PUBLIC OPINION.

THE FUTURE OF ELECTRICITY.—In all the fields of human endeavour there is none in which the promise and potency of future achievement is greater than in that of the development of that wonderful form of energy which we know as "electricity." In this field progress is advancing in two paths; the one leading to the produc- of the force cheaper than by known means, and the other towards new devices and ways for applying it to the practical needs of mankind. The first path is the least attractive; but it leads to by far the most momentous discoveries as effecting it our everyday life. The current which now supplies our lamps and motors is obtained by revolving a coil of wire in the field of the magnet. The steam engine does this just as it turns a coffee mill, or a churn, or a lathe. Therefore, coal is burned under the boiler to produce steam, and steam drives the engine, the engine turns the dynamo, the dynamo delivers its current on the wires which lead to the lamps. Hence the efficiency of the whole system depends mainly upon the efficiency of the engine and boiler which furnish the power. The best engine and boiler does not utilize more than ten per cent. of the energy locked up in the fuel; and this is due, not to faulty construction or bad management, but chiefly because of natural laws mainly dependent upon the temperature in which we live. To improve the dynamo or the lamps simply means greater economy in the utilization of the obtained ten per cent. It does not effect the problem of how to get more than ten per cent., and that is the great discovery of the future—so great, that the man who finds the way to convert, not eighty or ninety, but even twenty per cent. of the stored energy in fuel into electricity will do more for human civilization than all the inventors of all the marvelous applications of that force put together have done since electricity was discovered.

Present indications point to the voltaic cell as the probable means of attaining this result. Not to a cell consuming zinc, of course; for electricity thus produced is about twenty-five times dearer than that obtained from the steam engine and dynamo; but to a cell directly consuming carbon, not by hot combustion, but by cool, chemical combination with the boundless store of oxygen in the air. Carbon is cheap, and air is cheaper; and if they can be made to combine at low temperature by means perhaps no more costly than the grate or furnace in which we make them unite at high temperature, than we shall get very much more than ten per cent. of the available energy. It is not necessary to seek any further reason for the end of the reign of steam. When people can get a machine which wastes even eight, or seven, or six dollars out of ten, they will no longer use an apparatus which wastes nine. All along the frontier of the science, open innumerable paths with endless vistas fascinating in their invitations to the student and to the inventor. Even in the oldest of our electrical marvels (the telegraph) the possibilities are still wonderful. A pen guided in in Chicago will now write in New York the autograph of the operator, so that a bank might safely pay the check to which it is appended. We are multiplying the number of dispatches which can be sent simultaneously; and we are rapidly approaching the time when unlimited messages can be transmitted at perceptibly the same instant in opposite directions over a single wire. We have contrived systems of communicating time which will possibly enable a thousand clocks at once