nil on the baser metals, but attacks the gold. We now come to Dixon's paper, which was read before the Royal Society of New South Wales in August, 1877. It was a paper as to the method of extracting gold, silver, and other metals from pyrites. It first deals with that which was and is a common knowledge—namely, that precipitated gold is soluable in cyanide of potassium if exposed to the air, and, after alluding to Rae's American patent and other matters, he makes this most significant statement. He says: "There being, therefore, no method by which the precious metals could be removed and the baser metals left, it remained to fall back on one of the first principles of metallurgy—viz., to remove the baser metals at the earliest stage, if possible, and leave the precious metals as a residue." Now, this is exactly what the plaintiffs by their invention have shown should not be done, for they remove the precious metals by their invention at the earliest stage and leave the base metals as a residue. And yet the defendants' witness, Vautin, as also Mactear, cite Dixon's paper as possibly the best publication they have to show what they want to establish as to prior general knowledge. In our judgment, this paper of Dixon's is cogent evidence in favour of the plaintiffs, and equally so against the defendants. Now we come to Simpson's American patent of 1885, which was published in this country prior to the plaintiffs filing their provisional specification. In our opinion, of all the documents put in, when understood, this is the only one which even approaches the point which the defendants put them in to establish. It is a chemical patent for improvements in the processes of extracting gold, silver, and copper from their ores. From it, as in the other specifications, no results were ever attained. But, nevertheless, it is necessary to see what information it imparts to the chemical world. By his specification Simpson first of all crushes the ore. This is common to all extractions of gold. He then mixes the crushed ore with his solution in a tub or bath, and he then allows the mixture to stand until the solid matter is settled and the solution is clear. He then precipitates the metal—*i.e.*, the gold which is in the solution—on to zinc. The solution, which he uses for either gold or copper, is made of cyanide of potassium and carbonate of ammonia—viz., 1 lb. of cyanide of potassium and 1 oz. of carbonate of ammonia. He says (we assume pointing to Rae's patent) that he is aware that cyanide of potassium when used with an electric current has been used for dissolving metal, and also zinc has been employed as a precipitate, and the use of these he did not wish to be understood as claiming broadly. He also was aware that carbonate of ammonia had been employed for dissolving such metals as are soluble in a solution thereof, and the use of this he did not claim. "What I claim," he said, "as new is the process of separating gold and silver from their ores, which consists in subjecting the ore to the action of a solution of cyanide of potassium and carbonate of ammonia, and subsequently precipitating the dissolved metal substantially as set forth." The question is: Does this specification add to the stock of common knowledge so as to inform men skilled in chemistry that, by the application of a very dilute solution of an extremely small quantity of cyanide of potassium alone to gold as it exists in ore in nature, when the ore is crushed the gold can be extracted therefrom, leaving behind the baser metals? It is true that Simpson's 1 lb. of cyanide of potassium is about equivalent to the margin of ½ to 2 of cyanide of potassium in the plaintiffs' specification. It appears to us, as laymen, that the compound composed of the combination of the two chemicals—viz., cyanide of potassium and carbonate of ammonia, in the proportions mentioned—is not only what Simpson was relying upon, but what is the natural meaning of his discovery as described. And it would not lead any one to suppose that a very dilute solution of an extremely small quantity of cyanide of potassium alone would do what it was supposed the compound of the two would do, and which so many desired to attain. But this part of the case does not rest here, for a body of scientific evidence was called as to this. On the plaintiffs' side many witnesses stated emphatically that Simpson's specification would not have led a chemist in 1887 to the knowledge that a solution of cyanide of potassium would act by itself as a solvent of gold in ore, and they gave *in extenso* their reasons for this conclusion. Professor Dewar stated that if he had read Simpson's patent at its date he should have understood that he had discovered the carbonate of ammonia possibly to replace the electrical current, and Professor Austen said the same. On the other side, witnesses, and especially Mr. Vautin, were also explicit that the specification would afford the information. When this evidence is weighed we have no doubt that that given on behalf of the plaintiffs largely preponderates. But there is another fact which seems to us important, and it is this: If Simpson's patent of 1885 informed the chemical world that a small quantity of cyanide of potassium in solution would extract gold from its ore, it is strange that no witness (and we cannot find one) called by the defendants has pledged himself that, before the plaintiffs' discovery, he knew that a very dilute solution containing a very small quantity of cyanide of potassium would do so. Upon this point, from among the plaintiffs' witnesses, we will take Professor Dewar, who stated, "It was not common knowledge to me that a cyanide-of-potassium solution was effective for dissolving gold from its ore"; Professor Crookes, who stated "that, up to a few years ago, his opinion was that cyanide of potassium was of no practical use in getting gold out of its ore"; and Sir Henry Roscoe, who answered the following question thus: Q.—"Did you ever hear in the whole range of your experience of that solution being obtained (*i.e.*, gold into solution from ore) by the simple action of cyanide of potassium upon metallic gold?" A.—"No, not without a current of electricity employed for dissolving it on one side and depositing it on the other." It is true that Mr. Riley, one of the defendants' witnesses, in answer to a question put by Mr. Justice Romer as to whether in the year 1887 any chemist would have doubted that if he had applied a solution of cyanide of potassium to crushed ore it would have solved the fine gold, answered: "It would if the gold was in a sufficiently divided state. It is a question entirely of the division of the gold." But this, it will be seen, did not answer the learned Judge's question, and he further proceeded: "My question to you is, Would a chemist, in the beginning of 1887, have felt any doubt that a cyanide of potassium would have solved the gold and silver?" A.—"I should have no doubt myself if the gold was in a sufficiently fine divided condition it would have dissolved it." This, again, did not answer the question, so the learned Judge asked him this: Q.—"Do you think it would have