

The Duke went to the Millbay Docks, where he was received on board his old ship, H. M. S. Galatea, which at once moved into the Sound. She was followed there by the Trinity yacht Siren and the Harpy, which contained the Mayor and Corporation of Plymouth. The Carron, with the Mayor and Corporation of Devonport, and the Vivid, the yacht of the Port Admiral, Sir Houston Stewart, were waiting off the pier, and with the Triton, Trusty, Perseverance, and other government steamers, joined in the procession, followed by a number of private steamers and by a whole fleet of yachts. The Galatea led the way, closely followed by the Siren; the Vivid and the Harpy coming next in order. The ships in port were dressed with flags from sunrise, and as the royal standard was hoisted salutes were fired from the citadel and men-of-war. The weather was brilliant. As the Galatea passed through the Sound two American corvettes, the Portsmouth and Saratoga, which were lying there, dressed colors and fired a royal salute. The run out occupied about an hour and a half. The coast of Devon and Cornwall, from the Prawle Point to the Dodman, was distinctly visible, and the sea was covered with craft of all sizes, from tiny fishing boats to ocean mail steamers on their way up channel. The Eddystone was reached at a quarter past eleven, and the vessels grouped themselves around the reef. This is well shown in our engraving, which is from the *Illustrated London News*. Altogether 9,000 persons were present at the Eddystone at the time the light was inaugurated; but the ceremony was not participated in by more than a select few of those on board the Galatea, with the addition of Mr. C. F. Burnard, the Mayor of Plymouth. The Duke of Edinburgh landed on the Eddystone Rock about half past eleven. A prayer was offered by the Rev. Dr. Wilkinson, the lamps were lighted, and the machinery which sets in motion the fog bell was started by the Duke of Edinburgh. Everything was found in the most perfect order. The ceremony over, cheers were raised by the party at the lighthouse, and taken up again and again by the occupants of the steamers which lay around. The Duke then embarked amidst another round of cheers, and the start homeward was speedily made, the Galatea and the Siren being this time the last to leave. The run back was made at full speed, after the Galatea had steamed round the American vessels in the Sound, which manned yards in honor of the visit. Millbay Pier was again reached a little after two. Here an address was presented by the Mayor and Corporation of Plymouth, and His Royal Highness drove from the pier to the Guildhall to attend a luncheon, given by the Mayor, Mr. Burnard. The magnificent hall was splendidly decorated. The company numbered over two hundred, and included the Duke of Edinburgh and elder brethren of the Trinity House, Admiral Sir Houston Stewart, and other heads of departments in Plymouth and Devonport, Commodore Luce and the officers of American vessels in the Sound, the magistrates and members of the Corporation of Plymouth, Devonport, and Stonehouse.

The Mayor, on rising to propose the health of the Duke of Edinburgh, said: "I may say that when I suggested to His Royal Highness, as I did, that we had not expected our American cousins on this occasion, and that it would be desirable to recognize their attendance, he at once expressed the pleasure it would give him to propose the toast of their healths. (Great cheering.) I have now to propose the health of the Corporation of the Trinity House, including the health of His Royal Highness, the Master." (Cheers.)

His Royal Highness, in concluding his remarks in reply, said: "I beg to thank you once more for the way in which you have drank to the health of the Trinity Brethren, and more particularly for the way in which you have associated my name with the toast. (Loud cheers.) The fact has been alluded to more than once by the speakers who have addressed this assembly, that we have among us to-day representatives of our Transatlantic cousins. I ask you to join with me and with the Brethren of Trinity House in welcoming among us Commodore Luce and the officers of the American squadron." (Loud cheers.)

