

JOHN WESLEY POWELL.

VI. THE PROMOTOR OF RESEARCH.

BY G. K. GILBERT.

THE preceding chapter outlines the results of Powell's personal investigations as they appear in his published writings. The story would be but half told if no mention were made of the results of his labors as the administrator of scientific trusts. The investigator is apt to be a specialist, concentrating his attention on a single subject to the practical exclusion of all others, and by that specialisation incapacitated for executive work. Powell, however, is eminently a man of affairs. Whether his generalisations and theories are sound and true is a question that may be left to the verdict of posterity, but his contemporaries have recognised and declared his eminent ability as an organiser and administrator of scientific work. A multitude of minor responsibilities may be here neglected, but four important trusts must be mentioned, each involving either the direction or the practical guidance of a body of scientific work. The Survey of the Colorado River, which expanded from 1872 to 1879 into the Survey of the Rocky Mountain Region, gradually developed three corps of scientific assistants—a corps of topographers, a corps of geologists, and a corps of ethnologists. The ethnologic work, although but slightly endowed, grew to such importance that in one of the later years of the Survey Professor Henry, Secretary of the Smithsonian Institution, placed at Powell's disposal the accumulated ethnographic material in the archives of the Smithsonian and gave him direction of all ethnographic work carried on in coöperation with the Institution.

When the surveys were reorganised in 1879 the ethnologic work was continued by the constitution of a Bureau of Ethnology, and Powell has been continuously the Director of that Bureau. The Survey of the Rocky Mountain Region published four quarto

volumes entitled *Contributions to the North American Ethnology*, and its successor has printed nineteen thick annual reports, four quarto monographs, and twenty-five bulletins.

In 1879 a few citizens of Washington proposed to organise an archæologic society, and to this end called a meeting of scientific men of the city. Members of the Bureau of Ethnology, foreseeing the growth of Washington as a scientific center and the eventual need of a society whose scope should include not only prehistoric but living man, thought it unfortunate that the ground should be partially occupied by an association restricted to the narrower view, and invoked the aid of their friends to effect a change in the character of the new project. Their endeavor was successful, and the meeting called to organise a society of archæology created instead a society of anthropology. Powell was chosen president, and held the office until 1882, when he retired temporarily, on account of ill health. He was re-elected in 1884, and in succeeding years until 1887, making a total incumbency of seven years.

From 1881 to 1894 he was also Director of the United States Geological Survey.

Before the direction of ethnologic work fell into Powell's hands the subject already engaged the attention, partial or entire, of a large number of persons throughout the United States. Missionaries among the Indians studied their languages for purposes of communication, and prepared vocabularies. They sometimes made manuscript record also of Indian traditions and mythic stories. Army officers on frontier posts and other persons whose occupations brought them in contact with Indians, were led by curiosity or by scientific tastes to collect the various articles employed and produced in their arts and to make note of their ceremonies and other customs. The stone implements and shards of pottery so widely scattered over the surface of the land, the mounds of the East and the Pueblo ruins of the West, attracted much attention and were the theme of a fragmentary literature. Here and there a philologist or an ethnologist gave to the subject systematic study, but most of the observation was desultory and of a dilettante rather than scientific character. Since the days of the ethnologist Galatin the Smithsonian Institution had been a depository for recorded vocabularies of Indian languages and various descriptive manuscripts, and some of these it had published. It was Powell's work to organise this scattered and desultory observation, to give it a systematic plan with definite ends in view, to inform it with scientific method, and to give it a needed stimulus by making provision

for the publication of results. The funds granted him by Congress from time to time were not as a rule expended on salaries, although the Bureau has slowly acquired a permanent corps, but were given in small grants to scattered workers as a means of increasing their facilities. A large number of persons who were already interested in ethnologic work were provided with the money necessary to meet the expenses of specified undertakings, or payments were made for manuscripts prepared. Others whose occupations afforded them leisure and local opportunity were enlisted in the work and received nominal compensation, not amounting to a salary.

The class of observation to which most attention was given was linguistic. The *Introduction to the Study of Indian Languages* contained not only a code of instructions but an elaborate set of blanks for the recording of Indian vocabularies; this was widely distributed, and with it went an alphabet specially prepared for the purpose, thus enabling the observers to record in a uniform manner the sounds of Indian tongues, many of which are foreign not only to the English but to all European languages. The work of the permanent assistants of the Bureau has been of two kinds: First, a number of students of special branches, largely linguistic, have been enabled through the funds of the Bureau to devote their entire time to research and to extend their studies to minute details. Second, there have been carried forward works of generalisation and correlation transcending the means of most private individuals and possibly transcending the patience of the unsalaried. One of these is the compilation of a *Bibliography of North American Linguistics*—the segregation once for all of the references to books required by the students who would monograph the subject of an Indian tongue. Another general work is the classification of linguistic stocks and the compilation of a synonymy or dictionary of all the names that have been used to designate Indian languages or Indian tribes. The number of Indian languages is very large, but certain groups of these are shown, by the existence of many common words or words closely related, to be descendants of the same original tongue. The members of such a group are said to belong to the same linguistic stock, and between two linguistic stocks there are no similarities indicative of common origin. The number of linguistic stocks in North America north of Mexico now for the first time approximately known is about sixty.

