

Washington he sought out the detective, and the best seat in the house was his. When the performance was over they 'took in' the city together. Booth was an adept at having a 'high old time,' and Williams, then a young, vigorous, and wiry specimen of manhood was an able co-adjudicator. They saw the city together—saw it in its every aspect—and specially those aspects which reveal themselves between the hour of midnight and the first streaks of dawn. For many years this intimacy had existed, Booth, the handsome and accomplished actor, and Williams, the acute and sharp-brained detective, hobnobbing as only two kindred spirits can.

"Just before Booth entered Ford's theater on the night of the assassination he met Captain Williams on the street. Both proposed a drink, and they retired to a near-by saloon. Never had Captain Williams known his actor chum to drink brandy, but on this night Booth insisted that they should not be served at a table, but, walking up to the bar, he asked for a big glass and called for brandy. Filling the glass to the brim, he gulped it down, hastily said good-by, and went into the theater, only a few yards distant. His manner was strikingly unusual, declared Captain Williams, but Booth was a man of moods, and nothing more was thought of it. Within ten minutes he had shot Lincoln, and was on his horse making his way to the navy yard bridge. It was Captain Williams, by the way, who first suggested to the authorities that this was the route Both had taken in leaving the city.

"As soon as the news of the shooting of the President and the assault on Secretary Seward became known, steps were at once taken by the authorities to guard all the prominent government officials. General Augur ordered Captain Williams to look after Vice President Andrew Johnson, who had his rooms at the Kirkwood house, on the site of the present Hotel Raleigh. For twenty-four hours Captain Williams performed his duty. It is enough for me to say that his admiration for the courage of the vice president was not great. The captain's humorous stories of the actions of Johnson on that night will never fade from my memory. Following the shooting, that Captain Williams should enter upon the pursuit of the chief assassin, who had been his bosom friend. He started at once, and with a squad of cavalry went down the Potomac. He was ordered to scour the north side of the river, but not to cross over. He got on the track of Booth at once, and was the first to learn that the slayer of Lincoln had crossed to the south side of the river under cover of darkness. But his orders forbade his crossing, and he remained unwillingly and fretfully on the north side. He had arrested Dr. Samuel Mudd, who set Booth's broken ankle, and who was afterwards sent to the Dry Tortugas for life, and John M. Lloyd who turned state's evidence. But he chafed to get at Booth, and when he learned that he had been surrounded by another searching party at the Garrett farm, on the south side of the Potomac, he determined to cross over and be on hand at the capture, orders or no orders. Moreover he was probably the only man in the entire party of officers who could identify Booth. Soon after his arrival at the Garrett home—stead the barn in which Booth had taken refuge was set on fire, and Boston Corbett, the sergeant, fired the shot which ended the assassin's life. It is a curious fact that Booth was shot in the same spot as Lincoln.

When Booth was brought out of the burning barn he was laid on the grass under an apple tree. Not a soul present save Captain Williams knew certainly whether the dying man was Booth

or not. A soldier asked: 'Who is this?' and Captain Williams, standing by said, in a loud tone of voice: 'That is John Wilkes Booth.' Hearing the sound of Williams' familiar voice, Booth, still conscious, turned half over, and said: 'And you are hunting me, too, Billy Williams! It's all useless, useless.' Soon after he was dead.

"This is a brief outline of what Billy Williams told me of the part he played in the greatest tragic drama in the history of the Republic. And this Republic, he declared to the day of his death, owed him \$50,000 which it wrongfully withheld. Everywhere in his travels in search of Booth he had, under instructions, posted large placards offering \$100,000 reward for Booth, and \$25,000 for each of his accomplices. Captain Williams arrested two of these, and he felt that the government, which offered the rewards, should pay him the \$50,000. But he never received a cent, and died a poor man.—Washington Post.

#### SCIENTIFIC MISCELLANY.

To a study of records that we are just beginning to recognize M. J. Thoulet has given the name of paleomineralogy. It shows that important facts concerning the earth's constitution or geography in past epochs are to be read from the traces of events in minerals, such as are illustrated by the formation of liquid inclusions in crystals, the optical deformation that shows whether feldspar has been red-hot, and the wearing of pebbles. Through the character of the sand the dunes of Holland were traced to the Scandinavian rocks. The shapes of sand grains are found to bear certain relations to the distance they have been transported and the velocity of the current that carried them; and it is suggested that some day we may read such lessons so thoroughly as to be able to determine from a piece of limestone the dimensions of the sea in which it formed, with the force and direction of its currents and winds, and the depth, temperature, salinity and density of its water.