Commodore Luce, was enthusiastically received, and said: "Your Highness, your Honor the Mayor, and gentlemen, I esteem it a great privilege to be present to-day to speak in the name of Americans. (Cheers.) As Americans, it is good for us to be here. (Cheers.) The very name of Plymouth recalls to mind the Pilgrim Fathers—(cheers)—and reminds us of Plymouth Rock in New England. As it has been happily expressed, the ocean does not divide but knits Old and New England. (Loud cheers.) Our traditions date from this country. (Cheers.) When my distinguished friend Admiral Sir Houston Stewart, reverted to the fact of Sir Francis Drake playing bowls upon

Plymouth Hoe, just before he and Hawkins and Howard of Edingham, set out to meet and defeat the Spanish Armada, I was reminded that it was just as much the New England as the Old that was interested in that great epoch. (Cheers.) The Pilgrim Fathers and the Plymouth Rock are inseparably associated by us in America. And I would go further and ask what American there is who has not been nurtured in the English classics, and what American there is who has not had instilled in him the early English instincts of civil and religious liberty? (Cheers.) As the Old England has given light to the physical world, let us hope that it may continue to give light to the moral and religious world. (Cheers.)

Commodore W. B. Hoff, of the Portsmouth, Commander Henry C. Taylor, of the Saratoga, and Flag Lieutenant A. Ward were also present at the luncheon.

PROGRESS OF THE HUDSON RIVER TUNNEL.

Work on the tunnel beneath the Hudson river, uniting New York City and Jersey City, is being pushed so rapidly that one-fifth of the whole distance is now completed. On the New Jersey side the tunnel is advanced at the rate of three feet a day, a feat said to be unparalleled in the history of engineering. The engineers in charge are confident that the greatest difficulties of construction have been overcome. Two tunnels extend under the river bed from the Jersey shore. The southernmost is now 600 feet long the northern 1,000. The peculiar formation of the soil on the New York side necessitated the sinking of a caisson, instead of the use of a shaft, as was done on the New Jersey side. The caisson is forty-eight feet long, twenty-nine and a half feet wide, and twenty-six feet in height, outside measurements, and is sunk so that its bottom is fifty-six feet below the mean low-water mark and sixty-five feet, below the surface of the street. It is made entirely of wood; its walls are three feet thick, the sides having a slope of one-half inch to the foot, so that its interior somewhat resembles the sloping sides of an inverted funnel. It is one-third larger than that used on the Jersey side and weighs 400 tons. On top of the caisson a coffer-dam in three compartments was constructed, these compartments running east and west across the caisson, and the central compartment being nine feet in width. In this are the air-locks admitting to the base of the caisson and thence to the tunnel proper. The two side compartments are filled with the material removed from the excavations, thus serving as a load for the caisson. The whole arrangement with its load weighs about 2,500 tons. The caisson is, of course, air-tight. When the caisson was sunk to its proper level the bottoms of the lower halves of the projected tunnels were bricked up inside the caisson. The work thus far was comparatively easy, but that which has followed during the past four weeks, the opening of the north tunnel, has been watched with much interest by engineers. It consisted in cutting out the side of the caisson westward, and the construction of the iron bulkhead and of the tunnel walls, every step in which work was a desperate fight against the yielding earth and the permeating water. When the side of the caisson had been cut through, the work of excavating the earth had to be carried on very slowly and carefully, for a new and unanticipated difficulty was met with. In addition to the pressure from above and from the sides, there was found to be an upward pressure of water from the bottom of the tunnel of twenty-eight pounds to the square inch. The water that found its way to the tunnel from below was found to be fresh, and to come from the southeast, where seemingly there is an underground spring whose waters make toward the river. How long this newly discovered trouble will annoy is purely a matter of conjecture with the engineers, but they think they have discovered a plan of successfully battling with the possible leakage from above or below.

When the rough excavation at the heading is made, a circlet of iron plates, set together against the soil so that they are air-tight, is constructed. This plan differs from that heretofore used in the work only in the substitution of smaller and variously shaped plates in place of the four by two and a half feet plates used on the other side. This change was made so that the exposed surfaces could more quickly be covered and the leakage, if any should occur, be more easily stopped and the treacherous soil be prevented from caving in. The plan has thus far proved efficacious, and the first section of the north tunnel, twelve feet out from the caisson, is completed. Workmen are now pushing forward the construction of the tunnel in the heading extending ten feet further toward the