

### THE FOUR TRAVELLERS,

Four travellers one winters night  
By my father's board so free,  
And he asked them why they left their  
homes.  
And why they crossed the sea,  
One said for bread, and one for gold,  
And one for a cause of strife;  
And one he came for a false love's sake  
To lead a stranger's life.

They stayed amid our haven's long  
And learned our mountain ways;  
Nor grieved for their homes across the sea,  
Their friends of early days.  
And they were brave by flood and field,  
And they were blithe in hall,  
And he that came for a lost love's sake  
Was the blithest of them all.

Now he that fled so far from strife  
Hath a goodly household band;  
And he that came to seek for bread  
Is lord of my father's land;  
And he that came for gold alone  
Hath married my sister fair,  
And the oaks are green, and the pastures  
broad  
By their pleasant homestead there.

And when they meet by the winter's fire,  
Or beneath the bright woodbine,  
Their talk is oft of a whelming stream,  
And a brave life given for mine.  
For a grave by our mountain rivers side  
Grows green this many a year,  
Where the flower of the four sleeps evermore  
And I am a stranger here.

### OFFICIAL EXPERIMENTS AT SOUTH-PORT.

The London *Daily News*, of the 9th inst., gives the following account of experiments with the new Whitworth gun:—

On Tuesday and yesterday, experiments were made on the Sands, near Southport, with a new breech-loading nine-pounder rifle gun, made by Sir Joseph Whitworth & Co., Manchester. The weight of the gun is eight and three-quarters hundred weight, and the weight of the carriage 10 cwt. Both gun and carriage are made of the fluid compressed steel, commonly called "Whitworth metal." The well known advantage of the material is its ductility and much greater strength as compared with ordinary steel cast in ingots. Instead of trying to hammer cast steel into required solidity, Sir Joseph Whitworth's method is to subject the molten metal in its fluid condition to hydraulic pressure. Particles of air, commonly remaining in cast steel, are thus got rid of. No amount of hammering might have sufficed to render it sound, but it is found that by exerting a pressure of twenty tons per square inch upon a fluid column of steel, in five minutes the column will become shortened as much as half an inch per foot of length, this diminution showing that something other than solid steel has been expelled. Experiments has shown that, whereas a pressure of eight tons per square inch will produce an ingot free from air cells, yet a pressure of 20 tons per square inch is necessary to render the steel as strong and ductile as it is required to be. Having obtained a perfectly ductile material many times stronger than iron, Sir Joseph Whitworth is enabled to enlarge with safety the powder chamber of his guns. Being able to bear the strain, the chamber of the breech can be charged with a much greater weight of powder than is practicable in other breech or muzzle loaders, and thus the length of ranges can be increased.

The weather throughout Tuesday, although fine was unfavorable to good shooting, a strong head-wind blowing in gusts from the south-west. At the same time the makers of the new gun must be congratulated on the accuracy and steadiness of the

firing, conducted as it was under very adverse conditions. The experiments commenced with five rounds of common shell, 9lb. weight, at an elevation of three degrees, and with a powder charge of 2½lbs. The longest range effected was 2,030 yards, and the shortest 1,800 yards, the deflections varying from one foot to eight feet. This was followed by the firing of ten rounds of common 9lb shells, at an elevation of ten degrees, and with a powder charge of 2½lbs. The longest range effected was 4,368 yards, and the shortest 4,251 yards with deflections chiefly to the left, varying from 1½ yard to 6 yards. Ten rounds of solid shot were fired at an elevation of 40 degrees with a charge of 2½lbs. of powder, when the extraordinary range of 10,320 yards was made with a deflection of only 41 feet. Every one of the shots were projected upwards of 10,000 yards. One of the most interesting experiments was made to show the strength of the metal. A cylinder, similar in every respect to the breech-end of a nine-pounder muzzle-loading gun cut off at the trunnion, was loaded with one and a half pounds of powder, the charge being screwed into the chamber by means of a powerful steel screw, thoroughly well lubricated, and through the centre of which a hole one-tenth of an inch in diameter was made to permit the escape of gas. The visitors all stood at a reasonable distance whilst the cylinder was discharged, and when fired it produced a strange rushing sound, more resembling the noise occasioned by the sudden discharge of steam from an engine than an explosion of gunpowder. The cylinder was thrown forward several feet and the sand was blackened for many yards by the escape of gas; but when unscrewed the cylinder was uninjured, and, strange to say, two rings of fat which had been placed in the chamber were not melted. The only result was the widening of the vent to exactly double its original diameter. At an elevation of three degrees the results were—1,928 yards, no deflection; 1,911 yards, deflection one foot to the left; 2,030 yards, deflection three feet to the left; 1,860 yards, deflection one foot to right; 1,925 yards, deflection eight feet to right.

