

a complete explanation of the phenomena exhibited by certain Japanese mirrors (through a mistake as to their nationality I called them Chinese); and as your readers appear to be unacquainted with this, perhaps I may be allowed to reproduce the substance of my former letter. In order to ascertain whether any variations in the form of the surface of the mirror, which was very slightly convex, affected the question, I looked for any distortions that might be produced in the image of the ground-glass globe of a gas lamp, as the point of incidence moved across that portion of the polished surface on the back of which was a raised figure. Let A and B be two lines on the surface immediately over the two edges of such a figure. Then as the limb of the image approached A, it became flattened; when it had passed A it expanded to more than its original size; indeed between A and B the image was sensibly larger than when viewed from any other part of the mirror. When the limb approached B it was again flattened, and beyond B it resumed its original dimensions. This clearly proves that the portion of the surface of the mirror between A and B was, if not actually plane, at least less convex than the rest of the surface; and as upon this supposition the figures when thrown upon a screen should appear *brighter* than the rest of the image, which is exactly what occurs in fact, there can be no doubt that this is sufficient to account for the peculiarity in question. In all probability the mirror had warped in cooling, except in the thicker portions where the raised figures existed.

J. PARNELL

Hadham House, Upper Clapton, July 6

#### Printing and Calico Printing

YOUR correspondent, Mr. Henry Cecil, is under a singular misapprehension as to the inventor of cylinder machine calico printing, and the date of its first practical application. Mr. Isaac Taylor was certainly not the originator of cylinder printing; and that art was developed long before he, "in 1855 or 1856 superintended its application at Manchester." Mr. Taylor, it is true, obtained several patents for inventions connected with cylinder-printing—one, I think, for a form of pentograph, and another for the use of thin sheet copper instead of thick cast cylinders of that metal. These, so far as I know, never succeeded in practice, and it is highly probable they brought their gifted inventor loss instead of gain; but that result was not due to "the inevitable compliment of piracy." Who the inventor of cylinder printing was it would be hard definitely to determine. Nearly a century and a half ago a patent was granted for an invention which embodied the leading principles of the modern machine, and from that time downwards the apparatus gradually developed and perfected in the hands of innumerable practical inventors.

THE WRITER OF CALICO PRINTING IN THE  
"ENCYCLOPÆDIA BRITANNICA"

#### LOCAL MUSEUMS

THE importance of local museums is gradually but unmistakably forcing itself upon the country. It may take much time to foster any united action, without which any definite progress is very improbable, but year by year is adding to the ranks of those who are wise enough to see and have influence enough to advocate their value as a part of the educational stock-in-trade of the nation. We rejoice to see that Mr. Chamberlain has enrolled himself among their advocates in the House of Commons. On Monday he drew attention to the fact that the public expenditure for the promotion of science and art was exclusively confined to London, Edinburgh, and Dublin. The amount of the estimate this year, he said, for museums, art galleries, and parks in the metropolis amounted to nearly 400,000*l.*, and that for Edinburgh and Dublin to nearly 50,000*l.* To those sums the provinces had to contribute twice over. Birmingham contributed about 4,000*l.*, and had to find about 8,000*l.* a year besides for her own local art institutions. It might be said with truth that a national collection should be placed in the metropolis at the expense of

the nation, but that argument did not apply to the expenditure on the public parks and still less to that which the Bethnal Green Museum involved. He did not complain of such expenditure. It produced most admirable results, adding as it did to the pleasure and happiness of great masses of the people, and tending to elevate and refine their minds. It was, too, in some sort a commercial investment, as it was calculated to enable artisans the better to compete with those of other nations. What he complained of was that the principle had not been carried far enough. He was anxious to see established in every one of our great centres of population and industry museums devoted to art and manufactures appropriate to each particular district. To show how highly these institutions were appreciated in the provinces, he mentioned that in Birmingham the local museum which had been established by private subscriptions was visited annually by 300,000 persons, and as the population of the town was only 370,000, the attendance was immensely greater than was shown by the returns of the number of visitors to our metropolitan institutions. Results equally extraordinary could be quoted from other provincial towns in which such museums existed. He further stated that although provincial communities were at present legally able to tax themselves to the extent of 1*l.* in the pound for the purpose of establishing museums and libraries, in Birmingham all this money went to the free library, and they had therefore no means of establishing an industrial museum.

We are glad also to see that the Government is now alive to the importance of this action, for, although Lord Sandon in his reply begged that the matter might not be pressed upon them at the present moment, he reminded the House of the great advantage which the country derived from the South Kensington Museum, which was now, in fact, a gigantic circulating museum. Almost all the principal objects in the museum, except those of great rarity or delicacy, were sent on their travels at different times through the provinces, and in this way aid was already given to local museums. The country derived enormous advantage from this vote. Local exhibitions were frequent, and loans from the South Kensington Museum for these exhibitions were very numerous. Eight museums had these objects sent to them, and a great deal had been done as the hon. gentleman wished. The South Kensington authorities were anxious to follow that course, but he could not say whether they would be able next year to do more in that direction. Their hands were to some extent tied by the necessity of economy, but the matter would receive the best attention of the Government, and he hoped that next session they might be able to go further.

Of course, neither Mr. Chamberlain nor Dr. Lyon Playfair allowed the subject to drop without pointing out that the British Museum and the National Gallery had no circulating system in operation, that in fact Lord Sandon was quite justified in adopting that line of argument with regard to the South Kensington authorities; but that many of the London galleries and museums were of no use to the provinces. The British Museum, for instance, and the National Gallery were practically of no use except to London, yet every one knew that they contained many duplicates which would be most valuable to the provinces, and the offer of some important pictures was sometimes declined on behalf of the National Gallery. Nor was this all. Dr. Playfair pointed out that in France the Minister of Education was responsible for all the museums, and constantly sent collections into the provinces; but in England, the management of the galleries was, so to say, dislocated, and not under one authority or one Minister. Why did he not go further and point out the recommendation of the Duke of Devonshire's Commission?