

IRVING AND STAGE LIGHTING

STAGE lighting, as we understand it now, is the growth of a comparatively few years. The one person to whom the modern cult is due is the late Sir Henry Irving. When he took into his own hands in 1878 the management of the Lyceum Theatre, the lighting of stage scenes was crude and only partially effective. But the possibilities of this branch of art had been for a long time in the actor's mind, and when he became sole master of a playhouse of his own, with undisputed sovereignty, he began to apply to it his theories and his experience, with results which dominate the whole artistic mysteries of the stage to this day. As a matter of fact, the history of the Lyceum Theatre during Henry Irving's management—from 1878 to 1898—is the history of modern stage lighting. In 1878 he reorganised the whole theatre, which was then very much in the condition in which it had been put during Fechter's management. Fechter had in his time done much for the mechanics of the stage; indeed, the stage which he rebuilt at the Lyceum was a very elaborate affair, full of traps and appliances, but all of these requiring so many struts and supports that the space between the stage and the mezzanine floor, and between the mezzanine floor and the cellar, was of very little use for any collateral purposes—storage, passage, &c.—required in a playhouse. Irving had all this hampering matter removed in the process of time—part being done before he began the season of 1878-79, and the remainder when, in 1881, he cleared out all the rubbish left in by the builders when the theatre was rebuilt after the fire of 1830.

When the reconstruction of 1878 was in hand special care was taken to bring up to date the mechanical appliances for lighting the stage. In those days gas was the only available means of theatre lighting—except, of course, 'limelights,' which were movable and the appurtenances of which had to be arranged afresh for every play done. But for ordinary lighting purposes gas was used; and, in order to ensure safety, certain precautions were, by Irving's direction, adopted. Instead of having all the gas to be used in the theatre—both for the stage and auditorium—supplied from one main, as had been theretofore done, he had supplies taken from two separate mains. Thus, in case

of explosion, or any other cause of interruption outside the theatre, it was possible to minimise the risk of continued darkness. To this end a by-pass was made connecting within the theatre the two supplies. Of course, an explosion in a gas main, no matter where occurring, is apt to put out all the lights fed from it—if lit. This used in those days to be the great source of danger from fire, for with the enormous number of burners in use in a theatre all turned on, and the gas escaping, the introduction of a naked light was an immediate source of danger. Thus, Irving's first care was to minimise such risk by having an immediate supply of gas available from quite another main. In the Lyceum Theatre a large number of men were employed to look after the gas, to light and turn it off as required. The rules regarding this work were very strict. Each gas-man had to carry (and use for his work) a spirit torch. Under no circumstances was he allowed to strike a match except in places suited for the purpose. After all, it was not a very difficult job to light up a scene, so far as the carrying out of the appointed way was concerned. To make this apparent to a reader not well versed in stage appliances it may be as well to explain the various mechanical appliances for lighting used on the stage :

(1) Footlights, or 'floats,' as they were called in the old days of oil-lamps, the name being retained when the special applicability for it had passed away; (2) battens; (3) standards; (4) lengths; (5) ground rows; (6) all sorts of special form and size, made to suit particular pieces of built scenery.

Of these lights, the only kind directly observable by the public are the footlights. That is, they are in front of the stage, but it is essential that they be not themselves seen; otherwise their glare would entirely destroy all distinctions of light. What the public sees are the backs of the reflectors which hide the glare from the audience and send it back upon the stage. These lights are of great power. In the present time, when electric light is used for the purpose, these lamps vary from twenty to a hundred candle-power. To realise this blaze of light it must be remembered that an ordinary domestic light of the 'Swan' or 'Edison' pattern is of some eight candle-power. In Irving's time—at the close of his personal management of the Lyceum—the footlight lamps were of sixty candle-power, modified occasionally for artistic purposes, as I shall show further on.

