

ROBINSON ON ROBERTSON

David Robinson has been re-reading the first part of Robertson's *Mémoires*, following its recent re-publication (Langres: Café – Clima Editeurs, 1985), and takes the opportunity to provide the following commentary on its magic lantern content – together with his extensive translation of many of the key passages – apparently their first extended appearance in English.

For such a legendary figure in the history of projection, we know surprisingly little about Etienne Gaspard Robertson - whose surname was more simply 'Robert' when he was born in Liège in 1763.* We know that he claimed the invention and first exploitation of the phantasmagoria lantern; and we know that he presented his spectacle in an ancient Parisian Capucine Convent which provided an ideal setting for the kind of Gothick horror which we assume was the dominant character of the entertainment – certainly to judge from the much reproduced engraving of an audience reacting appropriately to the apparition of a demon and an animated skull above their heads (1). I am unawafe, however, of any extensive attempt, either in the English or French literature, to analyse his techniques or detail his repertoire; and in this article I can only pretend to a tentative sketch which may provide a starting point for more detailed research.

* Robertson himself explains his change of name:

My family name is ... Robert. The word *son* is added according to a usage very common in the Low Countries when a father and son are both living currently and in the same place. *Son* in English and Flemish and *soon* in Dutch have the same meaning ... I have been known as Robertson in so many places and for so many years, that I felt that to remove the last syllable, estecially in foreign countries, would have rendered me unrecognisable.

The first essential of such research would be to comb French and Belgium archives for contemporary reports or Robertson's ephemeral publicity, if it exists. In the continuing absence of such external evidence, our principal source remains Robertson's own record in his two-volume autobiography, *Mémoires récréatifs, scientifiques et anecdotes d'un physicien-aéronaute*, published in 1830. Robertson's account has remained elusive not just because of the comparative rarity of the original edition, (making its recent re-publication (2) most valuable), but because of the variety, garrulity and disorganisation of the sage's writing. The Fantasmagoria was far from being his only interest. In a golden age for science he was passionate about every branch of it – physics, optics, chemistry, medicine and the new marvels of electricity, galvanism and aeronautics. The second volume of the *Mémoires* is very largely taken up with his intrepid ballooning exploits, and his extensive travels, which unfortunately seem never to have included Britain.

The Fantasmagoria was undoubtedly his most beloved child, uniting his passion for optics with his early interest in painting; adding philosophy to physics as he considered the implications, in an Age of Reason in which primitive superstitions still lingered, of the illusions of supernatural phenomena he effected; appealing, too, to an instinctive sense and flair for showmanship. The Fantasmagoria

turns up again and again in the first volume of the *Mémoires*; the problem is that much of his account is dissipated, repetitive, discursive and confused. He insists at such tedious length that his intention was never to deceive with his illusions but rather to arm his audience against irrational superstition that – unjustly perhaps – the reader becomes suspicious that he protests too much. A degree of self-congratulation and his indignation against detractors and imitators is not entirely unsympathetic. Occasionally pompous and windy, Robertson still retains the attractions of humour, insatiable curiosity and unquenchable excitement at the wonders of the world.

Young Robertson left Liège for Paris in the late 1780s, arriving shortly before the outbreak of the Revolution in 1789. (When he returned to Liège for health reasons in 1794 or 1795 he said that it was six or seven years since he had left home). In 1792 he had enrolled in the physics course conducted by the celebrated Professor Charles; and it was Charles who gave him the inspiration for his effort, on his return to Liège, to recreate the hugh burning mirror attributed in ancient myth to Archimedes (3). His efforts impressed the French Revolutionary Committee with the military possibilities of the device; and in February 1796 he was granted a *laissez-passer* to return to Paris so that he may communicate to the Government a discovery of interest in the present war. It was while awaiting the results



of the examination of his proposals by the National Institute that, as he writes,

I occupied myself actively in perfecting an invention of which I had had the first notion of executing when I was in Liège. I am speaking of the *Fantasmagoria*.

From my most tender infancy, my quick and lively imagination had made me thrill to the power of marvels: everything that overstepped the ordinary limits of nature, which are, in different ages, only the limits of our particular knowledge, excited in my mind a curiosity, an ardour, which led me to undertake everything possible to realise the effects which I conceived of it. Father Kircher, it is said, believed in the devil; so much the worse, the example could be contagious, since Father Kircher was blessed with such great learning that many people would be tempted to suppose that if he believed in the devil, he had good reasons for it. Who has not believed in the devil and were-wolves in his early years? I admit frankly that I believed in the devil, in the raising of the dead, in enchantments, in infernal pacts, and even in witches' broomsticks; I believed that an old woman, my neighbour, was, as everyone insisted, in regular commerce with Lucifer. I envied her power and her connections; I shut myself in a room to cut off the head of a cock, and force the master of the demons to reveal himself to me; I waited for him for seven or eight hours, I taunted, insulted, reviled him for not daring to appear: 'If you exist', I cried, banging my table, 'come out from wherever you are, and show your horns, otherwise I deny you, I declare that you have never existed'. It was not fear, as may be conceived, which made me believe in his power, but the desire to share it in order that I also could achieve magical effects. My head was turned by books on magic. Porta's *Magia Naturalis* and Midorge's *Récréations* above all gave me sleepless nights. I finally adopted a very wise policy: since the devil refused to communicate to me the science of creating prodigies, I would apply myself to creating devils, and I would have have only to wave my wand, to force all the infernal cortège to be seen in the light. My habitation became a true *Pandemonium*.

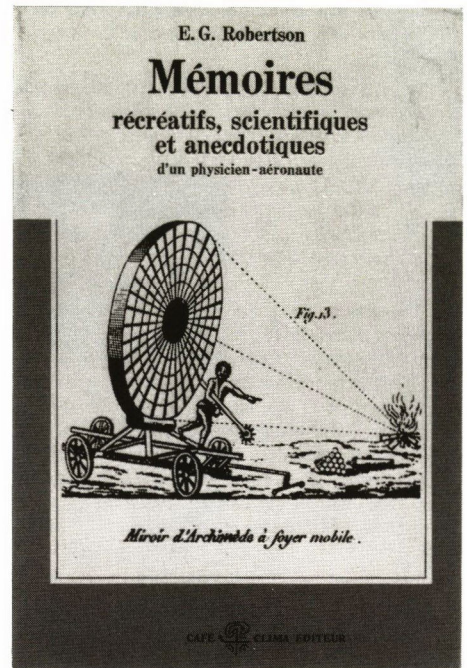
By 1795, however, he had reached years of greater discretion:

Knowledge gained in the study of physics and in particular of the phenomena of light had long since converted my extravagant ideas about witchcraft to more rational research into fantastic effects; and the wish to create artificial phantoms had succeeded the

hope of finding myself in the midst of an entire chapter of well-bred devils. I must however admit that it was chance which gave me the first ideas for the *fantasmagoria*; I had a special liking for experiments with the solar microscope, and Madame Chevalier [with whom Robertson had lodged in Paris] left the hotel de la rue Provence, it fell out that I and the proprietor had one of those bizarre legal battles which enliven the magistrates' courts: I had made holes in all the doors to admit the spectre of the sun. The landlord, who had leased complete doors to us, did not wish to take them back open to the daylight. This little misunderstanding was put right. It was in the course of similar experiments carried out in Liège, that the hand of my brother, who assisted me, happened to project itself, in very large proportions, on the wall, and from this happy observation date my first essays with shadows and spectres.

Since 1784 I had made some improvements to Kircher's lantern, which enabled me to show, in a rough and ready way, some limping shadows in the presence of my good friend M. Villette, and some people of our intimate society. The encouragement I received made me improve my processes from day to day. From day to day also the circle of initiates grew; and the fame of these apparitions, imperfect as they were, spreading more and more, I soon had large audiences; I must say that I owed no less to these essays with the *fantasmagoria* than to my experiments in physics, the visit with which the Burgermasters honoured one of my performances ...

