal with a large circulation in rural districts, he obtained numerous answers to the question and thus was enabled to supplement the records previously published by original accounts. The result of a critical survey of the data at command compelled him to admit that there was a good foundation in fact for the popular belief, and that certain viviparous snakes do really admit their young, who instinctively seek refuge in the interior of their mother when danger threatens and are liberated when it has passed.†

A 'Catalogue of the Fishes of the Bermudas,'* published in 1876, furnished additional evidence of knowledge of the literature of his subject and ability to use it to advantage in the discussion of mooted questions and it also evinced his power of observation.

In the same year, 1876, appeared another work which, to a still greater degree, rendered manifest those same mental characteristics. The work was only a catalogue, but perhaps from no other publication can some intellectual qualities be so readily and correctly gauged by a competent judge as an elaborate catalogue. Powers of analysis and synthesis, and the ability to weigh the relative values of the material at hand, may make a 'mere catalogue' a valuable epitome of a collection and of a science. Such a production was the 'Classification of the Collection to illustrate the Animal Resources of the United States,'† a work of 126 pages; three years later this catalogue served as the basis for and was elaborated and expanded into a large 'Catalogue of the Collection to illustrate the Animal Resources and the Fisher-

* On the Question, "Do Snakes swallow their Young?" In Proc. Amer. Assoc. Advan. Sci. 1873 (1874), pp. 176–185. Also separately, repaged, 12 pp.

† Mr. H. Tootal Broadhurst has collected a number of original observations in a recently published pamphlet confirming the allegation that mother snakes may receive their young within their mouths. Mr. Broadhurst was apparently unacquainted with Dr. Goode's article; his own is entitled, 'Do the Young of Vipers take Refuge Down the Throat of the Mother in cases of Sudden Surprise or Danger?' (Dumfries, July, 1895. 8vo, 29 pp.)

* Catalogue of the Fishes of the Bermudas, Based chiefly on the collectings of the United States National Museum. . . Washington: Government Printing Office. 1876. [8° pp. (2) 1–82.—Bulletin United States National Museum. No. 5.]

† International Exhibition, 1876. Board in Behalf of United States Executive Departments. Classification of the Collection to illustrate the Animal Resources of the United States. A list of substances derived from the animal kingdom, with synopsis of the useful and injurious animals and a classification of the methods of capture and utilization. . . Washington: Government Printing Office. 1876. [8° pp. 126.—A second edition with supplementary title as Bulletin No. 6, United States National Museum.]

ies of the United States,'* a volume of 351 pages. These catalogues were for the tentative and adopted arrangement of material exhibited by the Smithsonian Institution and the United States Fish Commission at the 'International Exhibition, 1876.'

It was the ability that was manifested in these catalogues and the work incidental to their preparation that especially arrested the attention of Prof. Baird and marked the author as one well adapted for the direction of a great museum. For signal success in such direction special qualifications are requisite. Only some of them are a mind well trained in analytical as well as synthetic methods, an artistic sense, critical ability, and multifarious knowledge, but above all the knowledge of men and how to deal with them. Perhaps no one has ever combined, in more harmonious proportions, such qualifications than G. Brown Goode. In him the National Museum of the United States and the world at large have lost one of the greatest of museum administrators.

As a naturalist, the attention of Dr. Goode was especially directed to and even concentrated on the fishes. His memoirs, contributed mostly to the Proceedings of the United States National Museum, were numerous and chiefly descriptive of new species. (For many of these he had, as a collaborator, Dr. Tarleton Bean, then the curator of fishes of the United States National Museum.) Some of the memoirs, however, dealt with special groups, as the Menhaden (1879), Ostraciontidae (1880), Carangidae (1881), the Sword-fishes (1881), and the Eel (1882). His monograph of the Menhaden (*Brevoortia tyrannus*), contributed originally to the Report of the United States Commissioner of Fisheries* and then published as a separate work†—a large volume of nearly 550 pages and with 30 plates—is a model of critical treatment of information collected from all quarters. But his most important contributions were published as official Government reports and were the results of investigations especially undertaken for such reports. Especially noteworthy were the volumes comprising the results of the census of 1880.

The 1880 census was planned and carried out on an unusual scale. For the Fisheries, the U. S. Commission of Fish and Fisheries cooperated and Dr. Goode had general charge of the entire work. The assistants and special agents were consequently selected with judgment and the results were very valuable. The huge mass of statistics was digested and condensed in seven large quarto volumes representing five sections separately devoted to special branches of the subject.‡ Dr. Goode's cares were mainly

* International Exhibition, 1876. Catalogue of the Collection to illustrate the Animal Resources and the Fisheries of the United States, exhibited at Philadelphia in 1876 by the Smithsonian Institution and the United States Fish Commission, and forming a part of the United States National Museum. . . Washington: Government Printing Office. 1879. [8° pp. 351. (1)—*Bulletin United States National Museum, No. 14.*]

* The Natural and Economical History of the American Menhaden. In Report United States Commission of Fish and Fisheries, Part v., 1879, Appendix A, pp. 1–529, Pl. i–xxxi (xxx cancelled.—Pp. 194–267 by Prof. W. O. Atwater.