Battens are long frames that run across the top of the stage from side to side. These contain a large number of lamps, placed side by side so as to show a very strong line of light. The battens are hung with such fittings as allow them to be raised or lowered at will. In the gas days the batten was a wooden frame to which was attached, in such a position that the light could not

come into contact with anything inflammable, an iron gas-pipe, in which were fixed at regular intervals a multitude of burners. The special burners used for this purpose were what were known as 'fish-tail' burners, which allowed the flame to spread laterally, and so were, by securing good combustion, effective for lighting purposes. This gas-pipe was connected with the main by flexible leather tubes, so that provision could be made for altering the height above the stage without interfering with the supply of gas. At one end of the pipe was a burner fed by quite another tube, so that it would keep alight when the main supply of that pipe was turned off. This jet was known as the 'pilot,' and was specially lit in readiness before the beginning of the play. When the supply of gas was turned on to the batten pipe, the pressure sent the flame along; for as the burners began to be fed all along the line the spreading flame of one burner caught the escaping gas from the next orifice, and in a few seconds the whole line would be alight. To ensure readiness, alterability, and safety in these and other lights, all along the stage from front to back, behind the line of the 'wings' which mask in the scene, were special water-taps connected with the gas mains of the theatre, so as to ensure a constant supply up to these points. The flexible tubes had metal ends which fell easily into place in the taps and left no leakage. Then the gas-man with his key turned on the tap so as to make lighting possible. All these taps were so arranged that the supply at each batten could be turned on or off at the 'Prompt,' where the 'gas-table' was fixed vertically. There was a batten for each portion of the stage, from front to back. For a stage is divided for working purposes by measured distances which are the continuance of the old 'grooves' by which the 'flats' in old days used to be pushed out or drawn off. All stage hands understand No. 1, No. 2, No. 3, and so on.

The standard is a vertical pipe, set on a strong, heavy base, so as to be secure from accident of lateral pressure. The gas supply enters through a flexible tube at base, arranged with the taps in the same manner as are the battens. The top of each is a cluster of very powerful burners; thus, each standard is in itself a source of intense light, which can be moved when required.

Lengths are battens of convenient size, and are made adaptable for almost any use. As the purpose of lighting is to throw the light from front and back of the stage, these are often arranged to be hung on the back of the scenic piece in front. Hooks are provided for the purpose. Lengths can be placed in any position or shape; and, so long as their direct light is concealed from the audience, can be made to enhance or supplement any volume of light.

The ground rows are a length applied to special purpose. Stage perspective differs somewhat from the perspective of nature, inasmuch as it is much stronger; and it is therefore necessary at times to even-up this extra strength to eyes accustomed in ordinary to a different perspective focus. In fact, in proper stage lighting—that which produces what seems to be the ordinary appearance of natural forces—it is not sufficient to have all the lighting from one point. The light of nature is so infinitely stronger than any artificial light, and so much better distributed, that science and art have to be requisitioned to produce somewhat similar effect.

As to special lighting pieces for 'built' scenery, these have on each occasion to be made to serve their present purpose. In 'built' scenery it is sometimes difficult to avoid throwing objectionable shadows. The lights are so strong, and the space available is so small, that there is hardly room at times for simple effects. So, when there is a shadow which cannot be avoided, it is generally possible to build in some piece of seemingly solid work, behind which a light can be so placed as to destroy the shadow.

Now, in 1878, all this had practically to be done by gas. Of course, what are known as 'limelights' were in use. These are exceedingly powerful lights, produced by playing burning gas heavily charged with oxygen and hydrogen on a fragment of lime. This light is so concentrated that it is easily adaptable to the localising of strong light. The appliance for producing the light being small, it can be easily placed in a specially-made box, whose face is a lens of strength suitable to the work to be done. The effect is, of course, proportionate to the amount of concentration. In fact, the general scientific law applies that what is gained by direction is lost in force, and *vice versa*. In a well-equipped theatre many different kinds of limelights are now in use, the lenses being in such variety that a skilful operator can select that best adapted to the special occasion: 'open limes,' 'spot lights' of varying focus and intensity, lights so constructed as to cover a certain amount of space, and so on. The moon, the lights from the windows of the 'old home,' the convenient ray which follows the hero about the stage, so that the audience may never forget that he is present, and nearly all such aids to the imagination of the spectator are produced in this way. In '78 these appliances were comparatively rare, but the example set by Henry Irving encouraged other managers to use them, and an industry sprang into existence. New firms undertook work which had hitherto been almost a monopoly. Fresh men in ever-increasing numbers became trained to the work, and nowadays it is hard to imagine that not many years ago it was almost necessary to train workmen for this minor art.

