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OPENING OF A NEW DRY DOCK AT NORFOLK, VA. The great dry dock lately built by the Chesapeake Dry Dock and Construction Company was opened for business on the 24th of April with appropriate festivities. A large company of distinguished personages, engineers, and government officials was present. The dock is built on the well known plan patented by J. E. Simpson, of Brooklyn, N. Y. It consists of an immense caisson, with an end gate, something like a canal lock. In docking a ship the gate is opened, the caisson is allowed to fill with water, which sinks the caisson to the required depth. The ship then passes in over the floor of the caisson and is held in the desired position; meantime the water is pumped out of the caissons, which rise and lift the vessel out of water. These docks are now in all parts of the world.

The present dock is one of the largest of its kind even constructed. It is 630 feet long from head to outer sill: 130 feet wide at top and 50 feet at the bottom, and 33 feet deep, with a slope in the bottom of 24 inches to the 560 feet. The approach to the dock is piling, 250 feet long and 150 feet wide, while on each side piers 80 feet wide afford ample wharf room. The caisson is an iron carry. structure, 96 feet long on top, 50 feet at bottom, and 33 feet deep.

The dock is supplied with two centrifugal pumps of a capacity of forty thousand gallons per minute, each of which empties it in one hour and thirty-six minutes. The combined power of the two engines is 500 horse power.

There is in course of construction a shipbuilding plant alongside of the dry dock which will, when completed, enable the company to do the finest work of construction and repair in the country.

The vessel selected for the first trial of the new dock was the great ironclad war ship Puritan. The dock was lowered and the Puritan was hauled in and placed in position. The gates were closed and the powerful be ever so thick, the night ever so dark, but the most pumps put to work to clear the dock of water, which approved quick-firing guns cannot feel their way to was done in about two hours. The Puritan is 300 feet this advancing destruction. Hence it would appear long and 60 feet wide, but she looked small in com- that, up to date, the attack of big ships upon a harbor parison with the great dock.

Mr. Simpson, the inventor, was present and greatly enjoyed the occasion. He is now quite advanced in years, but is still active.

### HEAVY QUICK-FIRING BATTERIES.

A new and interesting feature of British naval armament is the substitution of quick-firing guns for the mammoth pieces heretofore considered indispensable in the battery. These new pieces are not of the pepper-box variety, such as the Maxim, Nordenfelt, Gardner, and old-style Hotchkiss guns, which fire from 350 to 600 small shots a minute. The new arm, though after the same pattern, has only five chambers to its barrel, but fires heavy shot, shot capable, at short range, of piercing from 6 to 9 inches of iron. The new Hotchkiss quick-firing gun, offered to and refused by our ordnance department, and now being made in France, has a six-inch caliber, throws ten shots a minute of aimed fire, each of thirty-three pounds. The weight of the new projectile is nearly 110 pounds, the velocity about 2,000 foot-seconds with a charge of forty pounds of powder, and a penetration of nine inches of iron. The English, though at first disposed to adopt this arm, have recently devised a similar one, which is now being made at the Armstrong works, and six cruisers in course of construction are to be armed with it. These vessels will vary in size from 1,600 to 1,900 tons displacement, have armor belting from just below the water line to a point above high enough to protect the engines and quarters, and will be quick-heeled. The new quick-firing Armstrong guns composing their batteries will be scarcely forty-two hundredweight each, of less than five inch caliber, fire a projectile weighing forty-five pounds, with a muzzle velocity of 2,073 footseconds, and have a penetration of nine inches of iron.

