"Nine years ago the late Mr. John Fowler first exhibited his steam plough at the Royal Agricultural Society's show at Chester. For five or six years afterwards it was doubted whether steam ploughs would 'pay.' Now they are made and worked by hundreds. It is a sad recollection that he, who did so much to conquer this success, should have been cut off so early from the enjoyment of his triumpth. Steam locomotion on common roads, although a recognised practicability now, is still hanging fire, but it has gained much over the 'pooh-poohed. Let us hope that coal-cutting machines will gain even as much in commercial confidence. They must, we can't help thinking, yet take the place of those subterranean slaves, the 'putters and sinkers,' and we hope the time is not further off than that when all town sewage will be returned to the land, instead of being cast into the sea."

"The gas engineers have learned much within a few years, and this amounts to a modification of opinion among them. It is now years ago since Mr. Grafton opened the way to the use of clay retorts by employing an exhauster, a thing which no gas company would, if they could, now dispense with. But it was not so long ago when gas engineers were shy of clay retorts, and had a series of objections—many of them imaginary—against them. They could not, they thought, get so much gas from a tun of coal in clay retorts as they could from iron, and then, it was said the clays required more coke. But an iron retort is now becoming as much of a curiosity as was the jaw bone—famous two or three years ago—of Abbeville. See, too, how the gas engineers have taken to iron oxides for purification and to the sulphuric acid treatment for ammonia."

"It impoverished the gas, they said, and they still believe, justly no doubt, that it has entailed upon them the plague of napthaline. We wish one reform in gas works, and in spite of hostile opinion it will, like every other sensible and proper thing, yet prevail. That is, apparatus for charging and drawing the retorts, so as to dispense with the pachydermatous salamanders now employed at that task."

"The introduction of what Dr. Ure very properly termed automatic machinery in the making of guns and of locks, uprooted a world of trade prejudice, and overcame something even of professional misgiving. It is not so long since there were many to doubt 'whether, on the whole, such machinery could be made to compete successfully with hand labor, taking all the requirements of these trades into due account.' But there is no room for doubt under these heads now. It has been somewhat the same with wood-working machinery."

"The cotton manufacture has seen successful changes, also, in the machinery not long ago employed. Self-stripping cards are common now where, ten years ago, both breakers and finishers were always stripped by hand. Messrs. Hetherington's self-acting mule, too, has hardly one-half the parts, if indeed as many, as were originally embodied in Richard Roberts' great invention. Cotton spinners are notoriously jealous of revolutional mechanical devices, yet the old mules are being superseded. A great change, too, has been wrought by the Blackburn 'slasher,' which, within a small space, does almost ten-fold the work of the old dressing frames. Mr. Bullough's and Mr. Taylor's inventions, too, are working their way into the weaving sheds of Lancashire. The beautiful operation of 'gassing' the yarn—an invention of the late Mr. Samuel Hall, of surface condensing notoriety—is almost too old to be instanced in this list, but, palpable as were the advantages, there were prejudices to be overcome."

"The brewers were resolute in their opposition to any invasion of the mysteries of their craft. They knew that many a vat of ale had gone off in a thunderstorm, and they argued that the damage was due to electricity, and galvanism, they thought, must be the twin sister of the subtle fluid. So they would not permit of any conjunction of iron and brass in the fermenting tuns or in the cleansing rounds. Nothing but gun metal pumps and wooden vessels would answer. It is odd that they even permitted iron hoops upon kilderkins and barrels intended to be tapped with brass cocks. It was nothing that more than one chemist had passed currents of electricity through barrels of beer, and, although he might have decomposed a little of the generous liquid, it was none the worse for the experiment. Now the brewers have mashing machines, attemperators, cast iron boiling backs, and even slate fermenting squares—yes, *slate*. And there are centrifugal pumps and india-rubber hose, yeast presses, and one or two enterprising brewers have tried hop digesters, hop separators, and spent hop presses—with what result we will not undertake to say; but it is evident that the brewers, interested, like other people, in making money, are no longer jealous of anything that promises a real improvement. So it is with the sugar refiners, and so also with the millers. But for a few formidable patents in their way, the latter would all be using decorticators, ventilated millstones, and stive rooms, and grinding, perhaps, twelve or fifteen bushels of wheat per pair of stones per hour."

"It is in the success of what was at first believed to be doubtful or impracticable, that engineers gain confidence, and although the fact remains that many so-called inventions are really impracticable, or useless from other reasons, it does not the less follow that many new things which men of narrow views and scanty knowledge may believe to be impracticable, are nevertheless but waiting their time of success."

A CONVENIENT PROCESS FOR PREPARING OXYGEN.

From the latest-received number of the *Annalen der Chemie und Pharmacie*, we translate the following article, which was written by M. Fleitmann:—

"The easy preparation of oxygen for technical purposes is a matter of considerable importance, and I now shortly describe a process which possesses particular scientific interest. I was led to the process by observing that on heating a concentrated solution of chloride of lime with only a trace of freshly prepared moist peroxyd of cobalt, the hypochlorite of lime was completely decomposed into chloride of calcium and oxygen. Repeated