On my return to Paris, as soon as the ambitious ideas which had inspired my Archimedean mirror had faded, I began to think of further ways of improving my catoptric processes, I surrounded myself with a mass of books, such as Father Kircher's *Magia lucis et umbrae*, Gaspard Schott's *Magia Optica, Magia universalis Naturae et Artis*; von Viegleb's *Naturisch Magie* and Joannis Zahn *pro explicatione oculi artificialis*; I consulted *Dioptrique oculaire*, by P. Chérubin of Orléans, the book of Eckhartshausen and others; but all of them were too diffuse and more likely to frighten me off than to serve as guides. After long, painful and dull reading, I therefore saw myself thrown upon my own resources, and obliged to continual experiments which could only be made at night. The aim of my researches at that time was to obtain a great intensity of light, concentrated on a surface of which the smallest diameter would be five inches and the largest eight feet; and then to find an

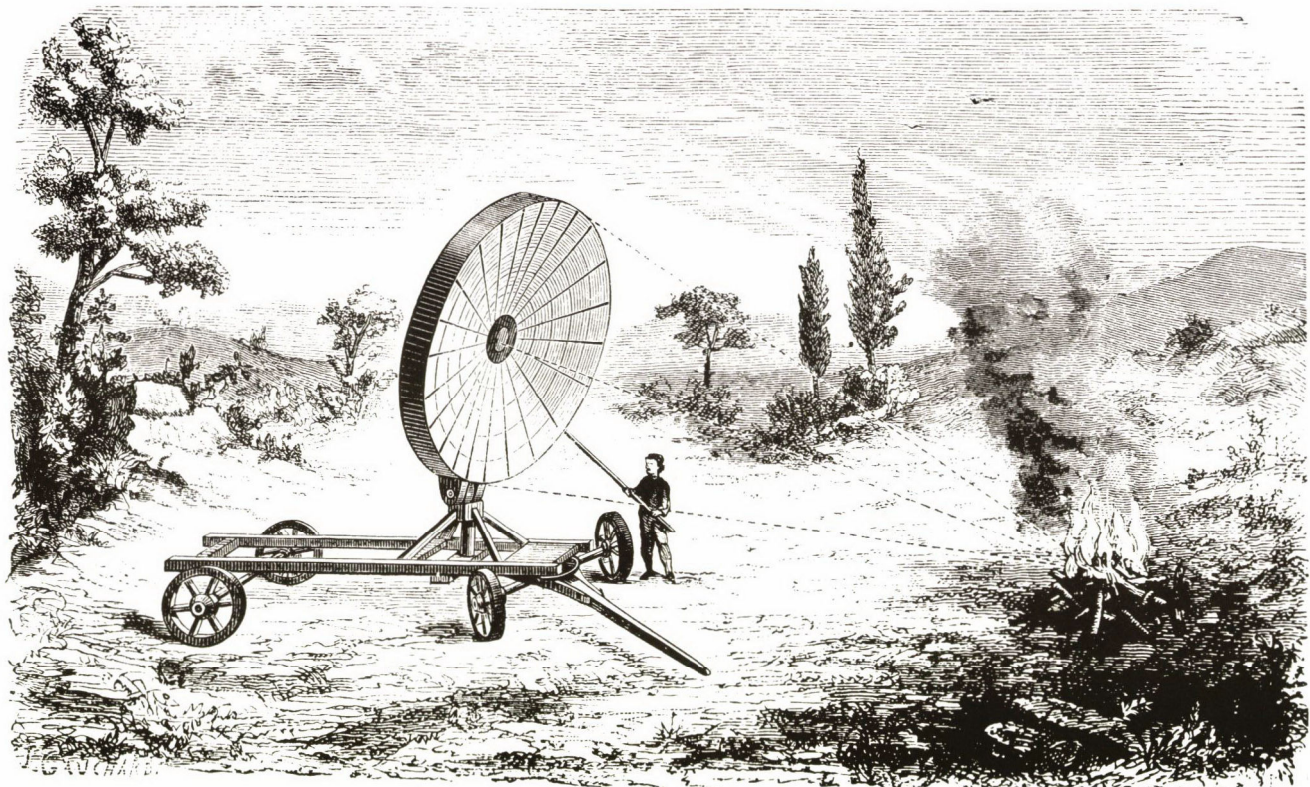


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apparatus to project by artificial light the optical image of opaque bodies. Relative to this work, M. Charles almost threw me into total discouragement by saying that M. le duc de Chaulnes and he had spent a great deal of time and money without achieving any success in this direction.

I had moreover applied myself to these studies solely with the purpose of curiosity and instruction; my first successes in painting, and my taste for this art, having always made me imagine it as my only means of fortune and reputation; but fate, or rather the Abbé Chappe, decided me otherwise. I then frequently met this Abbé, a man of education, wit and taste, and yet given to a style of intemperance which these qualities ought always to exclude. He insisted endlessly that I should make my experiments public, attaching my name to them. The inquisitorial nature of the government made me fear some danger from such publicity, although I saw none in the presentation to the revolutionary government of the discovery of the telegraph of which he [Abbé Chappe] had possessed

3.



the secret for two years. Conversely the Abbé saw danger in this step, while finding none in that which concerned me.

Robertson thereupon launches into a characteristic disquisition on the marvels of the telegraph as a contribution to the history of man's power of communication. He also recalls the melancholy end of the Abbé Chappe, who perished when he fell into a well which the fumes of the wine had prevented him from noticing — though not it seems before having finally persuaded Robertson to embark on public shows.

There seems to have been a false start, when Robertson planned his first performances in the *cabinet de physique* of an eccentric amateur, M. de Béer. He does not reveal what went wrong with the arrangement, or whether any actual performances took place, but merely attributes his mistake to ignorance and stinginess, and continues, I then addressed myself elsewhere, and the opening of my theatre took place in the Pavillon de l'Échiquier, in the first days of Germinal of Year VI [late March, 1796].

In an article in the *New Magic Lantern Journal* Volume 3, no. 2, ('The History of Projecting Phantoms, Ghosts and Apparitions, Part 2'), Hermann Hecht quotes, from Robertson's book, a satirical review of the Fantasmagoria at this period by Poultier-Delmotte, editor of the *Amis des Lois*. Although clearly based on actual observation of a performance, the main purpose of the article was a political squib about people and events of the time. For Robertson however, the end of the article was significant:

'The seance was finished apart from a royalist insurgent who was now employed in a slaughter-house of the Republic; he asked Robertson whether he could make Louis XVI appear. At this indiscreet question Robertson replied sensibly: *I had a recipe for this sort of thing before the Revolution but I have now lost it. It is probable that I cannot ever find it again, and it is therefore henceforth impossible to bring back the Kings of France.*'

Robertson comments:

This last phrase, attributed to me by Poultier, was ingenious, and would have been a piece of wit and skill to get out of the embarrassment in which I was placed by the demand — then very indiscreet — for the ghost of Louis XVI. I imagine that the writer felt that it could harm me; and out of good will wanted to ward off annoying consequence. This apparition really was demanded; I suspect that it was a trick by an agent provocateur, and the revenge of a policeman to whom I had refused some favour. The fantasmagoria found itself in difficulties: its shadows faded and disappeared entirely, and the ghosts returned permanently into the night of the grave. I was provisionally prohibited from appearing; and my boxes and papers were sealed. They searched everywhere where there might be any trace of a ghost, and at that point I had the thought, confirmed before and since, that to run after shadows and grasp at phantoms, in order to transform them into realities, often very fatal, is one of the principle means of existence and one of the most frightful necessities of the secret police.

The search, says Robertson, was fruitless, but he was not permitted to reopen his show. He therefore left Paris to spend some weeks in Bordeaux, where he presented Fantasmagoric exhibitions with great success, and first discovered the pleasures of aeronautics with his first short balloon ascent.

He returned to Paris to discover to his great annoyance that the proprietor of the Pavillon de l'Échiquier, in collusion with two brothers named Aubée who had been Robertson's assistants, had stolen his invention for their own use and had started an exhibition in his old premises.

