

A Scientific Tour

Asa Gray, one of the greatest scientists of the nineteenth century, had "cultivated the field of North American botany, with some assiduity, for more than forty years". He had reviewed the vegetable hosts, and assigned to no small number of them their names and their places in the botanical world, but so far as the West and the Middle West were concerned, he had been to a great extent a "closet botanist". Not until he was sixty-one had he seen the Mississippi River or "set foot upon a prairie". Then he journeyed westward across the Mississippi and across the continent to marvel at the gigantic redwoods of California and to study the botanical beauties and wonders of the region west of the Father of Waters.

It was autumn 1872 when Professor Gray returned. The American Association for the Advancement of Science was meeting at Dubuque. As president of the Association and fired with a new zeal for scientific field work, he stopped in Iowa to address the annual meeting and to inspire his fellow scientists to renewed and extended activities in the field of botanical research.

In addressing this meeting Gray borrowed a

simile from his own profession and likened his office to a biennial plant. The president, he said, "flourishes for the year in which he comes into existence as presiding officer. When the second year comes round, he is expected to blossom out in an address and disappear." Those who heard him were quick to catch his meaning, but they were aware that the fruit of a flower perpetuates its kind. It does not completely disappear. In like manner, they resolved that the flowering fruit of so great a scholar — the inspiration of the central figure in the galaxy of scientists — should not be lost.

At the close of the meeting, interest in scientific research and in excursions for botanical study had received a tremendous impulse. Nor was there a lack of aggressive action. When it was suggested that Iowa afforded a rich field of study and that a pilgrimage across the fertile prairies would pay high dividends in scientific knowledge, there was a quick response. Almost immediately a scientific excursion was arranged to cross the State from Dubuque to Sioux City and return.

The exploring party consisted of about fifty persons including many prominent and active members of the Association, though Gray apparently was not among the number, and several ladies who had been attending the meeting at Dubuque.

There were five or six state geologists, as well as several eminent botanists, in the group — all interested in the study of natural history and in the pursuits of science. Transportation was provided by the Illinois Central Railroad, and many inducements were presented to make the excursion both interesting and profitable to members of the party.

The expedition was under the direction of Dr. C. A. White, State Geologist and Professor of Geology at the State University of Iowa. Familiar with the geography and geology of the State, its rivers, lakes, mines, quarries, and prairies, he was able to give to members of the party valuable information upon a wide variety of subjects. Indeed, it is reported that "in point of fact, Dr. White *lectured* to his attentive and interested audience during the entire journey of two days across the State", and upon the return trip as far as Fort Dodge, where he left the party.

No unusual occurrences or incidents of travel were reported during the first part of the journey. Members of the party were impressed, however, with the wide expanse of unbroken prairie. William W. Wheildon in writing upon this subject referred to "this new and peculiar country" as being destitute of hills and vales, and forests and rocks — "those features which in New England characterize the landscape".

Fort Dodge and the surrounding country afforded to the explorers "an extremely interesting region, both historically and scientifically". The citizens of Fort Dodge were "most generous and hospitable" in receiving and entertaining the visiting scientists. In the evening a reception was held, and the following morning was devoted to a scientific exploration of the vicinity. Mines and quarries, the forest and prairie and river were all examined. Carriages were provided by local residents for all members of the expedition and some of the more interested accompanied the party on its explorations. Among the places visited were the limestone quarries and kilns, the coal mines, the banks of the Des Moines River, Lizard Creek, and "chiefest of all" the famous gypsum quarries, widely known as "the birthplace of that audacious imposition, the Cardiff Giant".

While in this vicinity, Dr. White interested the party in a description of the gypsum fields which were recognized as the largest and most valuable in the country, and the only beds of any economic value in this or the adjoining States. Fort Dodge gypsum even in those early days was known for "its remarkable purity and freedom from grit". Members of the party who were not familiar with the properties and characteristics of gypsum were interested in the fact that this peculiar Iowa prod-

uct may be hewn with an axe or a hatchet, sawed with a common wood-saw, and that blasting holes, when necessary, may be made in it with a carpenter's auger. Their interest was increased to amazement when they were told that as a building material gypsum displays qualities of great endurance, for "though it may be cut and defaced with a penknife, it retains its beauty of coloring and its durability nearly as well as marble".

Returning from the gypsum quarries, the party proceeded on its way to Sioux City. The route taken led the explorers "over the open and apparently boundless prairie, unbroken by an elevation and almost unrelieved by tree or shrub, save the rank weeds of the prairie". For more than fifty miles the railroad track "was as straight as an arrow". The prairie was not entirely new to the party "excepting in its apparent boundlessness; but still it seemed strange to those in whose minds 'the idea of a wilderness was indissolubly connected with that of a forest'".

The party, interested in the scenery and in the events and incidents of the trip, arrived at Sioux City at 10:15 P. M., only to learn that they were more than six hours behind schedule. A public reception had been planned for members of the group at four o'clock in the afternoon, and a public meeting was scheduled for the evening. Both

of these, with whatever benefits might have accrued, were lost both to the members of the party and to the citizens who planned the meetings.

Accommodations for the night were provided at the Hubbard House — “a large and princely hotel”. On the following morning members of the party were divided. Various groups “sallied out in different directions around the city, and the whole neighborhood was visited”. One group crossed the Big Sioux River into the Territory of Dakota, another crossed the Missouri into Nebraska. Some of the party crossed the Floyd River and looked in the distance upon the bluff below the city where Sergeant Floyd was buried, although they did not visit that point. Much interest was shown in viewing the bluffs along the river. The geologists spent some time visiting the cretaceous formation in that region, while the ichthyologists obtained from the river a number of specimens of small fish, and captured not a few moths and bugs.

In the evening members of the party assembled in the drawing rooms of the Hubbard House, compared notes of the day's exploits, and received callers from about the city. At an early hour the company was called to order by Dr. White for a business session. A resolution was adopted thanking officials of the Illinois Central Railroad

for free tickets from Dubuque to Sioux City and return. Thanks were also expressed to the citizens of Sioux City "for the attention and kindness" bestowed upon members of the American Association for the Advancement of Science, and their friends and associates. After the conclusion of the business session the remainder of the evening was spent in a social way.

Upon the return trip, the scientists stopped again at Fort Dodge. The two following days were devoted to a side trip to Dakota City and Springvale (now Humboldt). At Springvale the scientists visited Humboldt College and in the evening were edified and entertained by a lecture on "Fishes". The speaker presented his subject in a popular and interesting manner — telling many "fish stories" and illustrating his talk "with living specimens" taken from the Des Moines River.

While the party was at Dakota City members of the group visited quarries and lime kilns, and in the evening attended a lecture on the "Origin of the Races of Men". The speaker supported the biblical account of creation and expressed views which were adverse to the Darwinian speculations of that day. From Dakota City the party returned to Dubuque where the expedition ended.

Thus, in a little more than a week of travel and entertainment, a group of prominent scientists had

studied the open book of nature as they crossed and recrossed a great prairie State. They had visited many localities of historical and scientific interest. They had measured, as far as the eye could reach, "the almost boundless beauties of the prairies", and had not infrequently marvelled at the richness of the soil.

The journey had sprung from the influence of Asa Gray. Like a biennial plant he had "blossomed out" in an address, and, like the fragrance of the flower, the inspiration of his example had spread to others, teaching what some of them had scarcely dreamed before. Iowa is not a wide wilderness, but a great and growing agricultural State — a veritable laboratory for the scientist, where, in the flowers and the trees, on the prairies and among the hills, the lessons of nature are written so clearly that "he who runs may read".

J. A. SWISHER