† American Fisheries—A history of the Menhaden by G. Brown Goode, with an account of the Agricultural Uses of Fish by W. O. Atwater. . . And an introduction, bringing the subject down to date. Thirty plates.—New York: Orange Judd Company. 1880. [8° pp. x, (i), iii–xii, 1–529 (1); 31 pl.—pl. 30 "cancelled."]

An edition, with a special introduction of the foregoing.

‡ The Fisheries and Fishery Industry of the United States. Prepared through the coöperation of the Commissioner of Fisheries and the Superintendent of the Tenth Census. By George Brown Goode, assistant director of the United States National Museum, and a staff of associates.—Washington: Government Printing Office. 1884 [—1887. 5 sections in 7 volumes.] "Section I, Natural History of Aquatic Animals" was mainly prepared by Doctor Goode.

concentrated on the first section, treating of the 'Natural History of Aquatic Animals,' which was discussed in over 900 pages of text and illustrated by 277 plates. This work was by far the most complete survey of the economical fishes of the country that had ever appeared and has since been the most prized; it led to another.

After the appearance of the Census volumes, Dr. Goode was urged to prepare a work for popular use. His consent to do so was followed by a volume, entitled 'American Fishes, a popular treatise upon the game and food fishes of North America,'* published by the Standard Book Company of New York. Inasmuch as none of the previous popular works on the American fishes had emanated from men of scientific eminence, it scarcely need be added that the new work had no rival in the field, so far as accurate information and details of habits were involved.

A short time previously Dr. Goode had also prepared the text to accompany a series of twenty large folio colored portraits by an eminent artist—Mr. S. A. Kilbourne—of the principal 'Game Fishes of the United States.'†

Never had investigations of the deep sea been conducted with such assiduity and skill as during the last two decades. The chief honors of the explorations were carried off by the British and American Governments. As the fishes obtained by the vessels of the United States Fish Commission were brought in, they were examined by Dr. Goode (generally in company with Dr. Bean) and duly described. At length Doctors Goode and Bean combined together data respecting all the known forms occurring in the abyssmal depths of the ocean and also those of the open sea, and published a resumé of the entire subject in two large volumes entitled 'Oceanic Ichthyology.'* This was a fitting crown to the work on which they had been engaged so long and the actual publication only preceded Dr. Goode's death by about a fortnight.

But the published volumes did not represent all the work of Dr. Goode on the abyssalian fishes. He had almost completed an elaborate memoir on the distribution of those fishes and, contrary to the conclusions of former laborers in the same field, had recognized for them a number of different faunal areas. It is to be hoped that this may yet be given to the world.

Morphological and descriptive ichthyology were not cultivated to the exclusion of what is regarded as more practical features. In connection with his official duties as an officer of the United States Fish Commission he studied the subject of pisciculture in all its details. Among his many contributions to the subject are one on 'The First decade of the United States Commission, its plan of work and accomplished results, scientific and economical' (1880), another treating of the 'Epochs in the History of Fish Culture' (1881) and two encyclopædic articles—'The Fisheries of the World' (1882), and the one entitled 'Pisciculture,' in the Encyclopædia Britannica (1885).

*American Fishes. A popular treatise upon the Game and Food Fishes of North America, with especial reference to habits and methods of capture. By G. Brown Goode. With numerous illustrations. New York; Standard Book Company. 1888. [8°, xvi+496 pp., col. frontispiece.]

†Game Fishes of the United States. By S. A. Kilbourne. Text by G. Brown Goode.—New York: Published by Charles Scribner's Sons. 1879–1881. [Folio, 46 pp., 20 plates and map.—Published in ten parts, each with 2 plates, lithographs in water color, and four page folio of text.]

Smithsonian Institution. United States National Museum. Special Bulletin. Oceanic Ichthyology. A treatise on the Deep-Sea and Pelagic Fishes of the World, based chiefly upon the collections made by the steamers Blake, Albatross, and Fish Hawk in the Northwestern Atlantic, with an Atlas containing 417 figures, by George Brown Goode, Ph.D., LL.D., and Tarleton H. Bean, M.D., M.S. Washington: Government Printing Office. 1895. 2 vols., 4°; I., xxxv+26, 553 pp.; II., xxiii+26* pp., 123 pl.

Although Dr. Goode's zoological publications were principally ichthyological, it was not because of narrowed sympathies or knowledge. As a naturalist he had acquaintance with several classes of the animal kingdom and especially with the vertebrates. He even published several minor contributions on herpetology, the voices of crustaceans, and other subjects.

Anthropology naturally secured a due proportion of his regards and, indeed, his catalogues truly embraced the outlines of a system of the science. As a worker in that field he has been considered recently by Dr. Mason in *The American Anthropologist*, IX., 353, 354.

The flowering plants also enlisted much of his attention and his excursions into the fields and woods were enlivened by a knowledge of the objects he met with.