This reason alone would have determined me to seek another place, even if I did not already have the wish for more spacious and suitable premises. I found exactly what I needed in the ancient Convent of the Capucines, close to the Place Vendôme, which was called in the time of Louis XIV, *Place des Conquêtes* or *Louis-le-Grand* (4).

Robertson goes on to give a history of the convent from its foundation in the reign of Henri IV by the Duchesse de Mercœur, after which, he writes:

It will readily be understood that, if philosophical ideas were to elevate the minds of the audience above the involuntary fear which the phantoms might inspire, the effect of the spectacle demanded that while they were actually present the apparitions should convey a kind of religious terror, I could not therefore choose a more suitable place than a vast abandoned chapel in the middle of a cloister. Not only did the ancient purpose of the building produce a receptive mood, but the memory of the tombs expelled from this asylum, as they have been from all temples, all convents, to be heaped up in hundreds outside the churches, served to enhance this first impression, in harmony with the ancient belief in ghosts; they seemed somehow to emerge from real sepulchres, and to hover around the mortal remains which they had once animated and which were thus delivered to profanation (5). It is no doubt a noble aim in philosophy to break the yoke of all superstitions and to destroy their visible power in exposing secret artifices and fallacious appearances which fortify them; but it will never be within the power of man to eliminate from his imagination those dark and mysterious notions about a future covered with an impenetrable veil, and which will not allow him to insult with impunity the cult of the dead, among whom his inevitable place is assigned...

Robertson goes on to describe the arrangement of the show and the scene that awaited the visitor.

After several detours appropriate to eliminate impressions still lingering from the profane noise of a great city, after having passed through the paved cloisters of the ancient convent, decorated with fantastic paintings, and through my *cabinet de physique*, you arrived before a door of antique form, covered with hieroglyphics and seeming to announce the entrance to the mysteries of Isis. After this you found yourself in a sombre place, hung with black, weakly illuminated by a sepulchral lamp, and whose purpose is announced only by some gloomy images; profound calm, an absolute silence, a sudden isolation on coming from a bustling street, were like the preludes of an ideal world. Already the adjustment began, all faces were grave, even gloomy, and people spoke only in lowered voices. At this point I stepped forward and gave a warning against superstitious impressions, in roughly these terms: 'What you are about to see, gentlemen, is not a frivolous spectacle; it is intended for the man who thinks, for the philosopher who loves to wander for an instant with Sterne amid the tombs.

It is, moreover, a useful spectacle for a man to discover the bizarre effect of the imagination when it combines force and disorder; I wish to speak of the terror which shadows, symbols, spells, the occult works of magic inspire; terror which almost all men have experienced at a tender unformed age, and which some still retain in the ripe age of reason.

People consult magicians, because man, carried by the rapid torrent of time, sees with a troubled eye both the waves which carry him and the space which he has crossed; he would like to extend his view towards the final limits of his career, to interrogate the mirror of the future and to see with a glance the whole chain of his existence.

Love of the marvellous, which seems to be of our nature, suffices to justify our credulity. In life, man is always guided by nature as a child by his leading strings; he thinks he walks alone, and it is nature which directs his steps. It is nature which inspires in him the sublime desire to prolong his existence, even when his career is ended. Among the first children of men, there was a sacred and religious view that the spirit, the breath will not perish with them, that this light, airy substance of ourselves would like to return to the place it has loved. This consoling idea dries the tears of the a widow, of an unhappy lover, and it was out of friendship that the first ghost showed itself.'

When we recall Poultier's description of Robertson's entrance, 'a pale gaunt man', it is clear that the

spectators cannot for a moment have been misled into thinking they were seeing a frivolous show.

The thoughts which I expressed in this kind of prologue, although always dealing with the same subject, frequently varied; I will quote another speech:

'The experiments which you are about to witness must interest philosophy; here philosophy may witness the history of aberrations of the human spirit, and this is worth more than the political history of nations. The two great epochs of man are his entry into life and his departure from it. All that happens can be considered as being placed between two black and impenetrable veils which conceal these two epochs, and which no-one has yet raised. Thousands of generations stand there before these black veils, torches in their hands, striving to guess what may be on the other side. Poets, philosophers, creators of states have in their dreams painted this future in colours gay or sombre, according to whether the sky over their heads was cloudy or serene. Many imposters have profited by this general curiosity to astonish the imagination subdued by the uncertainty of the future. But the most mournful silence reigns on the other side of this funerary crepe; and it is to fill this silence, which says so many things to the imagination, that magicians, sybils and the priests of Memphis employ the illusions of an unknown art, of which I am going to try to demonstrate some methods under your eyes.

To realise the importance of the art of apparitions among the ancients, it is necessary for me to take you back to the times, the circumstances and the place where they were made. Imagine a sensitive woman who has lost the object of her tenderness; see her led by the hand of an old man, of a venerable priest. After a thousand detours, she arrives in the middle of the pyramids or the catacombs. There, surrounded by the inmates of death, alone with the night and her imagination, she awaits the apparition of the object of her love. What an illusion this must be! You will observe that in the mysteries of the initiation there was only a single apparition. If I merely sought to inspire terror in you, I would do things differently: you would be admitted only in isolation, because the people who surround you paralyse your imagination by their presence and their reflections, and the single object offered to you would be presented amidst thunder and lightning. The aim of the fantasmagoria is to familiarise you with extraordinary objects; I have offered you spectres, and now I am going to make known shadows appear.'

This last phrase shows that I sometimes kept the second part of this speech for the interval which divided the apparitions into two series. As soon as I stopped talking, the antique lamp suspended over the heads of the spectators was extinguished, and plunged them into profound darkness, in dreadful shadows. The noise of rain, thunder, a funereal bell calling the shades from their tombs, was succeeded by the rending sounds of the Harmonica.

This was *Franklin's Harmonica*, an elaborate form of the Musical Glasses, about which Robertson has more to say later. By the 1790s it had been adapted so that the glasses — tuned by the quantity of water contained in them — could be played by means of a keyboard. The variations of the instrument used glass or metal rods in place of the water-filled glasses. Robinson continued:

The sky appeared, but furrowed in every direction by lightning. At a great distant point of light appeared; a figure could be made out, at first very small, but then approaching with slow steps, and at each step seeming to grow; soon, now of immense size, the phantom advanced under the eyes of the spectator, and, at the moment when the latter let out a cry, disappeared with unimaginable suddenness. At other times, the spectres emerged fully formed from a vault, and presented themselves in an unexpected manner. The ghosts of famous men crowded around a boat and passed over the Styx, then, fleeing the celestial light, withdrew insensibly to lose themselves in the immensity of



FANTASMAGORIE

DE ROBERT - SON ,

Rue des Petits Champs, Cour des Capucines .
vis à - vis la Place Vendôme .

*APPARITIONS de spectres, fantômes et revenans tels qu'ils ont
dû et pu apparaitre dans tous les tems, dans tous les lieux
et chez tous les peuples .*

*EXPERIENCES sur le fluide Galvanique, dont l'application
rend non seulement le mouvement, mais encore les habitudes aux
corps privés de la vie depuis plusieurs jours .*

*La Salle où se réunit le public, en attendant les expériences de la
Fantasmagorie, offre tous les prestiges de l'Optique imaginée, jusqu'à
présent pour tromper les yeux. Le spectateur voit successivement
passer sous ses yeux, les lieux où se sont faites les apparitions
chez les anciens .*

*On y entend l'Harmonica de Franklin, cet instrument
précieux est touché par le premier virtuose de Paris .*

La séance a lieu tous les jours à 7 heures, Cour des Capucines .

chez Robert - Son

space. Sad, serious, graceful, fantastic scenes intermingled, and some current event usually provided the principal apparition. The *Courrier des Spectacles* (4 ventose an VIII ie. 23 February 1799) said :

'Robespierre comes from his tomb, wishes to rise up ... the lightning descends and turns the monster and his tomb to powder. Well-loved shadows take turns it seems to come: Diogenes, his lantern in his hand, seeks a man, and to find him, seems to traverse the rows of seats and impolitely gives every lady a fright, to the general amusement. Such are the effects of the optics, that everyone believes his touches with his hand these objects which approach.'

