

THE NEW ARMORY OF THE SEVENTY-FIRST REGIMENT, NEW YORK CITY.

The people of New York take great pride in their military organizations. The National Guard of the State of New York has about 5,200 officers and enlisted men in the city of New York. In the last few years the State has made liberal grants for building armories. One of the largest and finest of these is the new armory of the Seventy-first Regiment, situated on Park Avenue and occupying all of the western end of the block which is bounded by 33d and 34th Streets. It is one of the choicest locations in the city. We give two photographic illustrations, one of which is a general perspective view and the other the massive doorway near the corner tower.

The edifice is built of light stone, the style a modified French Gothic. The crenellated towers afford an excellent position for marksmen in case the armory should be attacked. The first floor is occupied by the great drill room, the library, and officers' rooms. On the second floor are the company rooms, which are appropriately decorated. The interior of the armory and its appointments are admirably adapted for their intended use. The armory has just been finished. The architect was J. R. Thomas, of New York, and the contractor Patrick Gallagher.

Interesting Ruins of Cliff Dwellers.

The ruins of a very interesting city of cliff dwellers have recently been discovered among the Bradshaw Mountains of Arizona. It is situated high up on the terraced banks of Willow Canyon, and is estimated to comprise 260 buildings, in a fair state of preservation. Like most of the cities of these strange people it stands in an almost inaccessible position. A series of narrow steps cut in the side of the canyon probably provided means of ascent and descent. Only a few of the buildings have been explored and these were found to contain large quantities of pottery. The most interesting discovery, however, was of a number of crude agricultural instruments. This is the first proof of any value that the cliff dwellers cultivated the soil. The canyon in front of the ruins of the city is one-half a mile in width and gives evidence of having been cultivated at some remote period. A man's skeleton, 4

feet 8 inches in length, was also discovered. An exploring party is being fitted out to make a thorough investigation of the ruins.

Phosphoreted Hydrogen.

A new and extremely simple mode of preparing phosphoreted hydrogen is described by Prof. Retgers

hydrogen does not combine with phosphorus is founded upon some old experiments of the French chemists Fourcroy and Vauquelin, who state that when phosphorus is melted in hydrogen gas, vapor of phosphorus becomes diffused in the hydrogen, and confers upon it the power of ignition in contact with oxygen without any combination between the phosphorus and hydrogen occurring. In view of the great readiness which, as Prof. Retgers has recently shown, warm hydrogen exhibits to unite with free arsenic, it was considered possible that the reason for the non-combination of hydrogen and melted phosphorus might be found in the low melting point (44°) of the latter. Experiments were therefore made with red phosphorus, which, of course, is capable of being raised to a much higher temperature.

When dry hydrogen is led through a glass tube containing red phosphorus and afterward through a wash bottle containing water, practically pure hydrogen is found to escape. Immediately, however, a gas flame is brought under the part of the tube contain-

