GOODE'S ACTIVITIES IN RELATION TO AMERICAN SCIENCE.

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Most persons unacquainted with the interior working of our executive bureaus have an impression that they are the creation of law, in the sense in which the term "creation" was formerly used to describe the coming into being of some part of the material universe. Perhaps this impression is seldom definitely formulated, but, nevertheless, it is common to hear arguments from intelligent people, bent on ameliorating government, which tacitly assume that an act of Congress by some inherent magic will accomplish that which they desire. It is a truism that whole schemes of social reorganization are built on no better foundation, and thousands of earnest reformers work, suffer, and even die for theories erected on this hypothesis.

Whatever of truth there may be in the application of this idea to the purely business offices of the Government, where finance, commerce, invention, or transportation are provided for, nothing could be more mistaken than its application to the scientific bureaus. For each and every one of them the world is indebted to some individual. In the majority of cases the man came with his purpose before the law was thought of, and his devotion to his self-imposed mission, his persistence, and his energy were the inciting causes of some lines in an appropriation bill, with all its potentialities, the seed of the present organization. Sometimes the sower, given the opportunity to dig and water, was spared to reap the first fruits of the harvest. On other occasions worthy successors arose, bore the burden and heat of the day, and carried out the plans to final triumph. Thus, to Hassler and Bache we owe the Coast Survey, which has spread the fame of American achievements in geodetic science through every civilized community; to Hayden, King, and Powell are due the organization and success of the Geological Survey of the United States; to the initiative of Smithson and guiding hand of Henry we owe the Smithsonian Institution; the Fish Commission was the embodied work of Baird; and to Baird and Goode's untiring labors we are indebted for the National Museum. There remain very few persons with intimate personal knowledge of the unwritten history of the

gradual development of the Museum. To Professor Henry American science owes a debt which is but seldom realized and can hardly be exaggerated. It is difficult for anyone, even with the printed records before him, to form an adequate idea of the conditions under which the Smithsonian Institution grew to its present stature, nor what unceasing vigilance was required of its head to avoid the pitfalls which everywhere beset its path in adolescence. Opinions, emphatic and divergent, were abundant, in and out of Congress, as to the policy and methods deemed desirable for the Institution. Men would have used the fund for a great library, museum of art, or university. The original act by which it was constituted was a compromise, leaving a door open for the advocates of either opinion to modify the policy of the Institution should the time come when any particular view could command a majority in the governing board. Professor Henry was determined that the "increase and diffusion of knowledge among men" in the highest and broadest sense of the words should be the object to be attained, and that nothing local or special should absorb the funds or the energies of the Institution. Such things as could and would be done by other agencies were not to be attempted by the Smithsonian, but rather the things worth doing, which, except for the aid given by the Institution, could not get done at all. Those branches of activity prescribed by the act creating the Institution, but which tended to outgrow a strict subordination and absorb undue proportions of the income, were rigorously pruned and sternly repressed. It seems strange to recall a time when free speech did not exist in the capital of the nation, yet it is within my memory when so great was the irritability of the proslavery element in Washington that Professor Henry, with an eye single to the welfare of his beloved Institution, felt it necessary to warn foreign men of science invited to work or lecture here that certain topics must not be touched upon, directly or indirectly. Professor Henry knew that the resources of the Smithsonian could not support a great museum or a great library and still carry out the promotion of science in the wider sense, which was his ideal aim. He wished for a national museum and a national library, but only at national expense. He approved of the far-reaching explorations and collections which the genius of Professor Baird initiated and by untiring labors promoted, but he did not wish the enormous mass of material thus brought together to be a charge upon the slender funds of the Institution. His policy was to distribute to other institutions of learning, museums, and colleges, as soon as worked up, everything except a typical series of the specimens, thus at once promoting research at other points and economizing space and the expenses of preservation. Arrangements were made with naturalists all over the country by which material in their special lines of research was shipped to them as soon as received, to remain indefinitely, until reported upon. The same policy led to placing in the Corcoran Gallery of Art such objects of art spared by the

great fire of 1865 as that establishment could utilize; and to the deposit in the Library of Congress of the great collection of scientific books and periodicals, which was rapidly outgrowing all the limits set by his prudence. In his determination that nothing should be permitted to divert the progress of the Institution from the lines laid down for it, Professor Henry thought no labor too great, no personal supervision too minute, no just economy too paltry. Who shall say that his lofty purposes and unceasing struggles have not been justified by his success?

Meanwhile Baird's ambitions and endeavors were leading toward the establishment of a national museum in fact, if not in name. Multitudinous expeditions were set on foot for Pacific railway routes, military surveys, the coast survey, the routes for an Isthmian canal, the exploration of the Hudson Bay territory, Lower California, and Alaska. From each and all of these a stream of the most precious material for study flowed toward the Smithsonian Institution. The natural sciences all over the world were enriched by the countercurrent of published researches which poured from those Elizabethan towers. A bevy of students, poor in purse, but rich in enthusiasm, in energy and devotion, found shelter there. From time to time, as opportunities came, they sallied forth, one by one, to the ends of the earth, bent on enriching the collection and advancing science, in which they usually succeeded.

