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"Fremad og Opad"

p. 194

1923

Class "B"

1st Prize

Class B.

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"Discuss the part played by Steam Power in the building up of the British Empire".

1. England's State prior to "Steam Power" era with regards to:-
 - a. Industry
 - b. Communication and transport
 - c. Combustion
 - d. Labour
2. Similar State of England's Colonies at that time
3. Its Invention 1769. George Stevenson's Locomotive later 1814.
4. England, how she adopted steam, for her factories, steamers, and later for trains.
5. England obtains Links of Empire. Navy benefited.
6. The rapid increase of England's factories urged on colonies' progress. Greater activity at sea
7. How England looks to her various colonies for material. Articles she manufactures and exports.
8. England's Present State compared with that prior to development of Steam Power.

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9. Similar Comparison of the States of her colonies
10. What steam has done.

We know that Hero of Alexandria used steam power to drive a machine in the year 120 B.C., and years later, Branca, the Italian, invented a wheel, which revolved by means of steam; but after that the power seemed to vanish and centuries passed by before its true development. We do not know why so many years slipped by before its third inventor developed its power, there is no one to tell us; the development of Steam Power is like the development of mankind, a mystery of mysteries. What was England before the great Steam Power Era? A little isle set in a silver sea, covered with thick forests, clothed with stretching flower-dotted plains. Wherever a rushing stream scampered from a higher to a lower bed, there revolved a water-wheel setting machinery in motion which slowly ground corn. By the side of many a little knoll stood a wind-mill, stretching its arms to any breeze and setting wheat-grinding machinery in motion. Animals were also employed for crushing wheat by walking continually

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in a circle. Inside the little cottage, sat a patient spinner, throwing the shuttle through the old hand-loom, and competing with his or her neighbour in producing the best woven article, irrespective of patience, time or cost. All machinery was hammered by hand, all pottery were made by hand. Man harnessed the forces of Nature to work for him, but Nature is fickle, man was often baffled, it was not progressive for Nature to be man's servant. And what was England's navy? Even in those far off days England "sea-birds" guarded her coasts, but they were frail little vessels, relying on Nature's winds to blow their sails, but they tossed fearlessly on the high seas, for although Steam Power has altered the Body of the Navy, that unquenchable, dauntless spirit remains unchanged, that spirit that gamed for those tiny wind-propelled vessels, England's "Hearts of Oak." All Englishmen used forest wood for combustion, and the forests were disappearing, no coal could be used, the munes were swamped. Communication and transport in those days were very difficult and uncertain. The old stage coaches and carriers transported the mail and passengers from place to place, but how many dangers lay ambushed

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in the woods which bordered the "roads". They were not "roads"; they were mere tracks which rendered travelling doubly difficult. And such was the state our "Land of Shopkeepers" before steam power was again introduced and adopted.

The States of Englands few colonies at this time were similar to that of England. Her colonies were few, they consisted of Gibraltar and Malta, Hudson Bay Territory, Nova Scotia and Quebec, Trinidad the Windward and Leeward Groups of Islets, ^{Canatic and Bombay} Most of these colonies were covered with forests, but here and there a single farmer cleared a field and sowed, cultivated and reaped his crop by hand. All labour was manual. Travelling was as difficult and as inconvenient as in England. The roads were bad, those in the warmer territories being swamped during the rainy seasons. Competition was dull, trade was little. To sum up; England and her colonies were in an uncertain state rendered so by the Industrial Revolution which was beginning to make itself felt; England and her colonies were waiting, ~~for~~ what? ~~for~~? They were waiting for a power.

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In our baby days we were told of a little boy watching the lid of a kettle move, and when he became a man how he discovered what made the lid move. Little did we realize then what a great power was concealed in that black kettle and likewise did the world ~~really~~ ignore and banish all thoughts of steam power but at last its power was proved when James Watt, in 1769, invented his machinery, and set it in motion by means of steam power; and steadily onwards did steam power force its pace against worldly conservatism. James Watt had proved the power of steam and gradually men wakened to the realization of its power, as Watt said about his works, "We sell what all the world is wanting". Then England adopted steam power. In a much later date George Stevenson found steam to be as well a motor power by inventing the first locomotive, The Rocket; and gazing, with admiration, as it ran upon the iron rails from Stockton to Darlington. The foundations of steam power were laid; the power resembles a great octopus stretching forth its numerous willing limbs into every crevice to be of use and benefit to all.

History of Road

Then a few of England's enterprising capitalists bought machinery of the same kind as the inventor's, and set it under a roof, obtained raw cotton, employed other hands, and thus produced manufactured cotton goods, this was the origin of the factory. It was realized that steam was brought about by combustion, and with steam-manufactured machinery, the workmen pumped the water out of the coal mines, men flocked to the coal fields to obtain labour, and thus the fields became thickly populated, industrial centres. Others obtained labour by packing the coal on to the trolleys which took it away to feed the rapidly increasing factories. Coal was the factories' food. Then Mac Adam, like the rest of his fellow beings, intent on improving conditions and giving steam power a freer passage, noticed the trolleys toiling on the rough tracks that served as roads; so he introduced a fine method for constructing good, hard roads, and thus the roads of England were improved so that the factories received the coal from the mines much ^{more} quickly. The textiles were manufactured by the new, spreading power and all machinery, furniture and hardware was manufactured by

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the same means. The new roads rendered communication, transport and travel easier and quicker. Then England gazed from her modern land state to her navy. Could not steam be used to drive those vessels and render them independent of the uncertain winds? Yes, soon the sails were gone and new vessels, "steamers", sailed the seas; vessels that accomplished long journeys in an incomparable space of time. Steam power was applying itself to all England's offices, naturally when the iron steam driven horse ran on iron rails at thirty five miles an hour England scorned her slowly moving, toiling horse-pulled trolleys and built iron rails from the coal fields to the factories and to the coast. Her chief motive was Trade, the rapid development of steam power organized that aim and increased it.