It is impossible, said another writer, 'to offer anything more magic and more ingenious than the experiment which ends the fantasmagorie: in the midst of the chaos, in the bosom of storms and lightning, one sees rise up a brilliant star whose centre carries these characters: 18 Brumaire. Soon the clouds disperse, and permit us to see the peacemaker [presumably Bonaparte]: he has just offered an olive branch to Minerva, who receives it, makes it into the form of a crown and puts it upon the head of the French hero. It is hardly necessary to say that this ingenious allegory is always greeted with enthusiasm.'

Often, as a striking finale, I would end my seances with this allocution:

'I have gone through all the phenomena of the fantasmagoria. I have unveiled to you the secrets of the priests of Memphis and I have tried to show you what is occult in physics, those effects which appeared supernatural in the ages of credulity; but it remains for me to offer you one which is only too real. Those of you who have perhaps smiled at my experiments, beauties who have experienced a few moments of fear, here is the only truly terrible spectacle, the only one wholly to be feared: strong men, frail men, monks and subjects, believers or atheists, beautiful or ugly, here is the lot which awaits you, this is what you will be one day. Remember the fantasmagoria.'

At this the light reappeared, and in the middle of the room appeared the skeleton of a young woman, standing upon a pedestal...

If to the details I have just described you add the most

varied physical experiments, and above all the most impressive galvanic demonstrations, you will have a complete idea of one of my performances...

I have said that the spectacle of the fantasmagoria produced great effect; the public came to it in came to it in crowds, and its presence during six consecutive years recompensed me for my researches and established my fortune...

Robertson goes on to relate his problems in persuading people that he was not gifted with magical powers.

Every day people came to demand some revelation of the future and information about the past; they wanted me to be able to know things that took place at great distances...

These importunates included people who wanted to expose the identities of people who had robbed them (his solution was to refer them to the police) and others who wanted him to conjure up the spirits of the dear departed. One of these cases, he claims, was a young woman so full of grief at the loss of her husband that her sanity seemed endangered.

I addressed myself to the police station, and I asked for permission to soothe the sorrow of this woman... This permission was given: I applied myself to persuading her that, if this evocation was possible, the power for it could be used a single time only. I drew from memory the features of her husband, certain that the sick imagination of the spectator would do the rest. In fact no sooner did the shadow make its appearance than she cried out: 'Oh, my husband! My dear husband! I see you once more — It is you; stay, stay, do not leave me so soon.'

She wept volubly when the apparition disappeared; but Robertson was confident that the effect had been permanently therapeutic.

Robertson proudly reprints contemporary opinions of his spectacle, even including a somewhat critical view as expressed by Citizen Molin, writing to *L'Ami des Lois* :

'Yesterday I paid my tribute of curiosity to the fantasmagorie. I admit that it would scarcely be possible to carry the magic of optics to a more admirable degree, nor the frightening art of spectres; but society may feel the reflections which

I transmit to it on this subject a matter of concern. It was above all the beginning of the spectacle which suggested them to my mind.

The public being introduced into the mournful room, at the moment when the spectacle is about to commence; the sudden extinction of the lights plunges you for an hour and a half into shadows as frightful as deep; that is the order of the thing; it is very necessary that one does not see a wink in the supposed region of the dead. At that moment, two turns of the key secure the doors; and, again, nothing is more natural than to forfeit liberty when one is seated in a tomb, and, as in the beyond of Achéron, among the shadows.

But with all the propriety of the invention, who will guarantee the spectators that, favoured by the shadows, indiscreet hands will not seek to roam. —

A second reflection is that, in other respects, more important still, admission to this spectacle should not be permitted to any pregnant woman. The thunder and lightening, which are imitated after nature, strikes her sense with a shock so terrible and so sudden, that she will believe herself felled by it. The most hideous spectres follow, with all the illusion of reality, advancing as if to throw themselves upon her, so that she will freeze with terror and believe herself lost, with the unexpected sound of a terrible brass tocsin summoning death; and death, in a wink, showing himself with all his horrors, will not the too sensitive spectator, all her senses overcome, pay for her imprudent curiosity at the expense of her fruit? Those most deformed devils, who seem to compete in the talent and pleasure of making her most afraid; those most horrible grimacing faces, which engrave themselves in her feeble brain; those voices, as strong and as terrifying as that of the bull of Thalaris, those colossal and disgusting genies, those deaths' heads flying around her, and all the other frightful objects which strike terror into her spirit, might they not make of her another unhappy Léodamie, who died of fear in imagining she saw the shadow of her dear Protésilas? What dangerous impressions, too, this disturbing and horrible gallery might produce on the children who are brought here? —

I protest to M. Robertson that I have not the least



intention of injuring him, since I am his admirer and the benevolent proselyte of his singular talent. I am happy to presume that his imagination, fecund as it is, will soon find means to prevent the occurrence of these possible inconveniences which I, and others too perhaps, perceive.'

Robertson answered the critic's fears with great amiability:

Of the two inconveniences signalled by the preceding, it has never been reported to me that the last ever happened; the effect of the apparitions was prodigious, and no doubt found the ladies more impressionable than the gentlemen; but the terror, much diminished by the presence of a large assembly, and by the certainty, however much it was sometimes forgotten, of having before one only shadows, produced no fatal results. While several ladies usually had need of smelling salts, only one found herself really ill, and experienced quite a violent nervous crisis. The fault was not due to the phantoms; the sounds of [Franklin's] Harmonica, too sweet and too penetrating, alone were to blame. Imagine, however what emotion this accident produced in the midst of profound darkness, and in the expectation of spectres, whose approach was heralded with a melody imbued with such melancholy!

As to the other inconvenience, since the restraint of the gentlemen or the prudence of the ladies was extreme, I could cite only a single instance; again it occurred during a private performance. The director Barras had had Deputy Malibran reserve the entire room. He arrived with many fashionable people: the company included Joséphine, then the wife of General Bonaparte: Madame Tallien and other ladies. The light was scarce extinguished when the voice of a lady, very animated, cried penetratingly: 'Desist! Desist from that, Sir!'. The thing was turned into a joke and no-one seemed offended.

From these general impressions of the atmosphere of the convent, we turn to a more detailed account of the repertoire:

To complete what I have to say about the Fantasmagoria, apart from the explanation of its processes, I think I should place here the series of principal subjects which I have represented. I am not the author of all of

them; and as most offer wit, grace, oddity or memories, the reader will no doubt regard with pleasure this

SHORT FANTASMAGORIC REPERTORY

The Dream or The Nightmare. A young woman dreams of fantastic pictures; the demon of jealousy crushes her breast with an iron anvil, and holds a dagger suspended over her heart; a hand, armed with scissors, cuts the fatal cord; the dagger falls, it pierces her; but Love comes to carry her off, and cures the wounds with rose leaves.

Death of Lord Littleton. Lord Littleton dines with some friends; suddenly he asks them if they have seen the phantom which has just appeared to him addressing these words to him: *At midnight you will die.* His friends jest about his vision, but his imagination is stuck. They try to distract him and advance the clock without his knowledge to show him that the predicted hour was not fatal. Littleton retires, still disturbed at his presentment; he enters his house, sees that midnight has not yet struck. Midnight strikes, and he expires.

PRESENTATION

Littleton is at table between two persons. – A phantom. – The clock strikes seven. – A voice is heard: *At midnight you shall die.* – Littleton falls back upon his chair, and the phantom disappears. – Torments and anxieties of Littleton. –

– A bed is seen. – Some will-o-the-wisps hover. – The phantom of the past, or Death, lifts the latch of the door, enters, advances towards the bed and opens the curtains. These words are heard: *Littleton, awake.* – Littleton rises, the clock strikes. – The same voice: *This is the hour.* – At the last stroke, a noise of thunder, rain and fire. Littleton falls, and all disappears.

The Pilgrimage of St Nicholas. In France, this saint provides lovers for forsaken maidens: a simple shepherd brings his own vows also, but he remains only an old man whom the maiden appears to disdain.