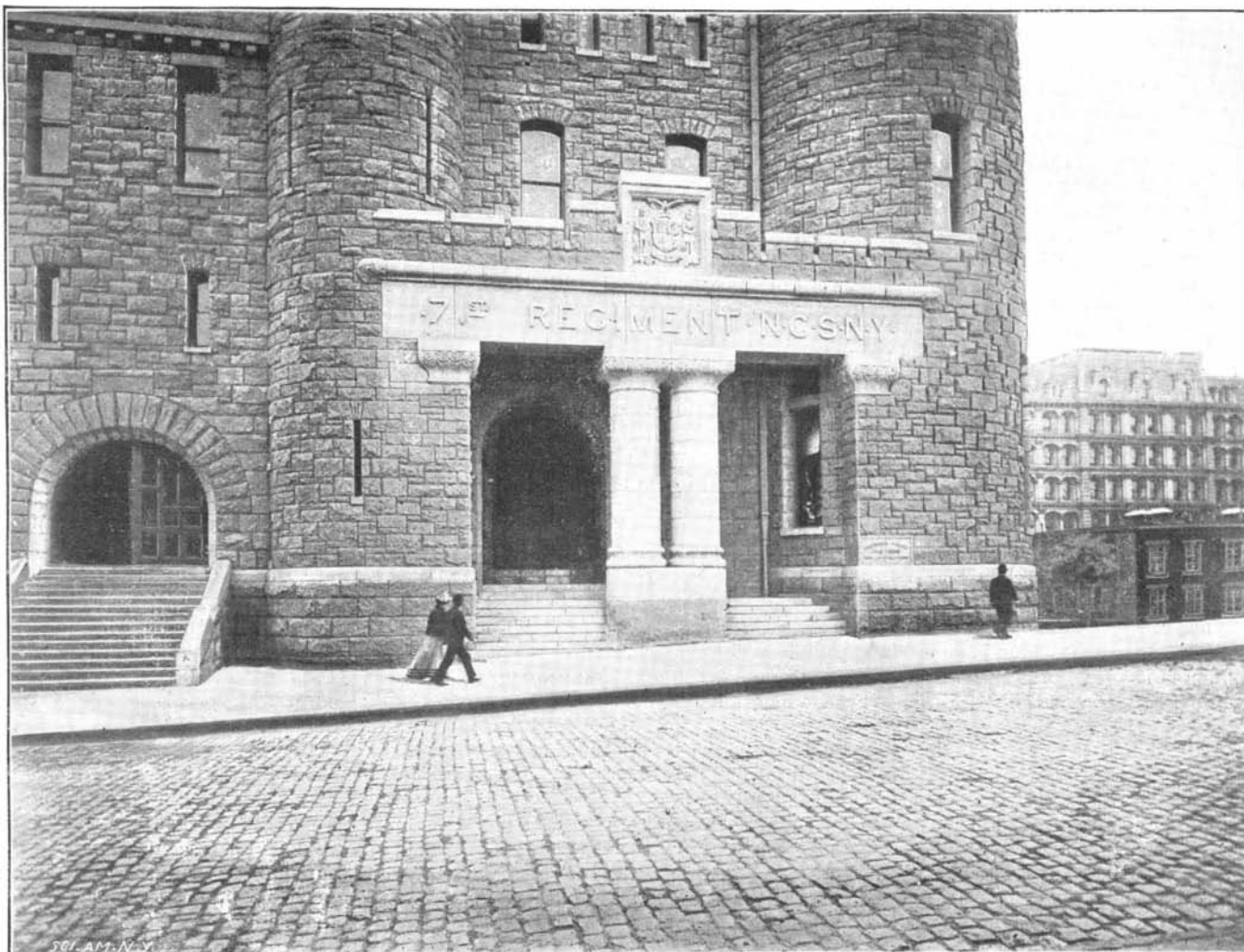
ing the phosphorus, combination occurs, and the gas issuing from the wash bottle at once inflames in the air. The non-spontaneously inflammable gaseous hydride of phosphorus is also therefore accompanied by a smaller quantity of the spontaneously inflammable liquid hydride, and a sufficient quantity of the latter for demonstration may be isolated by leading the vapors through a U tube immersed in a freezing mixture. Moreover, the solid hydride is likewise produced as a yellow deposit near the heated portion of the tube. Upon removing the flame from beneath the tube, the bubbles of escaping gas cease to take fire as they emerge into the air, and are found to consist of almost pure hydrogen.

The production of phosphoreted hydrogen is consequently entirely dependent upon the elevation of the temperature considerably above the melting point of ordinary yellow phosphorus. The new mode of preparation is recommended by Prof. Retgers as being more convenient and elegant than the old-established method of boiling phosphorus in caustic potash, as forming an excellent example of the direct combination of two elements and as furnishing ample demonstration of all three hydrides of phosphorus, the gaseous, liquid and solid.—Nature.



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in the current Zeitschrift fur Anorganische Chemie. After reviewing the usual mode of preparing the gas for demonstration purposes, by heating yellow phosphorus in an aqueous solution of potassium hydrate, and the other more rarely employed methods of preparation—such as by the interaction of calcium phosphide and hydrochloric acid, copper phosphide and potassium cyanide and phosphonium iodide and water—the question of the direct combination of hydrogen and phosphorus is discussed. It appears that the currently accepted idea that ordinary molecular hy-



DOORWAY, ARMORY OF THE SEVENTY-FIRST REGIMENT, NEW YORK.

The Monkey in the Man.

