time. But Corsica had charmed him; he revisited that romantic isle the following summer, and this time carried back the famous Mouflon, hero of great adventures, the telling of which in print to the invisible public can not, however, compare with the oral recital, not many years after the event, to a group of admiring boys around a camp fire in the woods of upper Michigan.

Let no one imagine that a glance over these selected items can replace the reading of the delightful autobiography which they introduce. What is here too briefly told is only a curtain raiser to the kaleidoscopic life led by this fascinating boy after he reached manhood. No abstract can do justice to his thrilling adventures as a mining engineer in Arizona—amazing revelations of the conditions that existed when there really was a western frontier; had Beadle, a famout littérateur of that time, known them, they would have made him despair over the poverty of his dime-novel inventions. Mining and smelting in Arizona were followed by geological explorations in Japan and China; it was in that epoch that our hero during a smallpox delirium, playfully fired his revolver, which had been, Arizona-fashion, left handy under the mattress, at his Chinese nurse, who thereupon selfishly resigned his post. The winter journey homeward across Siberia in a sleigh, during which, as a chapter-heading might put it, "A whiff of cigarette smoke passes the time o'day," is not likely to be repeated by the modern traveler, who finds even the Trans-Baikal express too slow. Then came a period of conventional life in New York where some commonplace years were passed; and this was followed by a humdrum engagement as professor of mining at Harvard; but very little did the professorial Pumpelly of those days resemble the customary philosopher plodding across the Common to a lecture, or the expectable mathematician trudging through the Delta after a faculty meeting. Indeed, it was credibly reported at the time that a street-urchin—a "mucker" in the slang of Harvard Square—on seeing this strange apparition in felt hat, long flowing beard, velveteen suit and riding boots, cantering along Kirkland Street, stopped in astonishment, exclaiming: "Golly, what a swell!"

Naturally enough the cantering gait, which so well suited the apparition, soon carried him out of Cambridge and into all parts of the country, as mining engineer, state geologist, director of the Northern Transcontinental Survey, and otherwise; until in 1903–04 he welcomed the approach of old age by conducting a rare journey of exploration, a Carnegie-Institution search for primitive man, into central Asia. Ten years later an excursion was made to Arizona: in the shadow of the loss of wife and mother, the father with son and daughters, who left their own children at home to make themselves boy and girls again, visited the frontier of 1860, where desperados then dwelt and where railroads, hotels and automobiles now flourish locally in the wide arid spaces. "Incidents" occurred of course, such as the near-loss of a toe, and a possible death from thirst in a dry stream bed; but these little affairs did not prevent a deep appreciation of the great empty wilderness with its glaring days of vast distances, and its calm nights below the starlit vault of the cloudless heavens. And from the desert the septuagenarian, once the boy pirate of Owego, the knight errant of Corsica, the student of Freiberg, the Arizona miner, the traveler in the Far East, the expert geological surveyor, the archeological explorer, all reaching their culmination in the genial grandfather, returned to his home in Newport to write his "Reminiscences." There his friends now find him in beautiful serenity. There the good wishes of many greatful readers attend him.

W. M. D.

PROFESSOR WILLIAMS AT YALE[1]

CORNELL and Yale are singularly linked in the life of Henry Shaler Williams. Professor Williams was born at Ithaca, graduated from Yale, then returned to Ithaca to teach at

[1] Address by Herbert E. Gregory, representing Yale University at the exercises in memory of Henry Shaler Williams, held at Sage Chapel, Cornell University, October 20, 1918.

Cornell. In 1892 he is again at Yale, returning in 1904 to Cornell, where his life work was finished. Six years of his young manhood were spent at Yale in undergraduate and graduate studies and eight years as professor of geology. Just twice that time was devoted to active service at Cornell. Yale thus shares with Cornell the prestige which comes from a great scientific name, and it is fitting that the two universities should join in commemoration of the life and services of Professor Williams.

The Yale records reveal little of Williams as an undergraduate except that his class work was well done, but it is easy to picture the boy taking walks along the shore of Long Island Sound collecting materials, bringing them home for study, and building the foundations for penetrating observation which later yielded such large returns to science. For Williams, the graduate student, the eager boy already devoted to the search for the hidden meaning of natural phenomena, the distinction between teacher and student broke down. Williams was a member of a small company of sympathetic, earnest men—faculty and students—who together carried on their investigations. The quality of his work as a graduate student is indicated by his thesis for the doctorate, which is not the elaboration of a task assigned by an instructor, but an exhaustive study and a significant contribution to science.