The investigation of the causes which have led, or The ordinary mode of trapping, as Mr. Rodier points rather which are leading, to the abandonment of the out, is more likely to increase the number of rabbits mammoth gun principle of armament is an engaging than to diminish them. For reasons which he clearly and instructive study. It is not so many years ago when explains, more buck rabbits are always killed by the the struggle between gun and armor was in progress. trappers than does. Thus the does predominate in Floated armor reached its maximum of 24 inches with numbers, and, a few bucks being sufficient for a large a heavy oaken backing, and then stopped. More than number of does, are perpetually breeding and increasthat was found to seriously imperil the buoyancy of ing the stock. the modern · ship. Then a gun was made that would The plan advocated by Mr. Rodier is so simple and readily pierce this, and it was declared that the marine easy that I cannot doubt it will be widely followed gun had advanced in efficiency beyond the armor that when known. No disease that might otherwise cause could be opposed to it upon the seas. Mathematically injury is introduced, no other noxious animal is prospeaking, it was incontestable; but from a practical posed to be imported, but advantage is taken of the standpoint there was no such certainty. A charging well-known natural laws which regulate the increase trooper, let him be ever so good a shot with the carof life to effect in this instance a salutary decrease. bine, is no match for a foot soldier, be he ever so awk -----ward with his piece. Infantry are notoriously more re-A Great and Fast Passenger Steamer. liable than charging horse. The squares of Napoleon The first trip of the new passenger steamer Purițan, at the Pyramids beat 10,000 Mameluke cavalry-the best horsemen in the world. Heavy guns afloat might of the Fall River line, from New York to Newport, via be compared, perhaps not inaptly, with light arms in Long Island Sound, was made April 24, with much sucthe saddle as to reliability of fire-they shoot from a cess. She attained a speed of over 20 miles an hour rocking base. In all the recent naval maneuvers we with 65 pounds steam. When her new machinery is have had any account of, where these heavy guns were worked down and full power applied, which is 110 brought into action, the uncertainty of aim was appounds, it is believed she will surpass in velocity any parent. The ship had to be aimed rather than the passenger boat afloat.

gun, and this with a ponderous iron vessel, especially if there is much of a sea on, is not an easy task. Slowly the heavy gun is trained into position, and then, prestol the ship under it sways away in the sea and the target is gone! But though the heavy gun was not sure to hit its mark, the ship it was mounted upon, with its powerful armor, was thought at least to be fairly invincible, for nothing could approach it save under similar disadvantage.

Then came the torpedo boat-a flying target that to attempt to train a heavy gun upon was but a waste of labor. To guard against this danger, secondary or quick-firing batteries were mounted in the tops and set up on the poop and fo'c's'le. But soon the torpedo boats were armed with shields that the shot from these batteries could not pierce. Now come the newly devised quick-firing guns, not of the hundreds of small shot a minute variety, but capable of throwing ten heavy shot a minute-shot capable, as said before, of piercing nine inches of iron at short range; an armou that, it is safe to say, no small boat, built for speed, for running up quickly and dashing away again, could

It is not easy to see, however, how in any fair computation the believer in big ships can cry checkmate to the torpedo boats. As long as such elements as darkness and thick weather remain, as long as big guns belch forth clouds of powder smoke to hang upon the waters, it would seem as if these quickwinged terrors might still remain potent, at least when operating in or from a harbor or roadway. When a big ship, operating near shore, can no longer see any known points, because of darkness or smoke or thick weather, she must either come to anchor or be off to the broad seas. Once she anchors, her position can easily be learned by compass. The torpedo boat can then feel her way silently out to her, let the weather is not yet equal to the possible torpedo boat defense.

### The Australian Rabbit Pest.

It is stated that M. Pasteur's plan of exterminating the rabbits by inoculation with transmittable virus has proved to be a failure in Australia. The reward of \$100,000 offered by the N. S. W. government for an effective mode of destroying the rodents is as yet unclaimed. Mr. P. L. Sclater, of the London Zoological Society, writing to Nature, says:

Mr. W. Rodier, of Tambua, Cobar, New South Wales, has forwarded to this society a printed sheet, containing, as it appears to me, by far the best suggestion yet made for the extermination of 'rabbits-a subject to which my attention has been repeatedly called by various correspondents in the Australian colonies, where, as is well known, the damage done by these animals is enormous. Mr. Rodier states that his plan has been in operation at his station in New South Wales for about eight months "with the utmost possible success," and has cleared the country of rabbits. It is a very simple plan. Ferrets and nets are used in the usual way to capture the rabbits, but while all the females taken are destroyed, the males are turned out again uninjured.

The results of this mode of operation are that the male rabbits, as soon as they begin to predominate in numbers, persecute the females with their attentions, and prevent them from breeding. They also kill the young rabbits that happen to be born; and even, as Mr. Rodier asserts, when they largely predominate in numbers, "worry the remaining does to death."

This is all strictly in accordance with what we know takes place under similar circumstances in the case of other animals, so that we can readily believe it to be likely to happen.

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