Preparations for the Sabbath. A clock strikes midnight; a witch, her nose in a book, raises her arm three times. The moon descends, places itself in front of her, and becomes the colour of blood; the witch strikes it with her wand and cuts it in two. She again

raises her left hand; the third time, cats, bats, death-heads float with will-o-the-wisps. In the middle of a magic circle appear these words: DEPARTURE FOR THE SABBATH. A woman arrives astride a broomstick and mounts in the air; a demon, a dandy on a broomstick and many other figures. Two monks appear with the cross, then a hermit, to perform the exorcism, and all vanishes.

Diogenes with his barrel. Alexander and Diogenes. – Diogenes comes out of his barrel with a lantern, and looks for a man.

Macbeth. The king arrives at Macbeth's castle; he is received with the demonstrations of respect of a submissive subject. Macbeth's wife, pushed by ambition, urges him to kill the king; he is indecisive. His wife goes in search of three witches, who appear and promise him the throne: he hesitates no longer, and kills the king. Apparition of the avenging ghost and punishment of Macbeth.

Young burying his daughter. Sounds of a bell; view of a cemetery lit by the moon. Young carrying the inanimate body of his daughter. He enters into a vault, where are discovered a collection of rich tombs. Young strikes the first: a skeleton appears, he retreats. He returns, works with a pick; second apparition and new terror. He strikes the third tomb; a ghost rises up and asks him: *What do you want of me?* 'A tomb for my daughter', replies Young. The ghost recognises him and gives up his place to him. Young places his daughter there. Scarcely has the cover been replaced than the soul is seen rising toward heaven; Young prostrates himself and remains in ecstasy. –

Birth of Rustic Love. A young village girl plants a rose-tree; Nature warms it with her touch, and brings a shepherd who waters it. The rose tree grows; it provides a shelter for turtle doves. Eros emerges from a rose and in gratitude unites the two lovers.

History of Cupid. He is born among the Graces. – Hope cradles him. – Pleasure puts him to sleep. – Beauty awakes him. – Folly directs him. – Inconstancy leads him astray. – Fidelity brings him back.

Temptation of Saint Anthony. A church is seen; Saint Anthony comes out of it, leaving the pious ceremonial for a life still more austere; the church disappears, and Saint Anthony is in the desert; it is the devil who, through malice, has lead him into this place, where he shows him a grotto, a pallet bed and the attributes of mortification. Saint Anthony is on his knees in the middle of the grotto; the Loves appear and Saint Anthony is threatened; they take from him his crown of thorns and his cross ... Temptations of all kinds follow. A kind of prophetess, beside a vase, makes different objects appear from it: a flag, *Glory*; two swords, *power, riches, pleasures*, etc. To impress the holy hermit by the force of example, a kind of Pope (no doubt a Borgia) appears with a mitre, a cross; a devil takes away the mitre, and a half-naked woman undresses him. Saint Anthony responds only with these words: *Withdraw, Satan*; but the tocsin sounds; the Loves set fire to the hermitage and a handsome young man leads the recluse away, his forehead bound with garlands.

Pétrarch and Laura at the fountain of Vaucluse.

Procession and sacrifice of the Druids, who gather mistletoe.

The Ghost of Samuel appearing to Saul.

David, armed against the giant Goliath.

Prosperpine and Pluto on their throne.

Orphée losing Euridyce again

A mad woman in a white robe and in relief. Little by little she is illuminated from behind, and ends by being metamorphosed into a skeleton.

The Three Graces changed into skeletons.

The Dance of the Fairies

A Venus who coaxes a hermit

Offering to Love. Flames rise upon an altar; a Cupid brings a young man, and Venus appears on this altar. The young man and the Cupid disappear insensibly; then the young man appears on his knees. Venus grants him a lover, they are entwined in each other's arms and disappear. The same Cupid returns with an

David Francis collection



old man; a rose tree at the foot of the alter withers, Venus and Cupid are changed into skeletons, and the old man descends with them into the earth.

Convent of Saint Bruno. In the convent where Saint Bruno was the superior, they wish to canonise a monk who has long been considered as a saint. One day everyone is assembled around his tomb, to invoke him, the tomb opens, flames emerge from it, and the monk appears. He avows that, far from deserving to be sanctified, he has always been of very bad conduct, and is damned for ever. He disappears in the midst of demons.

Alceste. Admetis, the husband of Alceste, is sick; Alceste consults the oracle, and learns that her husband will die unless someone else dedicates himself in his place; Alceste resolves to die for her husband. Hercules arrives, learns of this generous sacrifice; he arms himself with his club, hurries to the underworld, battles with the guard-dog Cerberus, whom he enchains, carries away Alceste and returns her to her husband.

The head of the Medusa, as terrifying as ever (7).

The Bleeding Nun. A nun, a victim of her sensibility, returns to float in a cloister where her friend has given herself over to pious meditation.

Charon takes the soul of Admiral Nelson to the Elysian Fields in his boat.

Apotheosis of Heloise. First we see a coffin of pure silver, brightly illuminated; an angel descends from heaven, places a rose upon the coffin. Instantly the coffin disappears, and we see a young woman whose light clothes are of extreme whiteness; she has her arms crossed upon her breast, with a cross in her hand. Little by little she moves, stands, falls to her knees to thank heaven, ends by rising up and disappearing.

A grave-digger, with a lantern, searches for treasure in an abandoned temple; he opens a tomb, and finds a skeleton, whose head is still ornamented with a jewel; at the moment when he attempts to remove this, the corpse makes a movement and opens its mouth; the grave-digger falls dead with terror. A rat was lodged in the skull.

The Dance of the Witches. (Details are given in another chapter)

The Pigeons of Mahomet, the houris, the wine. Mahomet appears, surrounded by rays, with his mottoes : PLEASURE IS MY LAW. The rays are eclipsed. At his left side is a table covered with bottles of wine, and over it: BEHOLD EVIL. On the right, a pretty woman: BEHOLD GOODNESS, CHOOSE IF YOU CAN. A Turk seems very indecisive, and while he hesitates, these objects disappear; the pigeons flutter about and peck Mahomet's ear.

To the list of his own illusions, Robertson adds a number which he describes as SUBJECTS FURNISHED BY M. DE SALLABÉRY. The descriptions appear in a letter in which in which the said M.de Sallabéry says that he could not 'resist the desire to furnish some subjects for the Fantasmagoria. Mr Robertson will choose what he wishes

The Prophetess of Endor.

The apparition of the three witches to Macbeth; that of the ghost of Banquo to the same. There are two superb English prints of these two subjects.

The allegory of Envy torn to pieces by the serpents (in giving mobility to these reptiles one would offer a frightening and moral picture).

The Agony of Ugolino and his family, after Dante.

Saint Dominique, encuirassé, forcing the devil to hold a candle end, burning his fingers, while he finishes his paternosters.

The demon of the tempests as he presents himself to Vasco de Gama, in Camoens.

The opening of Pandora's box, and all the pretty things that emerged therefrom personified.

Holbein's Dance of Death. Citizen Robertson may examine the original prints in the Bibliothèque Nationale.

Robertson comments that all these subjects were chosen with taste and were very suitable to the Fantasmagoria; some were executed and gave pleasure.

Unfortunately it is impossible to know which were carried out and which were rejected. M. de Sallabéry's reference to the English prints of *Macbeth* is intriguing, since in 1799 — when Robertson was already exhibiting the Fantasmagoria — Rudolph Ackermann, the print-seller in the Strand, published a large and magnificent transparency print of Macbeth's visit to the witches. Alternatively de Sallabéry may have been alluding to prints in the Boydell Shakespeare Gallery, a series which was issued over a long period towards the end of the eighteenth century.

Perhaps the most striking aspect of this repertoire is the elaboration of the scenarios: some, like *The Death of Lord Littleton*, read more like descriptions of early films than magic lantern narratives. When Robertson goes on to describe his technical processes, it becomes very clear, moreover, that his shows went far beyond conventional projections. They were very much, in modern terms, 'mixed media' presentations.

