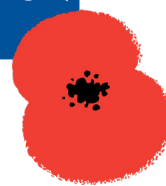


HARRY BREARLEY



Harry Brearley was born on 18 February 1871 in Sheffield. Like many children who grew up in the city, Harry was the son of a steelworker. When he left school at the age of twelve (leaving school at an early age to go into employment was not uncommon in this age) he became a labourer at his father's steelworks. In later years he would go to be promoted to the post of general assistant in the company's chemical laboratory, where he began to work in metallurgy.

Harry worked hard at the lab but also studied at home and in evening classes, learning how to specialize in steel production techniques and chemical analysis. By his early thirties Harry had earned a good reputation in the industry.

Industrial change

All through the 19th century, Europe had seen a massive industrial transformation which helped to bring about many new scientific inventions. Developments in metallurgy (the study of metals), chemistry and electricity led to new forms of explosives, made firearms more reliable and also led to a revolution in communications with new inventions such as the electric telegraph.



It was in 1908, when two of Sheffield's two biggest steelworks decided to jointly launch a new research laboratory, that Harry was asked to lead on the project. He went on to join Brown Bayley's Steel Works (also in Sheffield) and he became a director of the firm in 1925.

The science of war

Arms manufacturing had increased massively just before WW1 but there were many practical problems because of the erosion of gun barrels. As a prominent Metallurgist, Harry began researching new steels which would not erode at high temperatures. He tried adding extra chromium to the steel to see if this would help preserve the barrel casing for longer.

The accidental discovery

When at the testing stage, he discovered completely by accident that this new combination of traditional carbon steel and chromium was very resistant to chemical attack and he immediately named it 'rustless steel'.





Being from Sheffield, 'The Steel City', Harry saw the potential for the new metal to be used in cutlery and household utensils. Until now, household cutlery had been made from other metals, including silver.

As well as making cutlery quite expensive, it also meant that all food that was eaten had an odd taste of metal that came with it.

Today stainless steel cutlery is commonplace, with a whole host of other items being made from Harry's invention, from kitchen sinks to tea sets due to its malleability, affordability and the fact that it does not react when it comes into contact with cleaning products. It is also widely used to make medical equipment.

Charity

In 1941 Harry Brearley created a charitable trust The Freshgate Trust Foundation. The Foundation is a grant making charity operating in Sheffield and South Yorkshire which aims to help out people from 'modest' circumstances like himself to experience travel, education, the arts and music.



Questions

1. Where was Harry Brearley born? (1)
2. What was Harry's first job after leaving school? (1)
3. How do you think Harry became an industry expert in steel working? (2)
4. What is metallurgy? (1)
5. What did Harry try adding to the steel to improve it? (1)

Extension Questions

6. What was the name of the Steel Works Harry became a director of? (1)
7. What was the original name for Harry's invention? (1)
8. Name two household items that stainless steel can now be used for. (2)
9. What is the name of the trust Harry set up after the war? (1)
10. What are the activities the trust wishes to help people with? Name at least two. (2)