SCIENCE NOTES.

An apparatus for the determination of melting points has been described by Mr. C. F. Cross and Mr. E. J. Bevan. It consists of a small platform of thin ferrotype iron or silver, having an opening for the reception of a thermometer bulb, and a small indentation or depression. A very small quantity of the substance is melted in the little depression, and while still liquid, a thin platinum wire, bent like an L and fused in a glass float, is immersed in the liquid and held there until the substance solidifies. A thermometer is then inserted in the opening and the whole apparatus plunged under mercury, which is gently heated, and the thermometer meanwhile is carefully watched. When the substance melts, the float rises instantly, and the temperature is noted.

One of the chief defects in the arc electric light is the slight unsteadiness arising from imperfect regulation of the carbons. M. Saligmac, one of the most active electricians of Paris, has discovered a new regulator which was to be one of the curiosities of the *grande soiree* to be given at the Observatoire on March 18. Each of the two carbons is supplied with a parallel rod of glass, to which it is attached in a solid manner. These two rods being placed horizontally, are pushed by a spring, and the spark is lighted between them. But between the two glass rods there is a glass stopper which is warmed by the light in such proportion that the rods yield gradually to the pressure of the springs, and the carbons can approach each other, as is required for the constancy of illumination. A correspondent of *Nature*, who witnesed some preliminary experiments, states that they were a wonderful success.

The Professor and the Inventor.—The following is a good story about a well-known professor, which may go to prove that even great physicists are liable to error.—The professor was showing a party of ladies and gentlemen over some large works at Birmingham, chiefly engaged in the manufacture of complicated optical instruments. The party came across a very ingenious instrument, the working of which the professor proceeded to explain. In the midst of his exposition, a roughly-dressed young man, standing near, struck in, and civilly pointed out that the man of science was quite mistaken in his notions as to the instrument in point. The professor, whose weak point is not an excess of humility, angrily maintained his own view, but did not succeed in convincing his opponent, who finally shrugged his shoulders and walked off. "Who is that—that *person?*" asked the professor, indignantly, of a workman standing by. "Oh! that is Dr. ——," was the reply; "he invented that instrument you have been looking at!" *Tableau.—Quiz.*

Sir W. Thomson showed in his inaugural address last year to the British Association, that if it were desired to transmit 26,250 horse-power by a copper wire half an inch in diameter, from Niagara to New York, which is about 300 miles distance, and not to lose more than one-fifth of the whole amount of work—that is, to deliver up in New York, 21,000 horse power—the electromotive force between the two wires must be 80,000 volts. Now, what, asks Professor Ayrton, is to be done with this enormous electromotive force at New York end of the wires. The solution of this problem, he says, was also given by Sir W. Thomson on the same occasion, and it consists in using large numbers of accumulators. All that is necessary to do in order to subdivide the enormous electromotive into what *may be called small commercial electromotive* forces, is to keep a Faure battery of 40,000 cells always charged direct from the main current, and to apply a methodical system of removing sets of fifty, and placing them on the town supply circuits while other sets of fifty are being regularly introduced into the main circuit that is being charged. Of course, this removal does not mean bodily removal of the cells, but merely disconnecting the wires. It is probable that this employment of secondary batteries will be of great importance, since it overcomes the last difficulty in the economical electrical transmission of power over long distances.

Mechanical Music.—The Black Forest is famous for these mechanical organs—orchestrions, as they are called—and in some instances they are brought to great perfection. There is a shop close to the exhibition, bearing the name of Lamy Sohne, full of clocks and singing birds and orchestrions, where you may pass half an hour in a fairyland of surprises and all kinds of mechanical music. One morning I went in with an old lady and gentleman—the latter a grave dignitary of the Church of England. "A very tiring place," said the old lady; "all up and down hill; the only fault I find with the Black Forest. Couldn't they level it my dear?"—to her husband—"or build viaducts or something? Or *at the very least, couldn't they organize pony* chaises all over the country—like those, you know, that we found so useful at Bournemouth last year?" "Take a chair, my love," said the old gentleman, without committing himself to an opinion. And he placed one for her, while the young man in the shop (whose jolly, good natured face and broad grin delighted one to behold) wound up the orchestrion. The old lady sat down somewhat heavily from sheer exhaustion, and immediately the chair struck up the lively air of "the Watch on the Rhine," with a decidely martial influence upon its occupant. She sprang from her seat as if it had been a gridiron, and asked her husband reproachfully if he was amusing himself at her expense, and whether her age was not sufficient to secure her fram practical jocking. "Dear me!" cried he, in amazement, looking at the offending chair as though he expected it to walk of its own accord. "What a musical nation these Black Forestors are! It's music everywhere! The very chairs you sit down upon are full of it." At this moment the orchestrion struck up a selection from "Don Giovanni," and the old lady recoveredher amiability in listening to a really splendid instrument. I left them still enjoying it, marveling at alll the birds and boxes, and thinking each one more wondeful than another.