Now as these two methods of lighting—gas and limelight—were already in existence when Henry Irving managed a theatre for himself, his part in the general advance was primarily to see that both these means were perfected. To effect this he spared no expense. The equipment of the Lyceum Theatre so as to be able to use gas-light most readily and to the best advantage was a costly job. It would have been almost impossible for a layman to understand why pipes of such calibre were required for the gas of one place of business. The by-pass between the two intakes of gas—only to be used in emergency—was more than twelve inches in diameter, and the piping, fixed and flexible, throughout the building ran into many thousands of feet. But the final result was excellent. When the mechanism was complete it was possible to regulate from the 'Prompt' every lamp of the many thousands used throughout the theatre. This made in itself a new era in theatrical lighting. By it Irving was able to carry out a long-thought-of scheme: that the auditorium should be darkened during the play. Up to this time such had not been the custom. Indeed, it was a general aim of management to have the auditorium as bright as possible. The new order of things was a revelation to the public. Of course, when the curtain came down the lights went up, and *vice versa*. In the practical working of the scheme it was found possible to open new ways of effect. In fact, darkness was found to be, when under control, as important a factor in effects as light. With experience it was found that time could be saved in the changing of scenes. It used to be necessary, when one 'full' scene followed another, to drop a curtain temporarily so that the stage could be lit sufficiently for the workmen to see what they were doing. But later on, when the workmen had been trained to do the work as Irving required it to be done, darkness itself became the curtain. The workmen were provided with silent shoes and dark clothing, all of which were kept in the house and put on before each performance. Then, in obedience to preconcerted signals, they carried out in the dark the prearranged and rehearsed work without the audience being able to distinguish what was going on. Later on, when electric power came to be harnessed for stage purposes, this, with different coloured lights, was used with excellent effect.

Irving was always anxious to have the benefit of new discoveries applied to stage effects. In 1885, when he produced *Faust*, electricity was used for effect the first time. Colonel Gouraud (Edison's partner) kindly arranged an installation for the fight between Faust and Valentine. Two metal plates were screwed on the stage, to either of which the current of one pole was applied. One of the combatants had a metal plate screwed to the sole of the right shoe. From this a wire was carried

through the clothing and brought into the palm of the right hand, where, on the rubber glove, was fixed a piece of metal. This being in contact with the metal handle of the sword—and a similar contrivance being arranged for Mephistopheles—a direct communication was established so soon as the demon's sword struck up the weapons of the combatants, and sparks were emitted.

It was not till about 1891 that electric-light was, even in a crude condition, forward enough to be used for general lighting purposes in British theatres. Irving had it then put in by degrees, beginning with the footlights, which formed a test of suitability. Electric-light differs from other lights in that when it is lowered in degree it changes colour. This is perhaps due to the fact that it is not in the ordinary sense a light at all, but a heat visible *in vacuo*. In order to allow the footlights to be turned down it was necessary in those days to have a liquid resistance, which was a wasteful as well as an expensive mechanism. In addition, the light even then afforded was an unpleasing one for the stage, unless the vacuum lamps were tinted. Therefore considerable consideration and experience were necessary before a satisfactory result could be achieved. The purpose of lowering footlights is to create a scenic atmosphere of night or mystery or gloom. Now in nature night and mystery and gloom are shown in tints of blue; but as electric light is produced by red-hot carbon the atmosphere was warm instead of cold, cheerful instead of gloomy. In those days coloured lights on the stage were in their infancy, and the best device which we were able at first to adopt was to cover the lamps of the footlights with bags of thin blue paper. This was effective, though wasteful; for, of course, in getting the colour a portion of the illuminating power was lost. In addition, though the heat of an ordinary electric globe is not very great, when the light within is of sixty or a hundred candle-power a certain amount of heat is created; and if this, or a portion of it, be retained in a paper bag there is a certain amount of danger of combustion. Of this the licensing authorities could not approve, and the device was abandoned in time to avoid trouble. In a theatre, of all places, it is necessary to remember the wisdom of the old saw: 'A well-bred dog goes out of his own accord when he sees preparations being made for kicking him out.' It may hereafter be interesting to remember that even in America, where electric lighting was in those days far ahead of what it was in England, we thought it advisable to bring—and actually to use them—a supply of blue paper bags for the footlights.

