must say, as far as I know, we often hear of mischief resulting from a too free observation of lobsters upon those occasions. (Laughter.) But Mr. Watt observed his lobster to some purpose, and he learnt from the construction of its shell a great mechanical secret, which he applied to the solution of an important problem for the comfort and well-being of his fellow-citizens. Sir Isambard Brunel, in placing the Thames Tunnel, took his lesson from a very insignificant personage, and yet a personage wise enough to teach him more than he had known before—I mean that personage whom we know by the name of the earth-worm, for it was the manner in which he, I believe bores the earth that suggested to Brunel the mode of making that very remarkable work the Thames Tunnel, with which his name is associated. Take, again, the case of Mr. Stephenson. I believe Stephenson was content to learn from the bone whatever he did learn with respect to the construction of the tubes with which his name is connected. But there is another name which I hope will always enjoy a high place in the history of British art; and I am glad to quote it, because it is eminently connected with what I may call the loving observance of nature—I mean the name of Wedgwood; and I don't believe a greater name is to be found in the history of art in this country. Wedgwood was one of those who had begun, as we may say from nothing; and I trust there are many that are now beginning from nothing; that there are some possibly in this hall that are making their commencement from nothing, but yet that are destined to leave a name honourable in the annals of their country. (Applause.) You all know that the industry and skill of Wedgwood were directed to applying those clays and earthen materials which in this country abound to the formation of pottery and porcelain, especially of porcelain. Well, now, it is recorded in that most valuable work of Mr. Smiles—perhaps as valuable as his *Life of Stephenson*—which is designated *Self Help*, as one of the earliest of the stages of Wedgwood's operations, that while he was still a mere labourer and hardly of full age he used to make earthenware knife handles in imitation of agate and tortoise-shell, and table plates in imitation of lemons, and vessels to hold pickles in imitation of leaves and like articles. And I do not believe there is one of those things that proceeded from the hands of Wedgwood that is not at this moment worth, in any shape where it may be exhibited for view, six or eight times the price which Wedgwood himself put upon it. All I can say is, that I saw to-day, in a shop in this town, two little black cups which Wedgwood would have put up at 4s., or 5s., and the price asked for them—which was, no doubt, a moderate price, and the dealer had a right to ask it; but the price asked was £2 10s. (Laughter.)

ORIGIN OF THREE OT THE MOST PRIMITIVE HUMAN INVENTIONS.

I want to show the truth—the broad truth—of this doctrine, that in the observation of nature lies a great part of the means of scientific progress—will you allow me to go back to the rudiments, to the very cradle of the whole matter, and ask your opinion, promising to give you mine at the same time, of three of the most primitive of human inventions—the most primitive, but the most fundamental, and lying at the root of all social progress? I mean these three—the oar, the wheel, and the plough. The history of these inventions is so old that it is lost in the darkness of antiquity. It is hardly possible to obtain historical vestige of that which so entirely belongs to the primitive history of mankind, and therefore they are matters of speculation. I think they are matters of interesting speculation; and if it be true that man in his infancy learned from the observations of nature, depend upon it nature has not told all nor a twentieth part of her secrets. She has a great deal more to tell for the benefit of those who come after us. (Applause.) Well, now, I believe there is little doubt, judging from such considerations of indirect evidence as can be brought to bear upon the question, that the oar—the instrument by which men passed from one continent to another, and from one island to another, a process otherwise impossible—that the oar was simply learned from the motion of the wing of a bird in cleaving the air. How came the wheel? I believe the wheel was learned from observing the circular motion of certain birds, and particularly of one description of hawk when in its flight—a description of hawk which, in the Greek tongue, still bears the name from which our word "circle" is derived. Well, then, thirdly, I come to the plough. Now I must confess I think it is a question of great interest to know how it was or how it probably could have been—I don't mean that it admits of demonstration—how it could have been that man should have been directed to the use of that most valuable instrument the plough; because, if we consider ourselves in a primitive condition, it is by no means a simple or obvious matter. One would think a man beginning with the use of his hands, and going on with the use of some stick or pole, or some simple form of instrument, he seems to be a long way from the idea of the plough, which is rather an artificial formation, and supplies the double motion of direction from behind, traction from before, and then, again, a somewhat complex form of instrument. Gentlemen, I am not presuming to dogmatize, but I do believe that the most probable account that can be given of the invention of the plough is this, that it was founded on an observation which, perhaps may excite your mirth—upon the observation of that which is done by a very humble but useful animal—that which is done by the snout of the pig. (Laughter.) Now, owing to the practice that prevails of disabling the snout of the pig from the operation by inserting into it something that makes it very inconvenient for the pig to use the weapon with which nature has provided him for the purpose of turning up the ground, one does not often have an opportunity of observing it. But, if you will take the opportunity of observing the action of the pig when he gets upan the turf, with his snout free (laughter,) and when he has a mind to plough (renewed laughter), you will perceive that he is an excellent ploughman. (Laughter.) I don't mean to say that he runs his furrows quite as straight as it is desirable that the human ploughman should; but the idea of turning up the ground, which was what man soon found was necessary in order to bring in action the power of the atmosphere, and make it fertile for his purposes, is an idea the pig fully understands, and when he is free from that ring that annoys him, he constantly puts it in practice. (Laughter.)

