#### Mr. Grocock,—

I was always dead against using anything but the best, therefore, I have had no experience in using common coke. Mr. Doherty did, but I think he simply did this to substantiate the statements he made that a saving in coke could be made.

## Mr. Herring,—

Would it not be possible to use good dense gas coke?

# Mr. Grocock,-

This is not satisfactory. Gas coke always carries with it a lot of sulphur, and the elimination of sulphur from the cupola is important.

## Mr. Woodley,-

I should like to know if Mr. Grocock could tell us why two bars of iron taken from the same cupola are different under test? I have seen two test bars, one cast the day before the other, from the same class of iron, show up differently, they were both the same size  $1" \ge 14"$  long, one went up to 2,200, and the other to 2,760.

### Mr. Grocock,-

That is just the difficulty. In the first part of the paper I explained, as well as I could, the uncertainty of the test coming out the same with the same process. This is one of the things we have all to learn a great deal more about. Why is it so?

My own opinion is that iron is treated by chemists as iron, although, whether it is what they call the ions or the molecular arrangement, but there is a further sub-division of iron yet to be discovered.

As I pointed out in the first part of the paper, there are always variations, although you cast two bars at the same time you seldom get identical results.

### Mr. Woodley,---

In these bars the silicon in the 2,760 was 2.3, sulphur 1.19, combined carbon .56, and in the 2,200, silicon 2.49, sulphur 1.80, combined carbon .48.

#### Mr. Grocock,-

I would almost venture to say that the bar which contained