All of the work of the Bureau was impregnated with the philosophic views of its chief. The work he initiated was carried on by methods of his formulation, and the larger share of the work he

fostered and endowed had the continuous benefit of his counsel and suggestion.

The influence of his conversation and informal discussion was equally perceptible in the proceedings of the Anthropological Society. Rarely was a paper presented in whose discussion he did not participate; and it was his function, as presiding officer, to point out the bearing of the specific contribution on the larger philosophy of the subject—to assign it its place in the scientific scheme. To him is largely due the tone of the society—the prevailing dignity and earnestness of its proceedings, and the rareness of those laborious records of trivial observations whose discussion has been caricatured in the proceedings of the Pickwick Club. The work of the Society and that of the Bureau are closely related, for the Society is the arena for the discussion of the problems developed in the work of the Bureau; but the Society includes also a large independent membership and discusses a broader range of subjects.

When the Geological Survey was placed in charge of Major Powell, its scientific work was divided chiefly on a geographic basis. A number of geographic districts had been constituted, and each was in charge of a geologist-in-chief who directed all of the work within the district, including general and economic geology, topography, chemistry, etc. Powell made no abrupt change, but he gradually substituted for this a radically different organisation, one in which a geologist versed in a special branch of the subject superintended work only in that department in which all geographic work was under a single chief of division, in which paleontology had a division by itself, with subdivisions delimited by biotic and geologic lines, in which chemistry, lithology, glacial geology, and various other special topics were assigned to corps or individuals, each of whom had the territory of the United States as his field. Geographic lines were still used for the subdivision of the two principal bodies of work, the geography and the general or stratigraphic geology; but in all other respects the kind of work to be done was the basis of organisation.

The Geological Survey is a large government bureau. In most of the bureaus at Washington it is the function of the chiefs to decide questions that arise. The business they transact originates elsewhere, and their action is magisterial or judicial. As chief of the Geological Survey Powell too performed these functions, but he likewise took the initiative to an exceptional extent. Details were arranged by his chiefs of divisions, but the general plans were

his, and he was personally conversant with the nature and tendencies of all the work of research. Partly by explicit instructions, but to a greater extent by suggestion, he furnished hypotheses to younger men, and thus guided their work.

The financial, clerical, and other accessory work of the Survey was as thoroughly organized, as the scientific work and its business methods contributed greatly to the confidence of legislators in its chief. In his endeavors to secure desired legislation in regard to scientific research he was brought in constant relation with Members of Congress, and their reliance on his judgment and resources was attested by frequent official requests for information on subjects not intimately related to the Survey work. Powell's communications in response to such inquiries and his testimony before committees of investigation constitute a body of literature comparable in bulk with his scientific writings. Though it is the business of Congress to enact only general laws, it is nevertheless its practice to diminish the functions of ill-conducted bureaus and increase the powers of efficient bureau officers. During Powell's administration the field of work of the Geological Survey, at first restricted to the Western Territories, was extended to the entire United States, and the amount of money appropriated for the conduct of its operations was increased from \$150,000 in 1881 to \$500,000 in 1894.

Yet another institution of Washington is partially indebted to Powell for its existence. He was one of the first to suggest and advocate the foundation of a social club for the use of the scientific men, and the preliminary meetings were held at his residence. The reorganization of western surveys was then in progress, the jealousies of rival factions being at their height, and there were some who held aloof, suspicious of a deep-laid plot. But the club was born, grew, and prospered nevertheless, and by affording Washington scientists an opportunity for frequent intercourse under pleasant auspices, has contributed greatly to the abolition of jealousy and suspicion and the promotion of harmony and coöperation. Washington is as truly the scientific center of the United States as it is the political center, though in a different sense, and the solidarity of its scientific community is of great value as an aid in securing the generous endowment and the wise administration of such departments of research as may legitimately be undertaken by the Government.

It is customary for biographers of scientific men to recite by way of peroration the learned societies to whose officers or membership they have been elected, the academic degrees conferred on

them, and the various testimonials and honors by which their scientific rank has been acknowledged. Powell has not been neglected in these respects; but as his friend I do not feel it my privilege, as it certainly is not my desire, to do that which would have offended his democratic taste. In his estimation the wearing of medals, decorations, and insignia savored of the creation of an aristocracy of science; from my standpoint as a biographer a catalogue of honors conferred would belittle my theme. Some men are magnified by titles and diplomas, by medals and ribbons; others do not need them. On Powell's true honor list are the Bureau of Ethology, the United States Geological Survey, the base-level of erosion, and a philosophy of human evolution.