How difficult in such a case to hold the balance true! To preserve for study what was needed and yet not to exceed the limits imposed by circumstances. To be loyal and true in spirit, as well as in the letter, to the policy of the chief, and yet to hold securely for the future that which the future would need. Yet this task, so perplexing and so difficult, was successfully performed by Baird. He had for Henry an affectionate loyalty and veneration as strong in its way as his devotion to biological research, and which supplied a never-failing and most elevating example to the younger men about him.

The establishment of the Fish Commission with its separate income partly available for research somewhat ameliorated the situation. The establishment of a national museum, as urged by Baird and Henry, became a more familiar idea to Congress and the country. With the Centennial Exposition of 1876, came an opportunity of which Baird was not slow to take advantage. He determined that the exhibition made by the United States should bear testimony to what the Museum could do both in the way of material and in its presentation. The Government made a loan of several millions to the Exposition, which no one then supposed would ever be repaid. Members of the appropriations committee felt quite safe in half jokingly assuring Professor Baird that if the money ever was repaid an appropriation for a National Museum building should not be withheld. The entire staff of the Museum, including several unpaid volunteers, with Goode at their head, gave all their energies for nearly a year to make the Government and

especially the Museum exhibit a success, feeling that the future of the Museum was really at stake. Individuals all over the country were called upon to assist by advice or material in their special lines. Thousands of letters were written and thousands of exhibits gathered. Here Goode had his first training in the arts of exposition, in which he finally became the acknowledged master. Many were the discussions as to system, selection of exhibits, cases, labels, and methods in general. It was indeed a liberal education to those engaged in the work. No test could have been contrived which would better have revealed the strength or weakness, on certain sides, of all engaged in it. Men of whom much was expected failed utterly. Others developed unexpected capacity and talent. The result was a glorious success, acknowledged by all beholders.

After a certain time the Government loan was repaid, and at last the unofficial promises of members of Congress were kept. A sum, pitiably small if compared with the money devoted by most civilized nations to housing their national museums, was appropriated, and, by a lucky chance, an unparalleled depression in the iron trade enabled contracts to be made to the great advantage of the Government. A building without any architectural pretensions, but giving light and floor space at a lower cost than in any other permanent structure of equal size ever erected by the United States, was finally put up, a new organization effected, and at last the National Museum possessed a local habitation and a name. The direction of its activities, under the supervision of Professor Baird, was placed in Goode's hands, and his career as a Museum administrator officially began.

It may be thought that the preceding remarks have included very little about Goode and a great deal about other matters. This is true; but no account of the man and his activities would be adequate which omitted a delineation of the struggles, fears, and hopes of which, in his position, he was the natural heir. A great institution is not created; it is built up. With the mortar of its foundations is mixed the blood and sweat of the builders. Something of the very soul of its architect springs with its pinnacles toward the heavens. The capacity for administration may be inborn, the professional knowledge must be earned. These truths are singularly ignored, even by those who should know better. In fact our people, even those who have much advanced the cause of education, and those who have won repute in the fields of politics or business, have not wholly shaken off the provincial notion that a museum is a sort of toy which an intelligent window-dresser might be competent to manage. The realization of the fact that museum administration is a profession, as arduous as that of medicine or law, seems to be confined almost entirely to those who have actually been devoting their lives to it. That in the case of a national museum, as a sort of general clearing house of national activities in science, and the chief arena of international scientific reciprocity, still wider knowledge of men and their work, a still broader mental horizon, and infinite tact and patience are urgently required, is still less appreciated.

It is true that every administrator must learn and grow with the progress of his work; but that the work should be put into the hands of total inexperience, as is frequently suggested, is like insisting that all our genealogies should be traced from Adam and Eve.

The relations which Goode bore to the scientific activity of the country and less directly to that of the world are best understood through a sketch of Museum administration in the concrete. We may begin with conditions in such an institution itself.

It is hardly true, as I have heard it somewhat broadly stated by one of the uninitiated, that "scientific men are all cranks," though this estimate is by no means without its supporters. Yet it can not be denied that there is something out of the common and, to the average citizen, peculiar in the mental constitution which leads to the adoption of a profession which offers no pecuniary reward at all adequate to the required exertion; which, in this country at least, extends little hope of discrimination from quacks and charlatans adept at attracting public notice; in which the modest prizes are few and far between, promotion problematical; where the worker must congratulate himself if he is able to support and educate his family without actual privation, and must find his reward, if at all, in the consciousness of work well done and the esteem of a few contemporary toilers. Such a mental constitution, I repeat, does have in it something different from that of the ordinary mind and something which the average man finds difficult to reconcile with his idea of common sense. Only the other day I heard of a conscientious guardian of an orphan with a small competence, who refused to allow the boy to follow his natural bent and become a naturalist, on the ground that it would be a dereliction of duty if the guardian permitted his ward to enter upon a career in which the rewards are so few and financial success so doubtful.