To see the monkey in the man you have only to study the faces, bodies, and habits of babies. Such is the theme of a very interesting article contributed by Mr. S. S. Buckman to the new number of the *Nineteenth Century*. The actions of children are, indeed, he says, like "ancient monuments of prehistoric times. The human infant is an interesting object of scientific research, and even a cross baby should be calmly contemplated by the philosophic mind." The *Westminster Gazette* subjoins a dozen of the numerous illustrations which Mr. Buckman gives to show how survivals of our simian ancestry may be found by any nursery philosopher:

1. Monkeys are snub-nosed (simian). So are babies.
2. Babies have pouch-like cheeks. To judge from ecclesiastical monuments, this characteristic is supposed to be specially angelic. It is really monkey-like. Baby cheeks are the vestiges of cheek pouches, possessed for storing away food, as in *Cercopithecus*, a monkey in which this habit of storing may be observed at the Zoological Gardens, if visitors feed it.
3. At the base of the vertebral column babies have a deep circular depression. This is the mark of the monkey's tail.
4. Babies (as Dr. Louis Robinson has shown) have superior arm power and very short legs. So have monkeys.
5. Babies in catching hold of anything don't use their thumbs, but clasp it between the fingers and palm. This is the action of monkeys in going from bough to bough.
6. A baby can move any of its toes independently, and it can move them one from another so as to make a V between any of them. As it grows older it loses this power and also the power of turning its ankle; but that it has such power over its muscles when young points to ancestors who used their feet more than their hands as organs for picking up small objects; and who relied on their arms and hands for supporting their bodies.
7. Babies go to sleep on their stomachs with their limbs curled up under them—a survival from our four-footed ancestors.
8. Babies are rocked to sleep—an imitation of the swaying to and fro of the branches where our monkey ancestors lived. Even our nursery ditties ("Lullaby baby on the tree top") point back to the arboreal ages.
9. The stair-climbing instinct of babies (like the tree-climbing propensity of boys) show:
10. The fruit-stealing instinct is a survival from monkeydom.
11. Children are fond of picking at anything loose—because monkeys pick off the bark from trees in order to search for insects.
12. Children are very fond of rolling. This points to the time when our ancestors had hairy bodies tenanted by parasites, and allayed the irritation by rolling.

A DOUBLE ELM TREE.

We are indebted to Mr. R. D. Wirt, superintendent of the Independence (Mo.) Water Works Company, for the following: You will find in this photograph a peculiar freak of nature. The tree is an ordinary elm, and can be seen in a good healthy state of growth on the farm of Captain L. P. Williamson, two miles north of Independence, Mo. The trunk at each end of the bow is some 20 inches in diameter, and it is a very difficult matter to tell which is the original root. Hence our amateur artist, P. H. Grinter, has imprinted on the photograph the question "Which is it?"

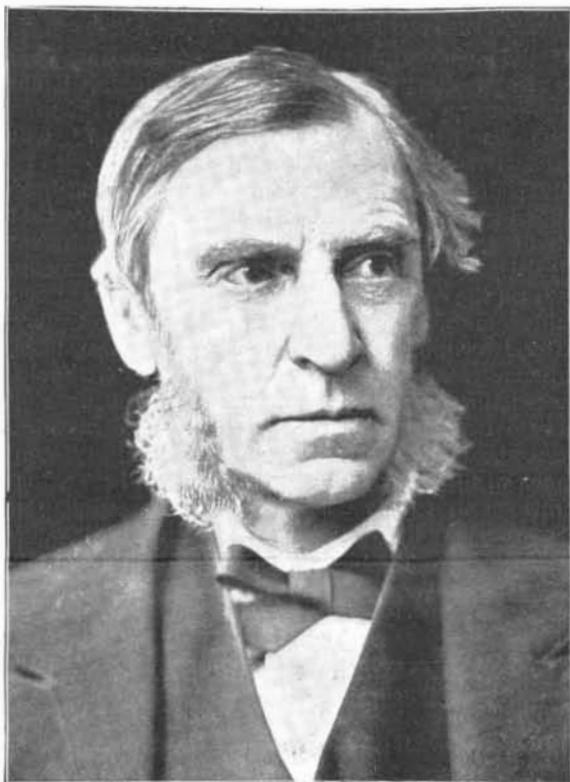
The Dead Sea of America.