Robertson regarded his greatest discovery and greatest secret as the Fantasmagoria effect,

achieved by his Fantoscope lantern. By the time he came to write his memoirs the secret had long been made public: it was first revealed in the law courts, when he brought action for breach of his patent against the disreputable brothers Aubée. Robertson describes the arrangement and mechanism of the Fantasmagoria and Fantoscope in detail;

PROCESSES OF THE FANTASMAGORIA

It is necessary to have a room sixty to eighty feet long, by twenty four feet or more in breadth; it must be painted or draped black. The part of this room dedicated to the apparatus requires a space of twenty-five feet in length. This part will be separated from the public by a white screen of fine cambric tightly stretched, which it is provisionally necessary to conceal from the view of the spectators by a curtain of black material. This cambric screen, of at least twenty feet square, and on which all the images must be reflected, will be coated with a varnish composed of white starch and best gum arabic, in order to render it slightly diaphanous.

It is best that the floor of the section reserved to the spectators should be raised four or five feet above the ground, in order that the apparitions are visible in all corners of the room.

The principal apparatus is the fantoscope (8), a wooden box two feet in each dimension, as at AA, with the inside painted white and the exterior black; [the interior] is accessible through two or three doors, covered in black drapery in order that the light may not appear outside when they are open.

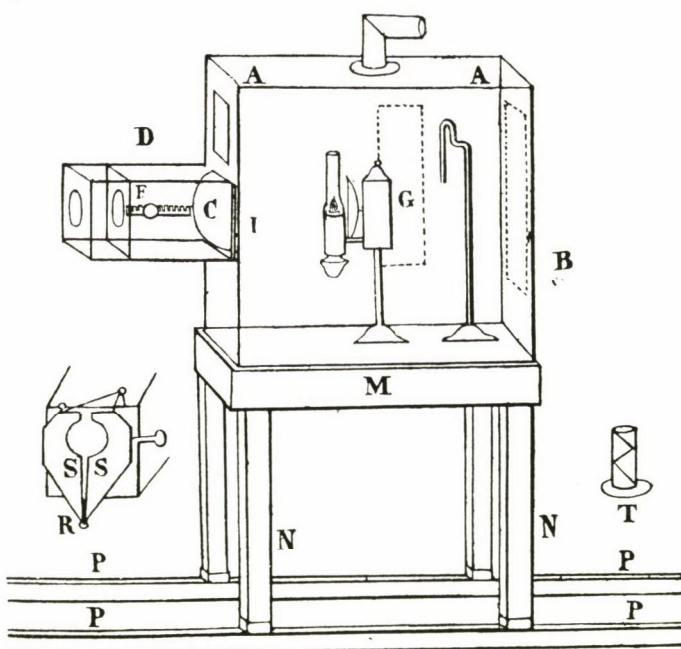
On the front, at I, is a four-inch circular opening to which is fitted a wooden tube, D, whose interior is five inches in diameter by nine inches in length. This tube does not fit tightly against the box, A; it is separated by a short distance, and it is into this interval that are introduced the transparent bodies which must be projected onto the white screen which is given the name of *mirror*. [Robertson continues to use this word to describe the (transparent) screen in his subsequent text. To avoid confusion it has been replaced in what follows by the word *screen*.]

To this tube is fixed at I at half-ball of glass with a four inch focus and four inches in diameter [C]. The lens of this tube is of about three inches focus and fifteen *lignes* diameter [about 1.9 inches]. It is fixed on a diaphragm which is moved by means of a toothed rack when a knob is turned. Inside the fantoscope, centrally fixed and about four inches from the half-ball, place a strong Argand lamp, supplied with a good silver parabolic reflector.

The chimney of the fantoscope is bent or straight as at T, but in this case it has interior interruptions to prevent the light from being visible outside.

7. The head of Medusa

Jac Remise collection 8.





9.

The apparatus R is fixed at the end of the tube D and serves to close it; it is indispensable to regulate the light of objects. SS are two copper plates, joined at R by an axis, and, by means of a knob made to close or open like the branches of a pair of scissors, so as to allow more or less light to pass according to the requirements of the image. During movement of the support M, also called the carriage, the physicist [ie projectionist] must pay the most minute attention to adjusting the progress of the lens and the movements of the plates.

Such is the disposition of the apparatus for transparent objects.* But when it is desired to offer the spectator the reflected images of opaque objects, such as a portrait, a statue or a living person, it is necessary

to replace the tube D by another of around six inches diameter, containing two achromatic glasses of great purity, together giving an eight or nine inch focal length, and being five inches in diameter: then the opaque body, which must always of a colour tending to white, is applied to the support L which is made of iron and whose axis is at a suitable distance from the achromatic glass. For these experiments, the interior of the box A must be hung with a piece of black velvet; their perfection depends entirely on the intensity of the light which illuminates the objects; the use of hydrogen gas must offer very powerful means.

The entire apparatus of the Fantoscope A is placed on a platform M, three feet in height. These four supports

N have little brass casters, in order to give the apparatus a gentle and smooth motion on the two wooden rails, exactly parallel, fifteen to eighteen feet long, and fixed to the floor, in the centre of the cambric screen...

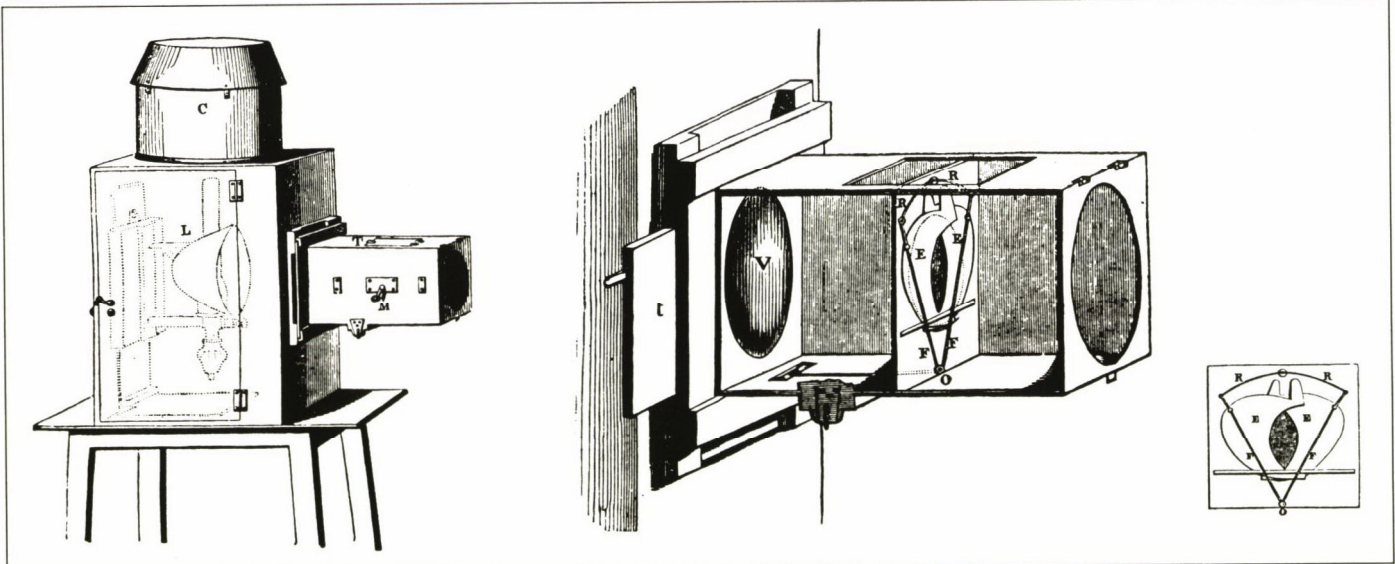
The approach and withdrawal of this apparatus in relation to the [screen], combined with the adjustment of the lens, regulates the size of the image. It follows that, when the fantoscope is nine or ten inches from the cambric, the transparent images are the smallest possible, and do not exceed the size of the original; conversely, when the apparatus is withdrawn to fifteen or eighteen feet, the representation of the images can reach nine or ten feet. It must be understood that, if the opening R, provided with a special mechanism, is opened appropriately, the image may be lit in proportion to its greater or less dimensions, so that it appears to the spectators on the other side of the [screen] at an immense distance or very immediate approach (9, 10).

