

From repeated encounters with African big game of all kinds, Mr. Sutherland concludes that the pursuit of the elephant is beyond doubt the most dangerous. Next come buffaloes and lions, which are about on a par; but it will surprise many of his readers to learn that the risk in shooting rhinoceroses is very small, smaller indeed than that attending the shooting of leopards. The volume is not, however, devoted wholly to sport. It contains much valuable information about the superstitions and social organisation of the natives, as well as harrowing descriptions of inter-tribal raids, throwing a lurid light on the life of uncivilised man.

films had been exhibited there was a short interval, and then the curtain drew up, showing the stage set as an ancient temple, with two rows of columns and a background. This was all decorated in quiet colours such as brown and terracotta, and was only feebly lighted. Two attendants brought on a pair of tables, set them between the back pair of pillars and retired. Then two somewhat ghostly pierrots, dressed in white, appeared to come on the stage, and to play a xylophone duet on instruments on the tables. A gramophone produced the music and kept time with the movement of the players.

The optical effect appears to be produced by a



Kom-Kom: the terror of Nagoromenia's kraal. From "The Adventures of an Elephant Hunter."

(4) "Baby Birds at Home" is a book for children. It is written in suitable style, but its chief merit is perhaps the excellence of the photographs with which it is illustrated. R. I. P.

THE PRODUCTION OF APPARENT RELIEF BY "KINOPLASTIKON."

AT the Scala Theatre—the home of "Kinema-color"—there is now being exhibited a new feature, termed "Kinoplastikon," which is advertised as "singing, talking, moving, picture figures without a screen," and has been described in notices in the daily Press as stereoscopic. We visited the theatre recently in order to see this display and discover, if possible, how the stereoscopic effect was produced. We hoped to see some new optical principle illustrated, but in this we were disappointed.

After a number of the now well-known colour
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variation of the old "Pepper's Ghost." A huge sheet of plate-glass—it must be 20 to 30 ft. square—seems to be set up in a vertical plane, making an angle of 45° with the front of the stage, so that any brightly lighted object on the left of the stage, as seen from the auditorium, may be seen by the audience by reflection as if it were upon the stage itself. A diagram will make the arrangement clearer. MN is the front of the stage, AB the background. CD, EF, GH, the pillars of the temple. GL is the sheet of glass. Then a bright object at PQ will be seen by the audience at XYZ as though it were at P'Q'.

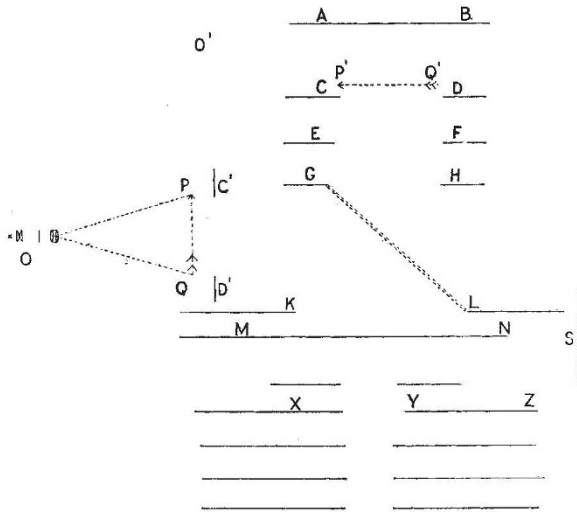
The figures are apparently projected by an animatograph O upon a semi-transparent screen at PQ.¹ Stray light from the lantern coming through the screen could be seen shining

¹ In order to avoid the great length from O to the centre of the stage, it is probable that the lantern is placed to shine down from above, or up from below, or even forwards from O', a silvered mirror reflecting the light into the required direction.

on the theatre wall at S. As only the figures themselves were seen, the rest of the screen must have been dark, and therefore the background of each picture must have been painted out on the film with black (unless the film was unusually opaque). This painting out would account for the absence of the "rain" effect of the usual animatograph reproduction.

It is obvious from the foregoing that there is no stereoscopic effect in the strict sense, *i.e.* that there is no difference between the picture seen by the right eye and that seen by the left eye, at least so far as the figures are concerned. But as the picture is a long way back on the stage (some 40 ft. or more), so that the difference between the pictures that should be seen by the two eyes would be quite small, and as the temple itself is of course in relief, there is no difficulty in imagining the figures to be in relief also; indeed, as they step backwards and forwards the illusion is very complete.

Some parts of the glass were unfortunately



badly out of parallelism, and when the reflection occurred at these places a doubling of the image was produced, which made the figures very indistinct; this, of course, cannot be avoided in such a large sheet of glass. Some other defects that we noticed could have been avoided. For instance, the image of the edge of the screen PQ did not quite coincide with the pillars CD; so that when the figures walked off the stage they disappeared before they reached the pillars. Apparently the image P'Q' is a little behind the plane CD (for this defect was more evident at X than Z); if so, a pair of pillars C'D' should be so placed in front of PQ as to form an image exactly coincident with CD. Then, wherever the image was viewed from, this parallax would disappear. We also noticed that the barrel in one item, which was placed on the stage, was not quite the shape or size of the one in the picture. The upper part of a pillar at B was rather brighter than the rest of the background, and could occasionally be seen through the figures. It should be painted a little darker.

ERADICATION OF PLANT DISEASES.

THE general assembly of the International Institute of Agriculture in session at Rome has wisely refrained from extending the Phylloxera Convention to all cases of plant diseases. Signor Cuboni's report on the diseases of plants and the best method to prevent their propagation gave rise to a lively discussion, but it was felt that rough-and-ready measures would do more harm than good. Ultimately a memorandum was adopted conveying the following recommendations:—

- (1) The establishment of a Government service of phytopathology by all Governments of countries adhering to the International Institute of Agriculture.
- (2) The convening at an early date of an international conference of specialists with the view of arriving at an international agreement upon the means of preventing plant diseases. The wish was expressed that the French Government would follow up the initiative it has already taken by calling such a meeting.
- (3) At each general assembly of the institute the specialists of the various Governments should meet in a separate commission to discuss the results of their researches and studies on the diseases of plants.
- (4) Countries adhering to the International Institute should at once begin to study the various questions which the International Commission of Phytopathology will have before it, basing their study upon the materials which the International Institute of Agriculture will be able to furnish.

The subject is one for concerted action. The study of plant diseases is not a simple one. It concerns the entomologist and protozoologist as well as the botanist, and among botanists not merely the students of fungi or bacteria, but the physiologist and the investigator on Mendelian lines; for the production of disease-resisting forms is one of the surest ways of eliminating the disease-factor. Furthermore, periodical meetings of the workers in these various fields of investigation will tend to encourage the worker, and will ensure that the results of the work are put to the best advantage. Comparison of results obtained in the same line of research under the various conditions offered by different countries will be specially helpful; and if international legislation is to follow, these various conditions must be carefully considered.

It should be obvious also that an organised service of phytopathology is an essential, and an *ad hoc* training of experts is a prime necessity. The study of plant diseases offers ample scope for investigation, and a Government service would find work for a supply of experts at home and abroad. One example will suffice. The Jamaica banana industry has been recently threatened with disaster because the Department of Agriculture had no expert in plant diseases to recognise on its outbreak a well-known disease which had already caused serious loss to the same industry in Central America.