Dr. Goode's bent of mind was to the historical investigation of a subject and historical matters enlisted much of his attention. Two addresses on the progress of the biological sciences in the United States, given by him as the retiring president of the Biological Society of Washington, well exemplified his diligence in the collection of data and his skill in presenting them, and it is to be hoped that they may be republished in a more available form.

These addresses entitled 'The beginnings of Natural History in America' were delivered in 1886 and 1887 and were published in the third and fourth volumes of the Proceedings of the Biological Society of Washington. The pages of the old chroniclers of American affairs, scarcely ever consulted by naturalists, had been ransacked and the items of interest culled for these choice addresses.

The addresses were subsequently supplemented by an essay on 'The Origin of the National Scientific and Educational Institutions of the United States' (1890), contributed to the American Historical Association.

Bibliography was also a favorite subject with Dr. Goode and he derived much pleasure from the inquiries which that word indicates. He completed exhaustive enumerations of the works of two of the most prominent writers on American vertebrates, and these were published by the Smithsonian Institution as Bulletins of the United States National Museum and as numbers of a series of 'Bibliographies of American Naturalists.' The first was devoted to Spencer Fullerton Baird (1883), and the fifth to Charles Girard (1891), frequently colaborers in olden times. Another (not yet published, but entirely printed) records the numerous memoirs of Philip Lutley Sclater, the distinguished ornithologist of England, who survives his biographer.

A gigantic work in the same line had been projected by him and most of the materials collected; it was no less than a complete bibliography of Ichthyology, including the names of all genera and species published as new. Whether this can be completed by another hand remains to be seen. While the work is a great desideration, very few would be willing to undertake it or even arrange the material already collected for publication. In no way may Ichthyology, at least, more feel the loss of Goode than in the loss of the complete bibliography.

The same inclination that led to historical investigation conducted him further into genealogy. As a result of some of his studies in that line, a large volume on the genealogy of the Goode family appeared in 1892 as a private publication with the title 'Virginia Cousins*.' It was printed for

* Virginia Cousins. A study of the Ancestry and Posterity of John Goode, of Whitby, a Virginia colonist of the seventeenth century, with notes upon related families, a key to Southern Genealogy, and a history of the English surname, Gode, Goad, Goode or Good, from 1148 to 1887.—Richmond, Virginia: J. W. Randolph & English. 1887. [4to, xxxvi+526 pp., 54 plates.]

the author in Washington. Its nearly 600 pages and 54 plates involved the information collected during a quarter century. Much historical and biographical information of general interest is to be found in the monograph and the most approved methods are manifest in the treatment and presentation of his theme.

The author's interest did not cease with the publication of the work; it rather increased, and he received so many new contributions and so much additional information that he felt obliged to prepare for a second edition. The new material had already been intercalated with the corrected old, and the second edition was nearly ready for the press when death interposed.

Doctor Goode was blessed with a poetical vein and loved to dip into the offerings of poets, old and new. Frequent quotations are to be found in his works and many apt ones are given at the heads of the chapters of the 'Game fishes of the United States' and the "American fishes."

His disposition was a bright and sunny one and he ingratiated himself in the affections of his friends in a marked degree. He had a hearty way of meeting intimates, and a caressing cast of the arm over the shoulder of such an one often followed sympathetic intercourse.* But in spite of his gentleness, firmness and vigor in action became manifest when occasion called for them. A tribute to those qualities from his chief who is better prepared to speak than myself will fittingly supplement this notice.

THEO. GILL.

SMITHSONIAN INSTITUTION.

IT has been suggested that I should say something about my dear personal friend and official intimate, Dr. G. Brown Goode, but since Dr. Gill, who is so much better fitted for the task than I, has consented to speak of his scientific career, I prefer to leave that side of Dr. Goode's life-work in such competent hands.

I do not want the occasion to pass, however, without saying briefly that I have never known a more perfectly true, sincere and loyal character than Dr. Goode's; or a man who with a better judgment of other men, or greater ability in moulding their purposes, to his own, used these powers to such uniformly disinterested ends, so that he could maintain the discipline of a great establishment like the National Museum, while retaining the personal affection of every subordinate. He was not only possessed of the exact scientific training which found expression in the ways which Dr. Gill has noted, and as a specialist in museum administration, but was an adept in many other branches of knowledge. His historical powers in grouping incidents and events were akin to genius. His genealogical writings showed wide and accurate research, while his literary faculty displayed itself with singular charm in some of his minor writings.

But how futile these words seem to be in describing a man, of whom perhaps the best, after all, to be said, is that he was not only trusted, but beloved by all with an affection that men rarely win from one another.

S. P. LANGLEY.

SMITHSONIAN INSTITUTION.

* Several portraits have been published. The first appeared in *Harper's Weekly* in 1887 and was a fine wood engraving and excellent likeness of him at the time—on the whole (in my opinion) the most satisfactory that has been made. Imprints of the engraving were furnished by the Harpers for the 'Virginia Cousins' and inserted opposite p. 288.

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*BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.**

ADDRESS TO THE ZOOLOGICAL SECTION BY THE PRESIDENT OF THE SECTION.

(*Concluded.*)

WE now come to the strictly biological part of our subject—to the inquiry as to

*Liverpool, 1896.