The description of the *fantasmagoria* would not be complete if I were to neglect to speak of the multiplication of ghosts, which is vulgarly called the dance of the witches.

After the dance of the witches, I have still to speak of *ambulant phantoms*. What would the spectators say if these ghosts and goblins seemed able only to show themselves in the same corners of the room? They would be taken for inanimate spectres, and immobile shadows; they would lose their reputation as spirits, and people would mock, quite rightly, these dead things which wish to put on all the airs of the living. But even the boldest and most indiscreet spectators remain silent when they see the ghosts appears unexpectedly in their midst; when they turn around to find themselves practically in the arms of a phantom, or when, raising their eyes they see it flying over their heads. How often the ladies, at the sight of a melancholy owl or a death's making its way above the audience, have suddenly cried out. However were also some brave ones in the assembly. When Diogenes, with his lantern, advanced among the spectators, it was not unusual to see the imprudent try to seize his lamp; but instantly the philosopher disappeared and went to write upon the wall, at the end of the the room, these sardonic words: I SEEK A MAN. In the next chapter will be found the method of producing this illusion.

* The execution of paintings on glass is of great importance for the *Fantasmagoria*; it demands correct drawing and a special touch. The highlights are obtained by the transparency of the glass which has not received colour, and the shaded parts are achieved with oil with transparent bases. The backgrounds of these paintings are all made opaque; only the image whose representation one desires is apparent. Only in Berlin did I meet a painter who really understood this part.

10.



Robertson was particularly proud of the *Dance of the Witches*, which he wrote about as follows :

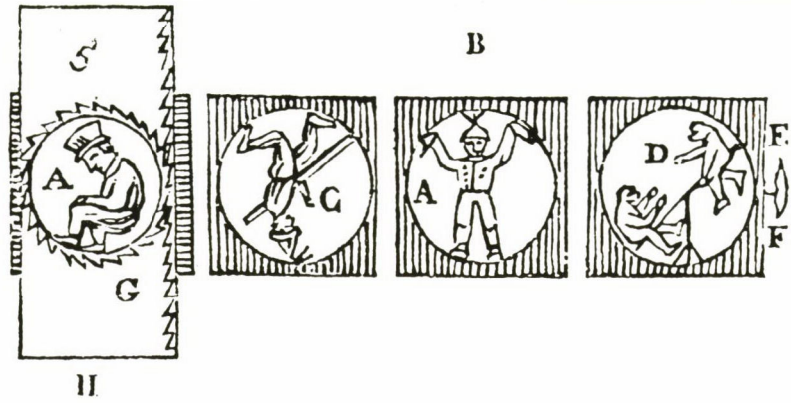
MULTIPLICATION OR DANCE OF THE WITCHES

I have too often experienced the benefits of chance not to recall them here, in connection with this experiment: one night, while trying out fantasmagoric effects, I found myself in the dark when two people, carrying lights crossed the neighbouring room. In the partition which separated us was a very small window, whose double image was projected on the opposite wall of the room in which I was. I observed the movement of these lights, and the multiplication of ghosts was discovered,

The figures used for these experiments are cut out of thin cardboard (11); they must be about a foot in dimension if the fantoscope is used for the purpose. Place them in two or three openings about four feet in front of the [screen, ie behind the screen from the spectators' point of view]. If, in the interior of your box [lantern; Fantoscope] and in front of your cut-out figure, you present the light of a small candle, you will have upon your [screen] the representation of a figure. Double, multiply the number of candles and you will also double and multiply the images of each cut-out on the [screen]. By giving these lights movement and a special arrangement, you will obtain effects that are as curious as the process is simple and ingenious.

I made out of copper, for this experiment, a dancer whose legs and arms had several movements. The space between the legs, which had to be [represented in the cut-out as] solid, was closed with leaves of copper joined like a fan. You can imagine the effect produced by the simultaneous movement of all these legs, sometimes as many as fifty.

However it is best to make this experiment (which is astonishing only when there is a great multiplication



12.

of the figures) with a special division, A, at a distance of four feet from the screen, C; you will then have less trouble with the movement and arrangement of the candles, B.

With this multiplication effect specifically in mind, Robertson goes on to describe the making of rudimentary mechanical slides :

DANCE OF THE WITCHES WITH MOVEMENT

It will be readily understood that if the card with the figure A (12) cut out of it is able to revolve in a frame, B, the figure will sometimes have his feet in the air, sometimes do a somersault, as in C. Or two figures can even be made to see-saw, D. One can also make jaws move when representing monkeys. To produce the movement, the knob E is moved from F to E, and each end of the see-saw successively rises and falls.

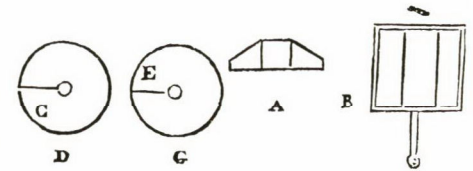
If the figure at 5 is mounted in a circular card, A, with a toothed wooden ring, and if the frame H is also equipped with teeth, when the frame G, which holds A, is moved, A will move while somersaulting forwards, or backwards if the frame is pushed back.

Robertson also employed a more sophisticated device for multiplying the images on the screen:

MULTIPLICATION

When I went to double or triple a figure, I use a glass two inches in diameter cut in three surfaces A and mounted in a little wooden frame, B (13). This prism must be introduced three inches from the lens of the Fantoscope.

13.



If it is desired to multiply a single head nine times, it is necessary to offer at the same time a glass eighteen *lignes* [about 2.25 inches] square, and cut in nine facets. When the glass is turned on itself all the images will have a rotating movement.

Another source of justifiable pride to Robertson was his ability to project the image of opaque objects. This was achieved with the *Mégascope*, which appears to have been used in conjunction with the Fantoscope:

MÉGASCOPE

The etymology of this word signifies: *To see objects enlarged*. Fantasmagorie owes to me the discovery of this instrument, and particularly its application to artificial light. The physicist Charles, who was the first to use it, was extremely jealous of it.

Expansion. The fantoscope is composed of a first glass on the side of the object, of two foot focus, and of a second glass on the other side of seven feet focus. The distances between the two in the tube is four inches.

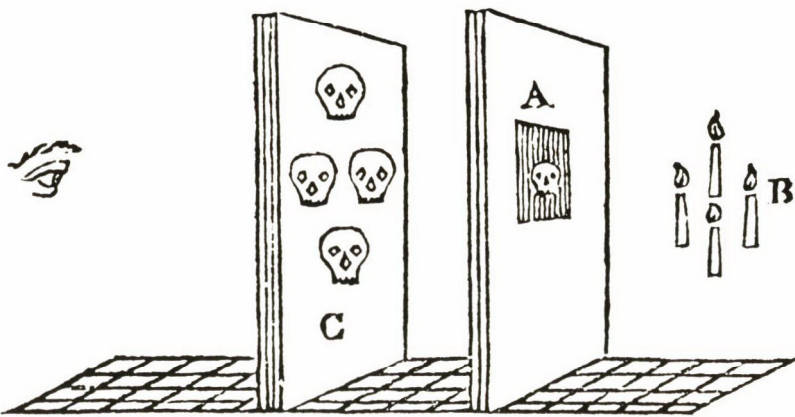
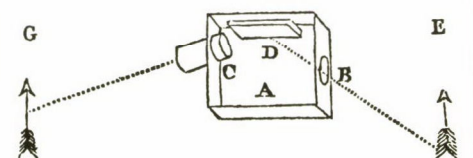
I would place the tube at a distance of fifteen feet from the [screen]; I would illuminate my opaque objects with a single light source, composed of five jets with air current, supplied with silver reflectors. The objects are eight inches away.