It may also be well to remember that though America has gone very fast and very far in her theatrical lighting, it only reached any considerable excellence when Henry Irving showed the

stage producers what could be done. When we first visited America, in 1883, there was only one theatre there—the Boston Theatre—which had really good appliances for stage lighting. I speak here merely of the mechanism of lighting, not of the art of it. In the Boston Theatre there was a thoroughly well-thought-out scheme for the gas-lighting then in vogue. Its perfection was to be seen in the ‘gas-table’ in the ‘Prompt,’ which was then far in advance of that of any other theatre that we played in. I only quote this fact as evidence of the extraordinary rapidity with which in that marvellous land of industry and mechanism a good idea is seized on and developed to the full. At the present time a vast number of the lighting appliances for the theatre are patents of the United States, and the goods are there manufactured.

The installation of electric light in the Lyceum Theatre brought with it one somewhat cumbrous and expensive addition. Up to then the large amount of gas consumed for lighting purposes all over the house created a sufficient heat for the comfort of the audience; but so soon as electricity was used instead of gas as the main lighting, we noticed that the men of the audience began to turn up their coat-collars and the ladies to wear their cloaks. So we had to have an elaborate system of hot-water heating installed. This took some time, and till it was in working order we had to use a large number of powerful gas-stoves, placed so as adequately to heat all the passages and guard every intake of cold air.

But when once the electric current was fairly installed and the hot-water service was in working order, the old comfort was restored. The heating, which had to be combined with ventilating, was an elaborate scheme too complex to find a place in this article.

All that I have said of lighting in the theatre is merely with reference to the mechanism. The part most noteworthy, and which came from Henry Irving’s incomparable brain and imagination, was the production of effect. In the ‘seventies, as I have said, there was very little attempt to produce fine gradations of light and shade or of colour. Henry Irving practically invented the *milieu*. When he became a manager the only appliances used were what were called ‘mediums,’ which were woven films of cotton or wool or silk drawn between the lights and the stage or scenery which they lit. The finest stuff we then used was ‘scrim,’ a thin silk which gave certain colour without destroying or suppressing an undue amount of the illuminating quality. This stuff, dyed only in a few rudimentary colours, could be used to go beneath the battens and encompass the standards, wire guards being affixed everywhere to

prevent the possibility of conflagration. It was also used occasionally to cover the bull's-eyes of the limelight boxes. But it was impracticable to produce colour effects, except generally. The stage could be fairly well reduced to one dominating colour, but that was all.

Accordingly Irving set himself to work in his own quiet way, and, with the help of his employés, had various mechanical processes devised. He had transparent lacquers applied to the glasses of the limelights, and, when electric light came in, to the bulbs of the electric lights, and thus produced effects of colour both of intensity and delicacy up to then unknown. Instead of rudimentary colours being mentioned on the lighting 'plots'—by which the operators work—'blue,' 'red,' &c., the plots began to direct the use of certain fine distinctions of colour, so that before long the men themselves became educated to finer work and would no more think of using 'dark blue' instead of 'light blue,' or 'steel blue' instead of 'pale blue,' than they would insert a slide of any form of red instead of any form of blue.

Then came quite a number of colours new to this use, as the possibilities of lacquer for the purpose became known and enlarged. Shades began to take the place of colours in matters of choice, and soon even the audience became trained to the enjoyment of fine distinctions of colour.

The artists who worked for the stage and who were always great admirers of the 'Chief'—or the 'Governor' as everybody called him—were very loyal to him and very willing to carry out his wishes, using for the purpose their natural abilities and the skill which they had evolved by labour and experience. Indeed, so far as I could judge, the very men who painted the scenes, and did it in so masterly a way, were glad to have him 'light' them and gave all their understanding to his assistance in the work. He in turn was loyal to his fellow artists and workers; I never knew him to fail in giving all the credit and all the honour to those by whom he was assisted.

