

AMERICAN COTTON STATISTICS.

An interesting article on "Statistics of Cotton Manufacture," taken from the eleventh annual report of the Boston Board of Trade, by Samuel Batchelder, Esq., has lately been published. We condense the following from its pages:—

In 1860 there were in Massachusetts 1,688,471 spindles and 41,620 looms. Since 1850 there has been a total increase of 31 per cent in the number of spindles; but during the past five years the ratio of the increase has been only 11 per cent, which is much lower than that of the same number of years since 1840.

The consumption of cotton in Massachusetts in 1850 was 95,032,975 pounds, or 73.70 for each spindle; in 1855, the amount consumed was 105,851,749 pounds.

It is stated in this report that there is no positive data by which to determine the present number of spindles in the United States, but according to the census of 1850, there were 272,527,000 pounds of cotton consumed; and by allowing 75 pounds to a spindle, there would have been 3,633,693. "If we add," says Mr. Batchelder, "twenty per cent for the increase of the next ten years, during which time the spindles in Massachusetts have increased 31 per cent, we shall have 4,360,430 for the number in the United States in 1860."

In Tennessee, Alabama, Georgia and South Carolina, there were 140,602 spindles, according to De Bow, in 1850, and the bales of cotton consumed were 60,000; but the statistics for that year make the consumption of bales in these States only 41,778. The report of the Philadelphia Board of Trade for 1860 gives the consumption of cotton in States north of Virginia at 760,218 bales, and in States south at 164,700, making a total of 924,918. Mr. Batchelder is of opinion, however, that 900,000 bales is probably nearest the truth.

In 1855 there were 314,996,567 yards of cotton cloth produced in Massachusetts, at a cost, for labor and material, of 7.76 cents per yard. The exportation of American goods is larger than many persons suppose. For the year ending June 30, 1860, the value of such exports amounted to \$10,934,796. It is understood that goods to the value of \$4,200,000 went directly to China from the ports of New York and Boston. The London *Economist* states that the total cotton goods and yarn exported from Great Britain last year amounted in value to £48,200,000, of which sum the United States took £4,635,000 (about \$22,479,750). We therefore export cotton goods valued at nearly one-half that which we take from England. This is more favorable than most people imagine.

Mr. Batchelder says: "As to the future prospects of our cotton manufacture, the greatest apprehension seems to be on account of our relations with the Southern States. There is little doubt that we shall be able to obtain our supply of cotton at the market price, unless all the laws of trade are nullified." This is no doubt a sound conclusion, but it affords no satisfaction to any person. Cotton can always be obtained at the market price. It is stated that the value of the entire cotton manufactures of the United States in 1850 was \$61,869,184, of which \$57,134,760 as consumed at home and the rest exported; and of this amount the free States produced \$52,502,853. About seven per cent of this only is supplied to the fifteen slave States. Our foreign exports of cotton goods have increased rapidly. In 1850, they were valued at \$4,734,424; the increase in ten years is \$6,200,372.

A common opinion prevails that the increase of cotton machinery has kept in advance of the supply of cotton. Mr. Batchelder asserts that this is not the case. He gives some statistics of British manufacture in proof of this opinion. In 1856 the number of spindles in England and Wales was 25,818,576; looms, 275,590. In Scotland—spindles, 2,041,139; looms, 21,624. In Ireland—spindles, 150,502; looms, 1,633. The increase of spindles in Great Britain in six years was 30 per cent. At the present time it is believed that there are 33,612,260 spindles in England, Ireland and Scotland, allowing an increase of 20 per cent for the last four years. The increase of cotton machinery in England has been proportionally greater than in the United States. The average number of spindles to the loom in Great Britain is 84, or about twice the proportion of this country. More cotton is exported in the form of yarn, and the looms are driven with greater speed in England. But the whole increase of cotton machinery in Europe and America, from 1850 to 1860, is stated to be no more than 50 per cent,

while the average increase of the cotton crop in the same period has been no less than 64 per cent. Instead of the machinery increasing beyond the power of the cotton crop to supply the spindles (as has been predicted for some years past) the supply of cotton has been increasing beyond the spindles. At the close of 1860 there were 403,000 bales of American cotton in Liverpool. Mr. Batchelder states that he had hoped to obtain from Washington some statistics from the census of 1860; but on application at the Census Bureau, the manufacturing statistics had not been made up so as to afford any information on the subject.

HEAD DRESS FOR SOLDIERS.

The ladies connected with various churches in our cities and villages have exhibited praiseworthy alacrity and benevolence in preparing articles of dress for the volunteer soldiers. The most conspicuous articles furnished have been Havelocks. This is a new head dress for American troops. It derives its name from General Havelock, the hero of Lucknow, whose pictures represent him with one placed over his military cap. They have always been worn, however, by the natives of India, and have long been in use by British soldiers in that tropical clime. As made for our soldiers, they are simply composed of white cotton, linen or woollen cloth, forming a light thin cover for the cap, with a flap hanging upon the neck. Of what use, it may be asked, are such articles for soldiers, especially the back flap? Their ostensible object is to afford protection for the head and neck from the effects of the burning sun, and thus prevent sunstroke when soldiers are on a march, drilling, or in an engagement. White cloth reflects the rays of light; hence the utility of the Havelock for the protection of the head, but the use of the flap is not so apparent; still, it is very beneficial, and all persons should know the reason why.

