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THE CENTURY MAGAZINE has done an excellent thing in printing two diverse views of manual training side by side in its January issue. The expression of the two views is typical of the discussions now so prominent on this subject, and illustrates excellently why the movement in favor of manual training is so strong, and why the opposition to it is so weak. Superintendent MacAlister of Philadelphia states succinctly just what is being done in that city in the line of manual training. This summary is clear and comprehensive; his own approval of it, based on experience, is unqualified; and he tells us that manual training has won the confidence of the community. Superintendent Dutton of New Haven follows with a brief statement of the work in his city, and states that "the effect of these several forms of industrial effort upon teaching generally is good." Both of these gentlemen deal with facts with which they are perfectly familiar, and their favorable judgment upon manual training, while unqualified, is carefully and thoughtfully expressed. The gentleman who opposes manual training is Superintendent Marble of Worcester, Mass. His argument, if such it can be called, is an hysterical juggling, with more or less crude theories, and not a single fact is cited throughout his paper. An approach to a fact is the statement that a phase of manual training was tried fifty years ago, and proved a dead failure. This, however, is not true; nor, if it were, would it prove what Mr. Marble thinks it does. Manual training, as now comprehended and expounded, is not more than a dozen years old at most, and the most cursory knowledge of educational history should have acquainted Mr. Marble with this fact. The same writer talks about "the protestations of those self-constituted philanthropists," "the overthrow or subversion of the public school," "that virile quality of thought and mental power which it is the province of education to beget," "the materialistic tendency of manual training," and so on, and succeeds in demonstrating only that he is in absolute ignorance of what manual training is, and of what it is intended to accomplish. When we read a paper such as this, coming from a professed educator, it is the more easy to understand and to condone the crude speculations and outrageous theories concerning education that so often emanate from persons in no way connected with the school system of the country.

## FERDINAND VANDEVEER HAYDEN.

PROF. FERDINAND VANDEVEER HAYDEN, M.D., Ph.D., LL.D., who died in Philadelphia on the morning of Dec. 22, was born in Westfield, Mass., Sept. 7, 1829. Early in life he went to Ohio. In 1850 he was graduated from Oberlin College, and soon afterward read medicine at Albany, N.Y., receiving his degree from the Albany Medical College in 1853. He did not begin the practice of medicine, but in the spring of the year of his graduation was sent by Prof. James Hall of Albany, with Mr. F. B. Meek, to visit the Bad Lands of White River, to make collections of the cretaceous and tertiary fossils of that region. This was the beginning of his explorations of the West, which continued with little interruption for more than thirty years.

In the spring of 1854, Dr. Hayden returned to the Upper Mis-

souri region, and spent two years in exploring it, mainly at his own expense, although he was aided a portion of the time by gentlemen connected with the American Fur Company. During these two years he traversed the Missouri River to Fort Benton, and the Yellowstone to the mouth of the Big Horn River, and explored considerable portions of the Bad Lands of White River and other districts not immediately bordering upon the Missouri. The large collections of fossils he made, were given partly to the Academy of Sciences in St. Louis, and partly to the Academy of Natural Sciences of Philadelphia.

As one of the members of the Geological Survey has recently said, these collections furnished the data for profitable scientific investigation; and the researches then begun mark the commencement of the epoch of true geologic investigation of our Great West. These collections attracted the attention of the officers of the Smithsonian Institution; and in February, 1856, Dr. Hayden was employed by Lieut. G. K. Warren, of the United States Topographical Engineers, to make a report upon the region he had explored; so that the results of his labors during the three previous years were utilized by the government. This report was made in March of the same year, and in May following he was appointed geologist on the staff of Lieutenant Warren, who was then engaged in making a reconnaissance of the North-west. He continued in this position until 1859, when he was appointed naturalist and surgeon to the expedition for the exploration of the Yellowstone and Missouri Rivers, by Capt. William F. Reynolds of the Corps of Engineers of the United States Army, with whom he remained until 1862. The results of his work while with Lieutenant Warren were published in a preliminary report of the War Department, and in several articles in the 'Proceedings of the Academy of Natural Sciences of Philadelphia for the Years 1857 and 1858,' and more fully in a memoir on the geology and natural history of the Upper Missouri, published in the 'Transactions of the American Philosophical Society,' Philadelphia, 1862. This paper also included chapters on the mammals, birds, reptiles, fishes, and recent mollusca of the region in which his geological investigations were carried on. During this time also he found time to make notes upon the languages and customs of the Indian tribes with which he came in contact. These notes were embodied in 'Contributions to the Ethnography and Philology of the Indian Tribes of the Missouri River,' published in the 'Transactions of the American Philosophical Society,' Philadelphia, 1862; in a 'Sketch of the Mandan Indians, with some Observations illustrating the Grammatical Structure of their Language,' published in the *American Journal of Science* in 1862; and in 'Brief Notes on the Pawnee, Winnebago, and Omaha Languages,' published in the 'Proceedings of the American Philosophical Society,' Philadelphia, 1869.

In May, 1862, Dr. Hayden was appointed acting-assistant surgeon of volunteers by the surgeon-general of the United States Army, and was sent to Satterlee Hospital in Philadelphia. He was confirmed by the United States Senate as assistant-surgeon and full surgeon of volunteers on the same day (Feb. 19, 1863), and sent to Beaufort, S.C., as chief medical officer, where he remained for one year, when he was ordered to Washington as assistant medical inspector of the Department of Washington. On the 19th of February, 1864, he was sent to Winchester, Va., as chief medical officer of the army in the Shenandoah valley. Here he remained until May, 1865, when he resigned, and was brevetted lieutenant-colonel for meritorious services during the war. During the remainder of the year 1865 he was employed in work at the Smithsonian Institution. It was during this year that he was elected professor of geology and mineralogy in the University of Penn-