The feat of photographing flying bullets has been eclipsed by M. L. Decombe, who has reported to the French academy the photographing of the Hertzian oscillation, occupying less than the five-millionth of a second. The period of oscillation was shown by reflection of the explosive spark from a rotating mirror to the focal plane of the camera by a collimating lens.

The curious experiment has been performed by Rev. F. C. Lambert of fixing a photographic negative before attempting to develop it. He announces the surprising result that, using a silver-intensifying developer, the image can be brought out, even after the plates have been exposed to full daylight.

A coating of asbestos cloth has been applied to the bottom of glass flasks and retorts, with the result that such apparatus can be much more safely heated than before.

The tracing in the brain of the "intellectual centers," or "centers of association," has been announced by Prof. Flechsig, a Leipzig specialist in mental disease. These appear within the surface as four connected complexes, resembling one another but differing from other parts of the cerebrum in structure, and are located in the forepart of the frontal cerebrum, in the temporal lobe, in the hinder parietal lobe, and in the lobule. Innumerable nerve-fibers connect them with the centers of sensation. They convert into thought the perceptions received from without by the centers of sight, hear-

ing, smell, touch, etc., and they bear all that we call experience, knowledge, cognizance, principles and higher feelings, as well as language. Their extraordinary development distinguishes the human brain from that of the lower animals. They do not exist in new-born children, but in infant brains may be followed the development of the centers of sense, which is completed after the third month, and then the gradual formation of the intellectual centers, more and more nerve-fibers shooting forth into those new regions. Only about a third of the brain cortex is directly connected with the nerve-fibers in which consciousness of sense impressions depends, two-thirds serving the higher purpose of the intellectual centers. Mental diseases are caused by the destruction of the intellectual brain, and one of the four centers may be affected without appreciably influencing the others, so that, for instance, language may become confused, while conception remains clear—the two depending on different centers.

The lightest metal tubing is now made from an alloy of nickel and aluminum. A quantity recently made for electrical instruments was only 0.036 inch in outside diameter, with walls 0.0015 inch thick, and 3,000 feet weighed but a pound. A still more remarkable specimen was only 0.01 inch in diameter, with a hole that could be seen only with a magnifying glass. These tubes mark great progress in aluminum working, as a few years ago such alloys could not be drawn.

A German metallurgist uses a rotating mould, into which he pours hard steel, which flies to the sides, and then he fills the hollow center with soft steel. The result is a casting having a safe core and a hard face, like ordinary chilled castings.

Horned men and women, M. Jean Finot points out, are not only well known, but are less rare than one might suppose. A work by M. Villeneuve describes seventy-one instances of people with horns, which in half of the cases have grown on the forehead. More women than men have been noticed with horns, and the horns are usually longer. In the British museum is a horn eight inches long—the largest human specimen known—from the head of an English nobleman. In the seventeenth century a Mrs. Allen of Leicestershire, England, had a pair of horns which she wore all her life; and Mary Davis of the same town had a pair which were cut off four times, each time growing again. The horns are said to have been much admired. Travelers have told of numerous horned men and women in western Africa, one of the specimens seen in 1887 by M. Lamprey being a majestic-looking negro with a horn springing from each side of his nose. A seven-inch horn with three prongs is said to have ornamented one side of the head of a Mexican named Rodriguez. The phenomenon sometimes appears in other creatures than man, cases of horns on dogs, horses and in one case on a cat, being well authenticated. One authority considers the abnormal horns a nervous prolongation of the skin, while another declares they are due to a morbid secretion. Human horns, at any rate, resemble those of animals in substance, and they appear to have no effect upon health.

The possibility of using a sinusoidal electric current of high frequency as an anaesthetic has been shown by Prof. E. W. Scripture of Yale. An anesthesia of the tissues lasts for a considerable time after removal of the