The great nervous highway of the brain is the spinal column running down the neck and back from the head. The neck and spine, therefore, require to be nearly as carefully guarded as the head; hence the use of the flap on the Havelock. The Arabian in the desert invariably wears one end of his turban hanging down over his neck; and, beside this, he has a long strip of cloth running down the middle of his back. The Hindoo soldier wears a thick cotton turban, with a thin piece of iron (generally an old horse shoe) sewed on the top, as a defence from sword cuts. The Indian army have their Havelocks wadded in the crown.

The head and neck are perhaps the most important parts of a soldier's body that require attention. Not only the form and color, but the nature of the material, should be objects of consideration in making the cap covers. As it regards color, white is the best for hot climates. The tube of a thermometer placed in the sun, and covered with white cotton sheeting, showed a temperature of 35.5° Fah.; covered with white linen, it showed a temperature of 39.6°; covered with dark blue cloth, it showed a temperature of 42°; and with red cloth, it reached the same figure. Blue and red colored cloths absorb more heat when exposed to the rays of the sun than white; hence the utility of white Havelocks. And as it regards material, bleached cotton is superior to linen, but white woollen flannel is believed to be superior to either linen or cotton, because it is a better non-conductor.

The troops intended for the South ought, therefore, to be all supplied with Havelocks, which will enable them to work in the sun without experiencing any effects from its rays. For want of such a simple protection, several of the soldiers at Washington have been incapacitated. When it is remembered that the British soldiers in India, with Havelocks, were able to stand the intense heat of the country without injurious effects, the value of this protection cannot be over-estimated.

ARMY WORM.—The army worm has been and still is very destructive in some parts of Tennessee, and many fields of grain have been destroyed. We may soon expect to see it charged by the secession editors of that State that the government of the United States has let loose the army worm to prey with "more than savage atrocity upon the innocent fields of grain in that State." If we may believe what we read, an army is worming its way down toward Tennessee that may prove more uncomfortable than the army worm.

INTERESTING FACTS ABOUT UNITED STATES ARSENALS.

One of the most extensive arsenals in the United States is located at Bridesburg, Philadelphia. The *Inquirer* of that city, gives an interesting account of this arsenal, from which we select a few extracts.

The grounds are trapezoidal in shape, and occupy an area of 60 acres, surrounded by a solid wall of masonry 10 feet high. The Superintendent's office is situated very nearly in the center of the grounds, eastward of which lies the east arsenal or storeroom for arms. It is a handsome edifice, three stories in height, rough cast, to imitate granite. The roof is of slate, and is surrounded by a neat wooden railing, painted white. On the first floor are about 30,000 muskets, 1,000 rifles, 300 Hall's carbines, 300 pistols, and 100 cavalry musketoons. The muskets arrived last week. On the second floor there are about 400 rifles, 300 cavalry sabres, and 100 pistols with holsters, slings and pouches. On the third floor the arms are ranged most beautifully in racks, painted to a snowy whiteness; 740 muskets of the improved pattern, and 900 of the old flint locks, together with 150 pistols, carbines and musketoons, are pivoted on small circular racks, very much resembling umbrella stands. In one room are 2,000 muskets that were brought from Harper's Ferry. Sights are being fixed to them, and 1,300 of them have been already rifled.

THE INSPECTION OF ARMS.

On the floor are a number of unvarnished mahogany cases, which, upon being opened, revealed a set of exquisitely finished inspecting instruments, consisting of guide plates for different bores, callipers for measuring shot, also a pair of callipers that will measure the thousandth part of an inch, by means of the vernier. But the most wonderful of all was an instrument for measuring the flaws and inaccuracies on the inside of a gun. It was made in the arsenal manufactory, at a cost of \$200.

GUN METALS.

All the metals employed in gun casting have their defects. Cast iron is quite tenacious, if a sufficient weight is employed, and tolerably hard; but its comparative elasticity (an important element of strength) is so small that its tenacity is invariably destroyed after a certain number of applications of the straining force. The difficulty of obtaining sound castings, by reason of the unequal shrinkage of the metal, is unfavorable, so much so that the strongest "high" iron, by its superior contraction, does not as a rule, make so strong a gun as a metal in itself weaker.

Bronze, a more tenacious compound, has also serious defects. Its density and tenacity are considerable, but its softness unites it, for reasons already stated, for long service, particularly when rifled. Wrought iron has a tensile strength double that of the best cast iron, and is much more elastic, but somewhat softer. Authorities generally unite in stating that it was, when most in use, an improvement on cast iron, but the difficulty of producing large masses sound and homogeneous, has prevented its extensive introduction. In fact, without such instrument as that referred to, to gage the barrels of guns, the difficulty in the way of obtaining reliable weapons would be almost insurmountable.

PERCUSSION CAPS.

In one of the main rooms of the first floor the interesting process of making percussion caps is carried on. The caps are stamped out on three presses, which bear this inscription: "Invented by George Wright, Washington Arsenal." Eighty thousand caps are turned out per day. They are constructed of an alloy of copper, which is rolled out into thin sheets, and cut into inch strips. These strips are wound upon a reel, whence they pass beneath a dye, which, at one stroke shapes their worldly destiny.

They are then made to revolve upon a steel horizontal disk, so as to pass beneath a funnel filled with fulminating powder. Receiving their quota of the detonating dust, they are conveyed to another department, where they are treated to a coat of varnish, and are then packed up for shipment.

One hundred and sixty thousand percussion caps can be turned out at the Bridesburg arsenal in one day.

BULLET MAKING.

In the same apartment is a wonderful machine that presses out eighty musket bullets per minute—a decided improvement on the old method of casting.