In 1892 Yale was confronted with a difficult problem. It became necessary to select a successor to James D. Dana, America's foremost geologist, and to fill the chair which for nearly a century had been made famous by Silliman and Dana. There were many able geologists in the country, but Professor Dana insisted on a man who combined preeminent attainments with personal character and faith, for the task in hand was not merely to present the facts and principles and methods of geology to successive groups of students, but to stand as an interpreter of the truths of nature. The doctrine of evolution in many quarters appeared to be in conflict with Christian faith. Great truths were to be reconciled and a great man was demanded for the task. Dana chose Professor Williams. And so it came about that after twenty years of distinguished service at Cornell, Williams came to Yale as Silliman professor of geology. He came at the time when the great "Manual of Geology" was taking final form, and took part in the statement of the theory and facts of evolution which brought the teaching of the "Manual" in harmony with the leading scientific thought of the day.

In the early nineties at Yale little room was found in the curriculum for geology. The subject was offered only to juniors and seniors and was so restricted that relatively few men could elect it. The records show that during the first two years of Professor Williams's professorship students elected geology for no particular reason, but soon the class was found to consist of men who were seriously interested in problems of nature and their bearings on life. Williams was not a "popular" teacher, as voted by the senior class. He knew no tricks of the lecture platform and cared little for applause. He found it difficult to formulate dramatic situations and impossible to be dogmatic; his statements were accompanied by qualifications and exceptions. Williams loved the truth as few men love it; he was not content with half truths. The effect of this style of teaching was easily seen in the reaction of the class. At first the teaching seemed confusing; few clear-cut sentences could be written in a note book and cramming for tests on the basis of catch phrases was a very difficult task. Before the end of the course, however, the class realized that under the name of geology they were learning the greatest lesson open to men—the method of weighing evidence and thus arriving at truth. Many students of Williams have duplicated my experience. I came in from classes in philosophy and classics and was surprised at the method and content of the course. I asked myself the question: Is this geology? I had thought that geology was the study of rocks and fossils and valuable minerals, but found it a method of clear thinking—a road to the fundamentals of intellectual and spiritual life.

As presented by Professor Williams geology was not a guide to making money or to the collection and labelling of natural objects. It was a method of adjusting one's thinking to great truths. The many students who came under Williams's influence learned to view the world in a new light. Space and time and matter and living organisms took on new meaning, and somehow assumed a spiritual aspect, so that knowledge was not mere acquisition of facts and methods, but a something which ennobled its possessor. Someway also the search for truths untarnished by mercenary or selfish motives tended to dissolve doubts and to land one on a solid foundation. Teaching which produces such results is a man's work.

Williams exerted a large influence through an advanced course in the philosophy of life and organisms—a course sometimes enrolling a dozen, sometimes one hundred or two hundred, as arrangement of the curriculum allowed choice on the part of students. The teachings of this course became campus discussion, and entered into the thinking of graduates, undergraduates and faculty. Its value was so obvious that after Williams returned to Cornell the course was again organized and is now one of the prominent features of the Yale curriculum.

At Yale we remember Professor Williams as a man wholly unselfish, who would not magnify his importance, who would not fight for what might be considered his rights. He was ready to use poorly equipped laboratories and class rooms and to take undesirable hours for teaching in order to advance the work of others. He freely shared his great fund of knowledge and experience and seemed more interested in the success of others than in his own success. Unselfishness and devotion to truth are the traits we remember in Williams. They characterized his personal relations, his teaching and his writing. More than any man of my acquaintance he exemplified the text: "Ye shall know the truth and the truth shall make ye free."

Williams's work lives in his writings and perhaps even more in his students, but his death is no small loss. Unselfish teachers of truth are rare in any generation.

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SCIENTIFIC EVENTS

AN INSTITUTE OF PHYSICAL AND CHEMICAL RESEARCH FOR JAPAN[1]

THE outbreak of the great war in 1914, which at once cut off the import, mainly from Germany, of dyestuffs, drugs and other products of daily necessity, and at one time almost gave rise to a panic in business, was responsible for producing a profound change in the mental attitude of the government officials, the business men, and, in fact, the whole nation towards science. Those who had in vain been preaching the supreme importance of cultivating science with all activity and pleading for public support now saw at once that the right opportunity presented itself, and lost no time in drawing up a definite plan for an institute of physical and chemical research—a plan which, though not ideal, was deemed to be practical and to meet the most urgent need. This, fortunately, obtained the cordial support of some of the most influential and public-spirited of the business men, particularly of Baron Shibusawa, and afterwards also of the government of which Count Okuma was at the time premier.

According to the plan, which was ultimately adopted, a fund of 5,000,000 yen (10 yen = £1) was to be raised by public subscription. Of this sum just about one half has already been promised, and is being paid in, almost wholly by those who have either commercial or industrial concerns in Tokyo and Yokohoma. The other half is, with good reason, expected to be contributed within a few years by those in Osaka, Kobe and other large and wealthy cities in the southwestern districts. The plan also included an application for a government subvention, and, in accordance with the bill passed by the Diet in its 1915–16 session, the government is giving the institute a subvention of 2,000,000 yen in ten years, whilst H.M.

[1] From *Nature*.