THE PURSUIT OF SCIENCE A MORAL AND SOCIAL LEVER.

If the pursuit of science and if the observation of science have thus been of use to human industry and to the fabrics which it produces, it is also, I must say, no small satisfaction to us to reflect how often it has been the means of bringing forth from an obscure and lowly lot those who deserve to be eminent among their fellow-citizens. We have seen such men as Robert Stephenson, such men as Faraday, such men as Sir Humphrey Davy, such men as Hugh Miller, so lately taken from us—beginning life in the condition of labourers, but ending in a station that was eminent in the face of their fellow-countrymen. (Applause.) We have seen others, such as Watt, such as Crampton, beginning their services humbly—services in a manner that have contributed in a degree it would be impossible to describe to the general wealth and power of the country. We have seen Arkwright and others themselves reaping a large share of the rewards and benefits they had procured for others, and becoming the possessors by the most honourable means—by means most beneficial to the country as well as to themselves—of colossal fortunes. And I do not desire, in mentioning the progress achieved by individuals, that we should appeal to merely selfish motives. It is not the mere possession of money that constitutes the benefit. It is not the mere rising of this or that man that constitutes the benefit. It is the healthy action which is communicated to the whole social frame (hear), in a country where class mixes with class, where no man can stand simply upon tradition, although tradition is justly respected here; but where the very lowest and humblest of the community, by diligence and perseverance, by making a full and regular use of the gifts which Providence has committed to him, may bring himself forward into the foremost ranks, and thereby not only reap advantages for himself, but may yield to others an example that will again become the spring and the spur to an honourable industry. (Applause.) I for one admit, and would be among the foremost to assert, that all the material advantages that are to be derived from the observation and careful study of nature in her many kingdoms, would not only lose much of their value, but would lose it all—nay, that they would be converted into curses to mankind—if it were true that the moral influence of such studies was deleterious. It would be in vain that you should establish a dominion over the brute forces of the world if in establishing that dominion you were only to increase the moral disorder that unhappily prevails among the children of mankind, and to render our restoration from that disorder more hopeless and more difficult than ever. But I must say that it is a perversion of those studies, and not their natural use, which alone can make them poisonous to man. (Applause.) Their natural use—their proper and their legitimate tendency—surely, is to teach all the qualities, or, at any rate, many among the qualities, that best befit our dependent position. When a man comes to study and observe the kingdom of nature, he finds himself in contact with vast and gigantic forces that he cannot for a moment resist. He feels himself absolutely in the power and at the disposal of an Almighty Being, and he sinks into humility before the majesty of that Being. (Applause.) But while he thus learns humility, and while he might almost be appalled by the evidences of power,—on the other hand, he sees those cheering proofs, multiplied from every side, of beneficent design, which encourage him to repose a filial trust in the goodness of that God who has so richly throughout the natural kingdom provided for the support, the comfort, and the advancement of human nature. (Loud applause.) And if we are told that intellectual pride is to be the result of scientific knowledge, all I can say is that intellectual pride was not its result in the mind of Bacon, in the mind of Newton, in the mind of most of those great men who have most faithfully and successfully dedicated them-