EVOLUTION OF LOCOMOTIVES IN AMERICA.

The question of priority in the use of the locomotive on railroads in this country is one of perennial interest. The literature on the vexed subject cemprises volumes. For the seven cities of Greece, which claim the honor of the birthplace of Homer, we have had almost as many States claiming the honorable distinction of first introducing the locomotive engine for service on the railroad. The idea of applying steam as the motive power on railroads had occurred to many of our engineers, stimulated as they were doubtless by the successful practice of England; and the introduction of the locomotive by Pennsylvania and South Carolina was almost synchronous; yet the former is fairly entitled to the distinction of priority,

Fortunately there is now living in San Francisco one of the veteran railroad men of the country, who is absolutely familiar with the interesting incidents of the early history of the railroad and the locomotive engine in this country.

The testimony adduced from these intelligent and trustworthy sources is absolutely conclusive; and it would seem that it ought to end the controversy about the claim to priority in the first practical use of the locomotive engine in this country.

1. The first locomotive engine placed and tried on any railroad in America was called the "Stourbridge Lion," and was imported from England for the Delaware and Hudson canal and railroad company. This engine arrived in New York May 17, 1829, and was set up in the yard of the West Point foundry machine shops and publicly exhibited for days to thousands of the first citizens of the country. It was brought from England by Horatio Allen, who made the first experimental trial of it at Honesdale, on the banks of Lackawaxen creek, Pa., August 8, 1829, when he "opened the throttle valve of the locomotive engine that turned the first driving wheel on an American railroad." This highly interesting statement was made by Mr. Allen in a speech delivered at Dunkirk on the occasion of the celebration of the New York and Erie railroad.

2. The first locomotive built in America for a purely experimental purpose was the "Tom Thumb," which was constructed by the now venerable Peter Cooper. This little machine was built for the purpose of testing the feasibility of a locomotive sustaining itself while running over curves, which was a mooted point among the engineers and scientists of that day. The engine weighed less than a ton, the cylinder was only three and a half inches in diameter, the boiler was about as "large as an ordinary kitchen boiler," and was vertical, with gun barrels for tubes. The first trial was made on the Baltimore and Ohio railroad, from the depot at Baltimore to Ellicott's mills, August 28, 1830.

3. The first locomotive built in America for actual service on a railroad was called the "Best Friend," and was constructed for the Charleston and Augusta railroad company. This pioneeer locomotive was built at the West Point foundry machine shops in New York City, and the work of fitting it up fell to the lot of Mr. Matthew. Immediately after the engine was completed it was placed on the company's road, and the first experiment with a train was made November 2, 1830, N. W. Darrell acting as engineer.

Some few days previous to the above date, or about the 20th of October, in accordance with a notice given in the Charleston papers, a public trial was made without any cars attached. It was on this occasion that the first American built locomotive turned its wheels for the first time on a railroad track. At the trial on November 2d the wooden wheels of the machine, which were constructed after the English practice, sprung and got off the track; but they were replaced by cast iron wheels, and on December 14th and 15th the engine was again tried and ran at the rate of 16 to 21 miles an hour with five cars carrying about 50 passengers, and without the cars it attained a speed of 30 to 35 miles an hour. In the Charleston *Courier*, March 12, 1831, there is an account of a later trial of speed of the "Best Friend," on which occasion, the writer remarks: "Safety was assured by the introduction of a barrier car, on which cotton was piled up as a rampart between the locomotive and the passenger cars." The second locomotive for service built in this country was called the "West Point," and was for the same road. It was also constructed at the West Point machine shops.

4. The first locomotive built in America for a northern road was called the "De Witt Clinton," and was the third American locomotive. It was for actual service on the Mohawk and Hudson railroad. This engine, like the others, was built at the West Point machine shops, and was also fitted up by Mr. Matthew; and when it was completed he took it to Albany, June 25, 1831, and made the first excursion with a train of cars over the road August 9, 1831. According to Mr. Matthew's statement, the "De Witt Clinton" weighed 3½ tons, and hauled a train of 3 and 5 cars at the speed of 30 miles an hour. It is especially noteworthy that both the cab and the tender of the "De Witt Clinton" were covered to protect the engineer from the weather—a "happy thought" of honest David Matthew, for which all American engineers at least ought to hold him in kind remembrance. About the middle of August the English locomotive, "Robert Fulton," built by the younger Stephenson, arrived and was placed on the Mohawk and Hudson road for service in the middle of the following September.

These locomotives had been used and fairly tested both on the southern and northern railroads, and the necessity for a radical change in their construction had become evident. Very soon John B. Jervis devised the plan of putting the truck under the forward part of the engine to enable it to turn sharp corners easily and safely. The machine so constructed was called the "bogie" engine. The first of these engines ever built was for the Mohawk and Hudson road, and was called the "Experiment." It was put on the road and ran by Matthew, who says it was as "fleet as a greyhound. The "Experiment" had been built to burn anthracite coal solely; after a while it was rebuilt and adapted to the use of any kind of coal, and its name was changed to the "Brother Jonathan." Shortly after these changes had been made the English locomotive "Robert Fulton," belonging to the same company, was also rebuilt and furnished with the truck, and named the "John Bull." The "Brother Jonathan" was a remarkable machine for those pioneer days. Mr. Matthew says of it: "With this engine I have crossed the Mohawk and Hudson railroad from plane to plane, 14 miles, in 13 minutes, stopping once for water. I have tried her speed upon a level, straight line, and have run a mile in 45 seconds by the watch. She was the fastest and steadiest engine I have ever run or seen, and I worked her with the greatest ease." This is certainly wonderful speed, and may be, as Matthew earnestly maintains it is, the fastest time at least on the American railroad record.

In comparison to the splendid and efficient engine of today, our first locomotives, built after the English model mainly, were clumsy and crude machines. Since then our improvements have been manifold and extraordinary, and the American locomotive is now pronounced the most "perfect railroad tool in the world." Its exquisite symmetry and flexibility, and its extraordinary powers must fill the mind of a veteran like Matthews—who has watched its growth from its infancy in this country—with feelings of generous admiration and pride. The English and American railroads and locomotives are strikingly contrasted by a writer in *Harper's Magazine* for March, 1879. English roads are short, solid, straight and level, and laid with the best rails in the world; and their massive and powerful, and rigid-framed engines are thoroughly adopted to those perfect roads. On the contrary, the American road is generally of great length, and being necessarily cheap it "goes as you please." Over these eccentric roads the American locomotive adjusts itself to every change of level both across and along the line; it takes curves that would be impossible for the rigid English engine; and, finally, it runs over a crazy track, up hill and down, in perfect safety. It has been well said that all that the English engine can do on a perfect road the American engine will do; and much more than this, it will do work on any road, however rough, hilly, curved and cheap. The name of the first American locomotive seems to have been inspired, for it has in the largest sense proved our "Best Friend."—*Cal. Scientific Press.*