The dead sea of America or Medical Lake, as it is called, because of its medicinal qualities, is situated on the great Columbian plateau in Southern Washington. It measures a mile in length and from a half to three-quarters of a mile in width and has a maximum depth of 60 feet. It stands at an altitude of 2,300 feet above the level of the sea. The chemical composition of this lake is nearly identical with that of the Dead Sea of Palestine, and like its eastern counterpart, it is almost devoid of life and no plant has yet been found growing near its edges.

DEATH OF JAMES ANTHONY FROUDE.

The famous historian, religious essayist, and biographer, James A. Froude, died on October 20, at the age of seventy-six years.

"The death of Mr. Froude," says the *New York Evening Post*, "ends a life which, in its interests, its emotions, and its activities, in more ways than one reflects the strange transition through which England has been passing during this century. He was one of the very few survivors of that extraordinary group of



JAMES ANTHONY FROUDE.

young men who, over fifty years ago at Oxford, illustrated in the sphere of religion the power of the all-pervading spell of the romantic spirit in its revolt against the rationalism, the common sense, and the placid self-content of the eighteenth century, which found their shapes in the utilitarian Liberalism of the day."

Mr. Froude was the son of Archdeacon R. H. Froude. His education was obtained at Westminster and at Oriel College, Oxford, where he was graduated in 1840. He took his master's degree, and in 1842 he carried off the English prize with an essay on "The Influence of the Science of Political Economy on the Moral and Social Welfare of the Nation." He became a fellow of Exeter College in the same year, and two years later he was ordained a deacon in the Established Church of England. He had no taste for clerical duties, however, and he devoted himself to literary work. He fell under the influence of Newman, then an English Churchman, subsequently a cardinal in the Roman Catholic Church, and wrote "The Lives of the English Saints." In 1848, when but thirty years of age, he published the book which created such a sensation, "The Nemesis of Faith." In that work he proclaimed

himself a rationalistic doubter. His attack on Bibliolatry and his theory of religion brought upon him the censure of the University authorities and the loss of his fellowship. He was very successful, however, as a magazine essayist, and one of his essays, on the Book of Job, was reprinted in separate form. Two years later Mr. Froude published the first two volumes of his "History of England," and the book, although sharply criticised, received great popular endorsement. The succeeding volumes of the work were issued from time to time until the conclusion in 1870. In 1869 he was installed rector of the University of St. Andrews, the degree of LL D. being then conferred on him. In 1872 he resigned his diaconate in the English Church under the Clerical Disabilities Act.

Nothing excited more comment in Mr. Froude's career than his work as Carlyle's literary executor and his personal and professional hostility toward the historian Freeman. With regard to these matters, the *New York Tribune* says:

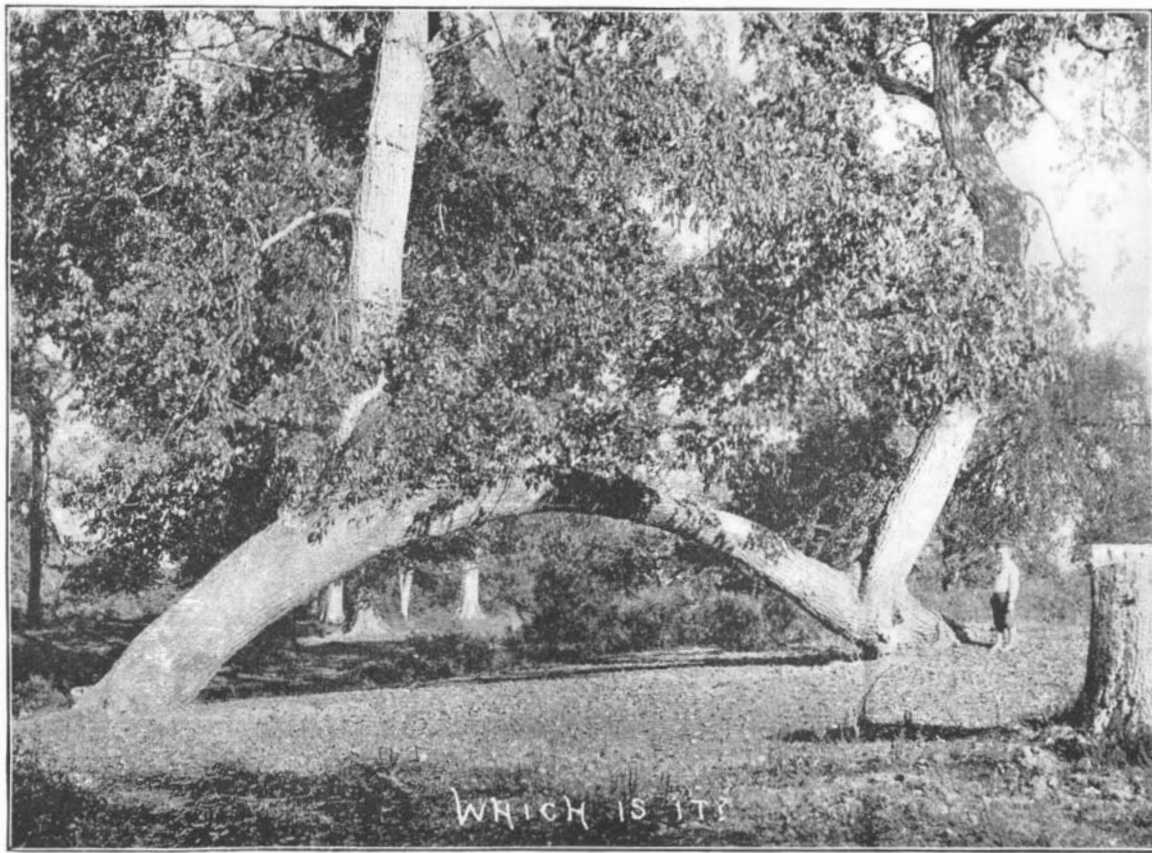
"Much of the blame was due to Carlyle, whose indecision had grown upon him with his years, and who, in addition to the clause in his will placing his papers at Froude's disposal, seems also verbally to have put them in the possession of his niece, Mrs. Alexander Carlyle, who had long been an inmate of his family. The 'Reminiscences' realized nearly £2,000, and Froude gave Mrs. Carlyle about £1,600, but the censure on the editing, partly due to Froude's haste and partly to the fact that he made revision impossible by turning over the papers in his possession too quickly to Mrs. Carlyle, led the latter to endeavor by legal means to prevent the publication of Froude's own work. The matter was quieted at law, but criticism was busy with it for more than half a decade.

"When Lord Salisbury appointed him as the successor of Freeman at Oxford, the friends of the latter manifested a feeling of bitter annoyance. Freeman himself in his lifetime had sharply criticised Froude's method as a historian, to some extent justly. But it came to be pretty well understood that no reflection was intended in the choice of the new professor upon the memory of the one who had passed away. Nevertheless, Froude's inaugural address, though studiously elaborate, sounded now and then a note of defiance. For example, he spoke of Freeman as one 'who along with his asperities had strong masculine sense,' and said of his critics: 'Being omniscient already, I conclude they did not feel that they had more to learn. Like St. Paul, I may say, I labored more abundantly than they all. Like St. Paul, I say also, I speak as a fool.'

Mr. Froude's conception of the historical method was formulated in a lecture on the science of history, delivered at the Royal Institution in 1864. "It often seems to me," he said, "as if history was like a child's box of letters, with which we can spell any word we please. We have only to pick out such letters as we want, arrange them as we like, and say nothing about those which do not suit our purpose." Critics have described him as a special pleader, but it is the general verdict to-day that he has been indispensable and has, by his unconventional methods, restored equilibrium in many cases where views as one-sided as his own had usurped the authority of history.—*Literary Digest*.

Good Maxims from the Keystone.

A well known banker says he owes his success to observing the good advice of an older friend, who told him to keep good company or none. Never be idle. Cultivate your mind. Make few promises. Live up to your engagements. Keep your own secrets. When you speak to a person, look him in the face. If any one speaks ill of you, let your life be so that no one will believe him. Live within your income. Small and steady gains bring the kind of riches that do not take wings and fly away. Earn money before you spend it. Never run into debt unless you see a sure way to get out of it. Never borrow if you can possibly avoid it. Do not marry until you are able to support a wife. Never speak evil of any one. Be just before you are generous. Save when you are young and enjoy your savings when you are old.



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