England's factories grew, each man was busily occupied with some small step leading up the progressive stair-case to Trade. But England could not produce material for her insatiable factories who cried out for raw stuffs, as the factories grew the cry grew louder what was England to do to satisfy them? She turned to her colonies. Away sailed her ready "steamers" and returned with raw cotton, sugar, tobacco, timber and cereals, these were off-loaded at the coast

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and sent by steam driven locomotives to the factories. Again the steamers returned to the expectant colonies and again received raw materials, and the colonists began to produce greater quantities of material, and they longed for a means whereby to produce and send to the ports of call their productions quicker and more easily and now that communication was being carried on so rapidly by steam driven ships they soon learnt of steam power and they adopted producing machines driven by steam, and improved their roads. And thus trade increased between the mother land and her colonies, increased rapidly the competition became extremely keen and the activity at sea greater. Gradually the colonies, anxious to follow in the home-land's footsteps introduced steam driven machinery and set up their own factories and transported their goods by the steam driven trams.

But the steamers were incapable of travelling more than seven or eight hundred miles without renewing their coal supply, so England obtained port-holds, or coal-holes, at which her trading steamers might bunker, and to-day she possesses "Links of Empire" at suitable distances from the lands

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with which she trades. Steam power has abolished "scurvy" for now refrigerators kept cool by steam, preserve fresh food for the passengers and crew.

England still looks to her big sons for raw material, her demand has been greatly accelerated since the Great War by the mother land adopting the late Rt Hon. Joseph Chamberlain's Method of Preference Tariffs as a reward for the ready help the sons gave when the mother land gave her distress signal. Naturally the colonies have followed suit and now manufacture many articles that the factories of England manufacture but their chief drawback is lack of coal. To-day the factories of little England produce the following articles all manufactured by machinery made by steam power and driven by steam power. She manufactures glass, reflectors, pottery ware, hardware, the four textiles, flour, chemicals, steel tools, every thing from a pin to a railway engine every sort of manufactured article. Steam power played an active part in the past great war by producing ammunition and driving enormous Battle Ships. All these articles England's Sea Traders driven by steam, transport to the colonies in return for the many various productions

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produced in every band of climate in the British Empire.

Steam Power has been developed to its fullest extent and now gaze upon that prosperous little isle. She has let Nature loose, man is man's servant, steam power is Lord of all manufactures. England is a world of industry and business, trade and prosperity. She is linked from end to end by steam driven trams, steam propelled traction engines repair her roads. Steam drives her ships to trade with lands afar, steam drives her little ships to fetch fish from the fishing boats. Steam sets in motion her stern men-of-war, steam drives all her machinery the foundation of trade, how contrary steam power has rendered customs to the single spinner, the farmer, the tiny sailing vessel, the old stage coach.

Steam power has had the same effect upon her numerous colonies of to-day, Australia, that island-continent is traversed by a railway which brings from the desert regions the valuable minerals and from the fertile bands raw material to the coast from whence they are shipped to England. Canada that enormous colony is traversed by the Canadian Pacific Railway which takes her productions

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to the Atlantic and Pacific Oceans. Her wheat producing prairies are ploughed, their crops sown and reaped and manufactured by steam driven machinery, and she sends to England raw stuffs, timber included. India, that lurking golden phantom hiding in the weird East is one of the most progressive colonies. Although the old ~~sq~~ spinner squats outside his native hut throwing the shuttle through his hand loom as his ancestors did centuries before him, yet there stands a great cotton factory as up-to-date as those in Manchester, producing beautiful textiles more cheaply than those at home. India knows the service of steam power. Rhodesia, the mother-land's Baby son, is fast progressing, she is lured by the steam horse with the ports and she imports her wants and exports her gold, copper, tin and asbestos to the factories of England. And all England's colonies, every one has been vastly effected by the willingness and greatness of steam power.

Now think of the Power of Steam and its mission in building and connecting the British Empire which consists of one fifth of the land on the surface on the globe, our great fine Empire upon which the sun never sets, upon which a shadow of darkness is never

Tremendous Power.

cast. Surely we realize by comparing the British Empire's Condition prior to the development of Steam power with her condition to-day, that Steam Power has been the chief agent in bringing our Empire up to its present standard. Steam found England and her few colonies backward and remaining backward, not making great leaps to clutch at prosperity, steam has fought against its enemies has never deserted and has secured for the British Empire the uppermost place of Western civilization and power. But man has found two other powers and already many vehicles are driven by petrol and even some trams are now worked by electricity. So we seem to see man's willing servant, steam power, shrinking at the sight of the Powers of Petrol and Electricity, taking a last look upon man's earth on which it worked its marvellous ways and sinking slowly back into the little Kettle from which it emerged so long ago to be of such great service to mankind.