The concluding experiment of yesterday was intended to ascertain the penetrating power of the shot, and for this purpose a steel target three inches thick was fixed in a sand bank 100 yards from the muzzle of the gun, and at an angle of 45 degrees. The charge of powder being 2½ lbs. and the projectile shells, without bursting charges, of 9 lbs. weight. The first shot hit the target obliquely. The second passed over it through a sandhill, and was found in a pool of water 150 yards off. The bullet was again placed in the gun and fired at the same range, when it passed right through the target, buried itself in the sand, and could not be felt when probed for at a depth of three feet.

Yesterday the weather was somewhat unfavorable, being rainy in the forenoon and misty afterwards. The experiments of the day were, not so much directed to accuracy of aim as on Tuesday. The first had for its object to show the effect of Pettiman's concussion fuses intended to burst on the shell grazing the ground. The trial began about noon. Ten rounds of shrapnel were fired, the first at a range of 200 yards; the result was not satisfactory, owing to the softness of the sand in which the shell became embedded. It was simply for rapidity of firing, and, as above stated, without close attention to aim. Five shots were fired in fifty seconds; fifteen rounds were fired in three minutes thirty six seconds, including a loss of thirty-four seconds from three tubes missing fire.

The gun was next fired at an elevation of two degrees, and ten shots were fired in one minute, 43 seconds, or at the rate of about six to a minute. Then followed ten rounds of case or canister shot fired at a target of 28ft. by 9in.—the object being to show the destructive effects of the gun and projectiles. Therangewas 200yds, and the number of hits obtained with the scattered shot on the target was 230. In the trials for rapid firing Mr. Leeco also experimented with a new system of special naves on the gun carriage for preventing recoil. On the break being applied, and the shot fired, the recoil was only about 18 inches, whereas, on the ordinary plan it would have been about five feet. The gun was then elevated to an angle of 42 degree, with a common shell of five diameters of 13 ounces, and a charge in the gun of one ounce of powder, and the range obtained by this charge was about 500 yards. Another shot was fired with the same kind of shell at an elevation of four degrees, the result of which was equally satisfactory. It was not deemed necessary to carry the trials any further, and they were therefore brought to a conclusion yesterday.

Sir Joseph Whitworth was from ill health unable to be present on either of the two days, but was represented by his manager, Mr. Leeco, who superintended the experiments. There were present Colonel Campbell, of Woolwich Gun Factory; Admiral Halstead, Major Anderson, of the Royal Artillery; Major Dyer, Commander F.N. Ramsay, of the United States Navy; Mr. Crossley, Halifax; Mr. Ramsbottom, and Mr. Laird, &c. France and Brazil were also represented by several military visitors. The whole of the experiments during the two days were carried out with a single gun. Sir Joseph states that, in a trial of one of his breech loading guns with an enlarged powder chamber, the projectiles being six diameters in length, and made of compressed steel, and having a maximum of three inches, an iron plate four and a half inches thick was penetrated. The resisting strength of the steel of the new guns is said to be twice that of those now in use, while the economy of production is much greater. The projectiles are fixed as they are cast, and require no preparation except the ordinary dressings that all castings are subjected to. The breech of the gun is closed by a heavy sliding block of steel furnished with straight line threads or teeth inclined at a very small angle to a plane perpendicular to the axis of the gun, and forming a portion of a screw-thread which would be traced upon a cylinder of extremely large radius. The breech piece is moved horizontally by a rack and pinion, and the small obliquity of the thread causes it to tighten itself with great force against the rear of the gun. The powder chamber has been enlarged in diameter, and reduced in length, being two diameters long, and containing a charge of 50 per cent. more of powder than the service charge of a muzzle-loader. The mechanical features of the breech-loader are thus recapitulated in a pamphlet by the makers:—A heavy breech piece, with a large area of bearing surface, slightly enlarged shot chamber, and a diminished windage in the bore of the gun.

A fleet of five German men-of-war is now fitting out for a cruise around the world. The expedition will be under the command of Admiral Werner, and will be gone eighteen months. The fleet sail directly to the West Indies, and thence will proceed to New Orleans and other ports in the United States.