Then, having put the matter of degree of light and its colours in good shape for use, he began to make further improvements in the artistic use of it. For instance, it was formerly usual to have the footlights extending in unbroken line from side to side of the proscenium arch. Now he had this line—which contained several rows of lamps of different colours—broken up into sections. Thus any combination of colour could be easily made by use of the lighting table in the 'Prompt.' By this means Irving was able to carry out a class of effects which had long been in his mind. He had noticed that nature seldom shows broad effect with an equality of light. There are shadows here and there, or places where, through occasional aerial density, the light is unevenly distri-

buted. This makes great variety of effect, and such, of course, he wanted to reproduce. An audience—or the bulk of it at any rate—always notices effect, though the notice is not always conscious; it is influenced without knowing the reason. With, then, a properly organised series of sections—both with regard to amount of light and colour of it at disposal—a greater variety of light was given to a scene. Also, as it is advisable to centre effects on a stage, it became an easy matter to throw any special part of the stage into greater prominence—in fact, to ‘vignette’ that part of the stage picture which at the moment was of the larger importance.

Irving also began to produce and alter effects of the combinations of coloured lights—to use the media of coloured lights as a painter uses his palette.

It was a most interesting thing to see him setting about the lighting of a scene. There were, of course, certain rudimentary matters which had to be observed in all scenes; but it may be useful to describe the *modus operandi*. This work, especially in its earlier stages—for it was a long process, entailing many rehearsals—was done at night, when the play of the evening was over. The stage workmen, after a short interval for their supper, got the new scene set. While this was being done, Irving and I, and often the stage-manager if he could leave his work, took supper in the ‘Beefsteak Room,’ which was one of Irving’s suite of private rooms in the theatre. When the scene was ready he went down—usually sitting in the stalls, as the general effect of the scene could be observed better from there than from the stage. The various workmen employed in the lighting ‘stood by’ under their respective masters—with, of course, the master machinist and the property master and *their* staffs ready in case they should be required. There were always a large number of men present, especially at the experimental stages of lighting. The gas engineer, the limelight master, the electrician, all had their staffs ready. Of these the department most important was that of the limelights, for these lights had to be worked by individual operators, all of whom had to be ‘coached’ in the special requirements of the working of the play before them; whereas the gas and electric lighting was arranged with slow care, and was, when complete, under the control of the prompter—or the masters under the direction of the prompter—who took his orders from the stage-manager. It was seldom indeed that any member of the company was present at a lighting rehearsal; never in the earlier stages. It was only when some special requirement made the presence of one of the actors advisable that such actor attended, and then only by request. The rule did not apply to Miss Terry, who, as a privileged person, could attend whenever she

chose. But, as a matter of fact, she was never present at the earlier rehearsals when the scheme of lighting was invented and arranged. These were late at night, or rather, early in the morning, long after—generally hours after—she had gone home. Let it be clearly understood that the lighting of the Lyceum plays was all done on Irving's initiation and under his supervision. He thought of it, invented it, arranged it, and had the entire thing worked out to his preconceived ideas under his immediate and personal supervision. There was nobody in the theatre—or out of it, for the matter of that—who could touch or even help him. It would have prolonged his life if he could have had such help. I can vouch for this, for it was my usual practice to stay with him at such times. It was none of my business, and I was not myself a proficient; but it was a matter of absorbing interest to me to see this new branch of stage art developed, and I took full advantage of the opportunities afforded to me by my position with Irving. It was very seldom indeed that I was absent from a lighting rehearsal during the twenty years Henry Irving had the Lyceum under his sole and personal control.

In these days, when every well-appointed theatre in the United Kingdom and America has adequate appliances for proper stage lighting—electric, gas, limelight, calciums, and such other means as are adapted for special or occasional use in temporary scenic effects; flaming rosin, liquipodium, electric flashes—it is perhaps as well to think of a time when all these things were in their infancy, and to remember especially the great actor to whom the advance and the attainment of perfection were mainly due.

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