ANIMATED MÉGASCOPE OR LIVING PHANTASMAGORIA

If it is desired to obtain the image of a larger object, of a person for example, add to the same arrangement, which is eighteen feet from the [screen], the following apparatus (14):

- A. Special box approximately 10 inches painted black inside.
- B. Diaphragm with 6 inch opening.
- C. Glass objective of focal length 8 feet and 2 inches in diameter.

14.



- D. Parallel mirror of 6 inches.
- E. The object.
- G. The corrected image of this object. It must be fitted, at a height of 8 or 9 feet, on the support on which the fantoscope for opaque bodies is fixed; illuminate the person at E strongly, his image will appear on the screen at G.

This process, which has also been developed by M. Lenoir, a very educated amateur, shows the objects the right way up; but it is impossible, because of the obliquity of the mirror, to get the feet of a person in focus when the head is in focus, and *vice-versa*.

It is clear that such an illusion as the *Apotheosis of Heloise* was accomplished by projecting the image of a living person: Robertson gives directions for making a black-lined coffin for the purpose.

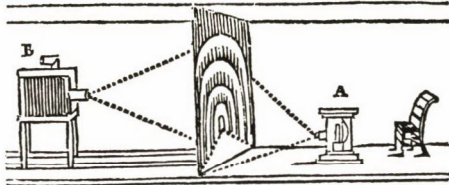
The well-known illustration of a Fantasmagoria performance clearly shows the technique of projecting images on to smoke (1); and in his text Robertson speaks of the effectiveness of this. Even more intriguing however is the suggestion that he initiated the use of superimposed projections, using two lanterns, one on each side of the screen. He describes for instance the arrangement for *The Bleeding Nun* and for *Shakespeare's Grave Digger*.

APPARITION OF THE BLEEDING NUN

The sound of a distant bell is heard. In the recesses of a cloister dimly lit by the last rays of the moon, appears a bleeding nun, with a lantern in one hand and a dagger in the other; she slowly approaches and seems to seek this object for her desires. She comes so close to the spectators that they are often seen to move to let her pass.

Explanation. This experiment presents a great difficulty; to project a new moving image on the first picture representing a cloister. It is easy to see that the apparatus used for the motion of the nun would be visible to the spectators if it was in the path of the rays of the fantoscope used for the cloister. To resolve this problem, it is necessary to place fantoscope A (15) for the cloister on the spectators' side of the mirror (the transparent sheet) and the other B for the nun behind the mirror...

15.



SHAKESPEARE'S GRAVE DIGGER

The scene represents a cemetery; half the picture must be projected on the screen by apparatus A, which is on the spectators' side; and the other part by fantoscope B which is behind the screen. If someone suitably costumed walks close to the screen and in the area illuminated by fantoscope B, his shadow will be visible to the spectators placed in A.

This further reveals the use of live actors as part of Robertson's 'mixed media' presentations.

One section of the book describes a variety of ingenious optical illusions which formed part of his show; and it is clear that items listed in the repertory are not necessarily projections. His Diogenes, described as an 'ambulant phantom', for instance, seems to have been in the nature of an illuminated puppet:

AMBULANT PHANTOMS. DIOGENES AND HIS LANTERN

To execute this subject, it is necessary to have a mask-maker create a character head in fine linen which is then soaked in wax to make it transparent (16). Artistically fixed on a plank, it is suitably draped and

illuminated from inside by a lantern, fitted with a small device which can be lowered or raised rapidly so as instantly to conceal or expose the light, and in consequence the spectators' view of the object. The lantern is a simple cylindrical glass bottle containing essential oil of cloves in which a few grains of phosphorous have been dissolved; when the bottle is opened, the air introduced illuminates the interior. This light disappears when the bottle is closed. The writing is executed with a ray of phosphorous which leaves a luminous trace.

Presumably such effects as the *memento mori* skeleton with which Robertson so dramatically closed the show, was a similar 'ambulant phantom'.

Showmanship clearly played as great a part in Robertson's performances as science. In particular he laid great stress on his sound effects:

I observed that the monotony of sound was favourable to the illusions of the fantasmagoria. A uniform noise, so to speak, puts thought to sleep; all the ideas seem to concentrate on one and the same object and one and the same impression: this noise has another object moreover, it serves to conceal the movement and the very presence of men and things.

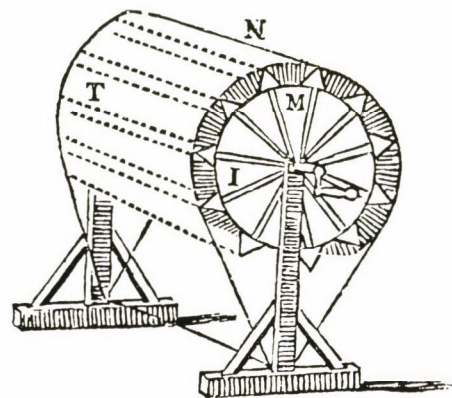
ACCESSORIES OF THE FANTASMORGORIA HARMONICA

The melodious sounds of *Franklin's Harmonica* contribute powerfully to the effects of the fantasmagoria, in preparing not only the minds but the very senses for strange impressions, by a melody so sweet that it sometimes gives great irritation to the nervous system; if this instrument is not available, the *celestina* would be preferable to an organ. Wind instruments, especially the horns, are preferable to stringed instruments.

CHINESE TAMTAM called GONGON in Sweden

The use of this instrument with its loud and terrible noise should be used with discretion and only at important moments. Some object, such as the Medusa head (7), which appears to come from far off to throw itself upon the public, will produce greater effect if this instrument is struck violently at the moment when the head has acquired its greatest enlargement. Taste and intelligence will decide upon the use of the bell.

Robertson also describes some of the sound effects he achieved by time-honoured stage methods. His rain machine consisted of a cardboard spiral enclosed in a tube and filled with dried peas. For thunder he replaced his original device of a sheet of copper with an oak frame covered in donkey skin. When this was cleverly struck with the fists, he said, it produced a grave and impressive rumble. Wind effects were produced in the usual way, with a band of taffeta stretched over a wooden cylinder, turned by a crank (17).



17.

How - tentatively, while awaiting new research and external evidence - should we assess Robertson's importance in the history of projection and the prehistory of cinema? It is apparent that he employed a great variety of experiments and techniques in his shows; and it is also clear that very many of these did not originate with him, but were already familiar to Ozanan and Hooper at least a quarter of a century before. The Fantasmagoria effect, in its conscious and perfected use, should certainly be credited to him. Lanternists must from the beginning have been conscious of the effects which could be obtained by changing the distance between the lantern and the screen; but Robertson appears to have been the first to exploit these, to provide an easily adjustable lens, and to equip his lantern with roller-wheels and, it appears, a rudimentary railed track. One interesting, physiological aspect of Robertson's fantasmagoria effects, seems not previously to have been noted. It has frequently been reported - for example by anthropologists who have had the opportunity of taking films to primitive people - that spectators unaccustomed to watching films, and seeing for the first time a tracking shot, have the impression that the figures or objects on the screen are growing larger or smaller, remaining in the same place, rather than that they are approaching or retreating. Robertson's accounts never indicate, however, any such perception of the fantasmagoria effect: the audience seems never to have been in any doubt that the image was advancing upon them or retreating.

Robertson was undoubtedly proud and jealous of his achievement as the creator of the Fantasmagoria. He seems to have been less conscious of any momentous innovation in using two lanterns to superimpose images, although there is to date no evidence of any precedent. There is certainly no recorded parallel to Robertson's combination of back- and front-projection for the purposes of superimposition. Nor, indeed, can we confidently assess how novel at this period would have been his extensive use of back-projection.

The certainty is that Etienne Gaspard Robertson, for all his protests that his purposes were pre-eminently scientific, was a great showman. The Fantasmagoria, first in the Pavillon de l'Echiquier and subsequently in the Convent of the Capucines, appears to have been the world's first instance of a permanent show utilising projection as its principal attraction. It is no small tribute to the effectiveness of Robertson's invention and *mise-en-scène* that he was able so satisfactorily to distract, delight and thrill a generation of Parisians still undergoing the traumas of a Revolution that had changed forever the political order of Europe.

16.

