

THE GATLING GUN ALOFT.

In the old days of yard arm to yard arm naval conflicts, it was always customary to station good marksmen in the tops, their duty being to pick off the enemy's officers and disable the crews of the spar deck guns. Other men stationed aloft were provided with hand grenades, small explosive shells, which they threw upon the deck of the hostile vessel. The light mitrailleuse now used on men-of-war is a far more formidable means of offense than either single rifles or grenades, and, in fact, it renders impossible the working of exposed guns on any craft within the range of the hail of bullets which it projects.

Our engraving, from the *London Illustrated News*, represents an American Gatling gun as arranged for use in the main top of a British man-of-war, a significant example of the avidity with which foreign nations adopt the inventions which originate on this side of the Atlantic, especially when the same are of superior value for war purposes. The gun, as here depicted, consists of a number of gun barrels, which may be as many as ten, fixed around a main shaft, which is also combined with a grooved "carrier," to hold the cartridges, dropped into it one by one; and with a cylinder, in which are cut slots for as many gun locks as there are barrels to be fired. The whole of the above apparatus is raised or lowered, or moved to the right or left, by working a handle at the side. There is a drum fixed on the top, contain-

ing 350 cartridges, set in rows; this is so arranged as to be the feeder, by dropping the cartridges in succession into the carrier, from which they are shifted by lock action into the gun barrels, successively brought round with each revolution of the cylinder. The caliber of the gun barrels is 0.45 inch; they can be charged and fired with great rapidity, discharging five or six shots in a second.

A Cubic Mile of Humanity.

A fanciful genius suggests that it is now time to celebrate the completion of the first cubic mile of humanity, and gives a calculation to show that the bodies of all mankind, from the first Adam down to the Adams just born, if closely packed without diminution of volume, would exactly fill that space. Here are his figures, which our young mathematicians who have nothing else to do may verify if they can.

According to the orthodox chronology the world has been inhabited about 6,000 years, or 170 generations. Its present population is about fifteen hundred millions; but this density of population must have been slowly reached, since all are descended from an original pair. Consequently he takes half the number of the present seven hundred and fifty millions, as the average population of the world from the beginning until now, making the aggregate of human bodies during the 170 generations, 127,500 millions. Since many die in infancy, and half are women, the average weight of

each body is taken as seventy-four pounds. The aggregate weight of all mankind to date must accordingly be 4,212 million tons, or a little more than the weight of a cubic mile of sea water. Since the human body, with the lungs not inflated, is a trifle heavier than sea water, our calculator assumes that his estimated 4,212 million tons of humanity would fill the same space as 4,205 million tons of sea water, or precisely one cubic mile.

Taking the same figures and exercising the same freedom in striking averages, the mathematically inclined may deduce any number of amusing results. For instance, assuming the average length of humanity to be a little under four feet, the bodies of all mankind, living and dead, placed end to end, would just make a bridge from the earth to the sun!

Hair Hygrometer.

In a new hair hygrometer, by Dr. Koppe, of Zurich, the hair, protected by a sheet metal frame, is stretched by a small German silver spring, which can bear $\frac{1}{2}$ grain. In adjustment, a cloth covered frame, after being moistened with water, is pushed into the back wall of the apparatus. In less than a minute the pointer rises to 100; or it can be exactly brought to 100 by turning with a watch key the shaft to which the end of the hair is attached. If the moist frame be now withdrawn, the apparatus soon shows the moisture of the surrounding air.



THE GATLING GUN IN A MAN-OF-WAR'S TOP.