Those in whom the bent is so strong as to defy all obstacles not infrequently are somewhat one-sided people. They feel, as they ought to feel, that their own specialty is the most important of the many domains of science. Since they have not hesitated at any sacrifice to devote themselves to it, it is not unnatural that they should feel that from colaborers in science, support, encouragement, and a sufficient allotment from the common fund are justly due. In a great museum this common fund or income is never sufficient to meet all demands. The director must be more than human who can apportion disappointment without exciting disapproval. Yet in the midst of annual expressions of regret I never heard Goode's justice or kindly feeling questioned.

It sometimes happens, as a scientist is human, that the weaknesses or faults of our common humanity find a lodgment with him, possibly even to the point where a love of science seems the only thread withholding him from utter shipwreck. The kindly and generous nature of Professor Baird, joined to a certain practical shrewdness, enabled him to utilize and succor, from time to time, such waifs, putting them where the redeeming virtue might exert its wholesome influence and the broken soul might

feel the comfort, in hours of remorse, that, after all, its life had not been wholly wasted. Baird's example was not forgotten by his pupil.

Lest engrossment in a specialty breed indifference to progress in common, it is of the highest importance that the leader in a band of workers shall use every opportunity of emphasizing their joint responsibility to science and to the public, for whose entertainment and instruction the museum is supported by public funds. This duty Goode never forgot, and by example and precept he continually stimulated each and every one to his best efforts.

The experiments in methods of preservation and exhibition, by which the best results are reached, are of interest and value to the whole scientific community. It often happens that only through a long series of failures, all more or less costly, is success at last attained. Were each museum, private or public, obliged to run the whole gamut of experiment, the losses would be irreparable and the cost enormous. In this direction, as did Baird in his time, Goode developed a particular genius, and his successes placed him early in his career in the very front rank, if not at the virtual head, of all Museum experts. The results of this work were placed freely at the disposition of all interested, and nearly all museums in this country and many abroad have materially profited by the skill and ingenuity thus displayed. It is highly probable, so modest was the originator, that few of those whose work is thus assisted have any definite idea of the source from which the facilities came.

Looking beyond the Museum itself and considering its external relations, we find that naturalists and anthropologists all over the country are in the habit of appealing to the Director or staff of the National Museum for scientific information, advice, or needed assistance in all sorts of directions. In many cases the question is not simple, but one requiring the utmost consideration and delicacy.

The needs or requests of different institutions or persons are not infrequently conflicting, and the decision may be far-reaching. The competition between different workers or institutions in the same field is liable, unless treated with great tact, to rouse antagonisms. Small societies sometimes inadvisedly identify themselves with the opinions or theories of some individual member, and if the latter prove contestable the amount of human nature which may be displayed is astonishing. It has happened that such an organization, in a fit of pique, has showered abusive pamphlets over the inhabited universe. Rival candidates for coveted posts resort to the most ingenious methods for securing indorsement contrary to the rules of the institution. Occasions arise when advice is sought with seriousness and given with anxiety, as a matter of duty. In short, it is required of the head of the Museum to have a general knowledge of the character, responsibility, and reliability of all the professional and most of the amateur scientific workers of the country and of the character and interrelations of all the more or less scientific

societies, not only for the use and benefit of the outsiders, but for the safety and protection of the Museum itself. While no one could exceed Professor Baird in the breadth and accuracy of his information on such topics, yet the traditions he handed down and Goode's own wide knowledge of the younger generation gave him satisfactory qualifications of this most necessary and special kind.

Leaving the ostensibly scientific, not the least embarrassing duty the head of the Museum has to perform is the answering of letters from the people at large. Here the variety ranges from the intelligent seeker for an explanation of some observed phenomenon, to the fraudulent scheme of some rascal for securing books or specimens by false pretenses. The most ignorant are often the most confident in their own explanation of something which has temporarily puzzled them ; nevertheless they seek official sanction and approval. Cranks write letters in blue ink, the nouns filled in with red. So and so announces that the Apollonian Library, upon whose letter head he writes, is desirous of a full set of the publications and, being the only library in a large region round about, should undoubtedly receive them ; and signs himself librarian. It is known to the initiated that the signer is himself the Apollonian Library and its only reader. Ill-spelled letters tell of natural curiosities, marvelous to behold, sometimes for sale, sometimes to be freely donated. It would be a great mistake to suppose that these letters may be treated with scorn, or ignored. It has often happened that the layman in his blindness has stumbled upon something good. At any rate he is one of the great American people whose taxes support the Museum, and is entitled to courtesy and illumination if it can be furnished. At all events, it will be clear to you that special knowledge, tact, and kindliness will not be superfluous in the treatment of the daily mass of correspondence.

I have tried to throw a little light on the difficulties and problems our dear friend met and solved so well. Illustrations might be greatly multiplied did time permit. What has been said, I trust, is enough to show that no ordinary man could have done this work (and much else) and yet have left behind him no antagonisms, no memories of failure, no hint of insufficiency, associated with his name. He is remembered as one never weary of welldoing; who reached the heights, though ever aiming higher; whose example stimulated and whose history will prove a lasting inspiration.