

THEATRE BACKSTAGE

FROM
TO

The letters 'A' and 'Z' are rendered in a large, white, serif font. The 'A' is positioned on the left and is partially covered by a blue brushstroke. The 'Z' is positioned on the right and is partially covered by an orange brushstroke. The brushstrokes are thick and textured, giving the impression of paint or chalk applied over the letters.

Third edition, revised and expanded

WARREN C. LOUNSBURY
NORMAN BOULANGER

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藏书章

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THEATRE BACKSTAGE

FROM A TO Z

Preface

A reference book has an interesting shelf-life. First it is useful, then helpful, then quaint, and finally historical over what seems to be an increasingly shorter time lapse. The 1972 edition of *Theatre Backstage from A to Z* comes precariously close to reaching the historical stage in the areas of sound, electronic control, and equipment. Therein lies the mandate for revision.

In attempting to put together a reference book for theatre a real confusion exists. For many theatres, much of the new and innovative equipment carries a prohibitive price tag and therefore, technicians are forced to mount this year's productions with equipment that was old 20 years ago. Consequently, because much of this "ancient" equipment is still in use, we are reluctant to eliminate the old and functional just because something new and exciting reaches the market. We are equally reluctant to eliminate the new and exciting because it carries an impossible price tag. We therefore ask the in-

dulgence of the reader in accepting our decision to include both.

It is through the efforts of my co-author, Norman Boulanger, that this third edition of "A to Z" has come to fruition. Having retired from theatre responsibilities many years ago, I had no intention of returning to the fray. However, because of Norman's continued connections with both professional and academic theatre, his intimate knowledge of sound systems and computer boards and his indomitable determination, I capitulated; at first with reluctance but soon with exuberance. My sincerest thanks to Norm.

Among the many to whom we are indebted for contributions, we are especially grateful to: Luke Vorstermans, Pat Blakley, Bob Hutchins, Pam Bruton, Eddy DeBorde, Helen and Jacel Evans, Neil MacDonald, Jan A. Nelson, Charles V. Jones, Floyd E. Hart, Jr., Edie V. Evans, Mike Boulanger, and all the long-suffering students whom we have taught over the years.

Introduction: Scenery and Lighting Practices in the United States

The following broad survey of stage scenery and lighting practices in America is designed as (1) a quick review and (2) an encouragement for future stage technicians to continue research in this interesting and productive area of inquiry.

SCENERY

In the Beginning

More than one hundred years elapsed between the establishment of the first English settlement in Jamestown in 1607 and the building of the first American theatre. During this period there is scattered evidence of strolling players appearing in New York and Charlestowne (Charleston), South Carolina, but it is difficult to imagine complete productions with no established theatres in which to play and with transportation limited to horseback, wagons, and occasional sailing vessels.

Despite transportation difficulties, the rigors of colonial life, and the restrictive moral code of the Puritans, sufficient activity in the entertainment field was in evidence in 1709 to cause the Governor's Council in New York to issue a ban on playacting, cockfighting, and other disreputable forms of entertainment.

The first recorded theatre to be built in America was constructed in Williamsburg, Virginia, in 1716, for Charles and Mary Stagg. No further record has survived concerning the theatre, the company, the scenery, or the Staggs.

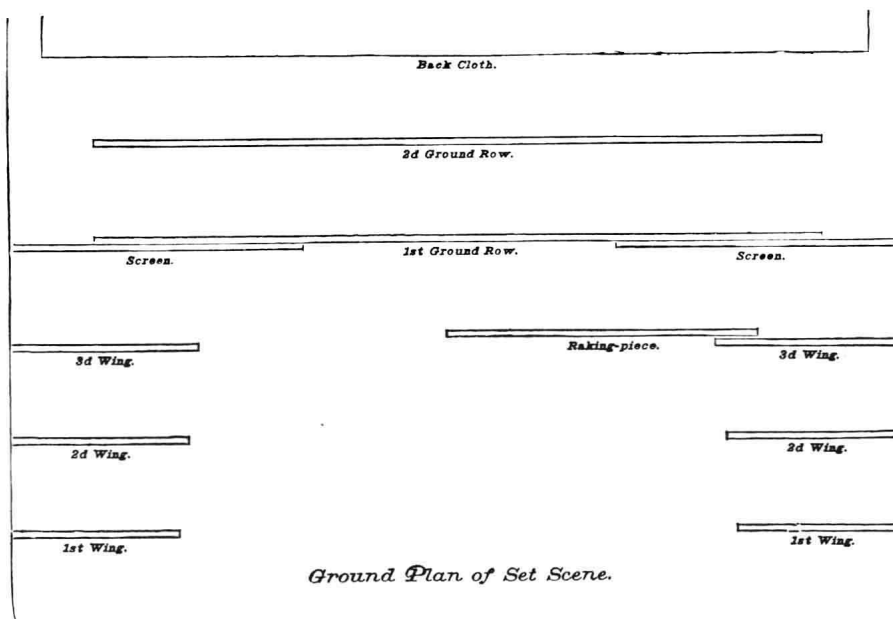
Scattered reports of theatre activities in and around Philadelphia, New York, Charlestowne, and Boston indicate a growing interest in the theatre during the first half of the eighteenth century: in 1735 *Flora or Hob in the Well*, the first production of an opera in America, was presented in Charlestowne; in 1736, William and Mary Col-

lege in Williamsburg offered Addison's *Cato* as a public presentation; in the same year the New Theatre in Dock Street, Charlestowne, was financed by subscription and opened to the public; in 1749 William Plumstead's warehouse in Philadelphia housed a company headed by Walter Murray and Thomas Kean. Little is known of these so-called theatres and even less is known of the scenery they used, although one can assume it was of the wing-and-drop or wing-and-shutter variety.

The First Professionals

In 1752 William Hallam, bankrupt manager of the Goodman's Fields Theatre in London, decided that the New World was ready for professional theatre. A newly formed company of twelve adults and three children, under the management of William's brother, Lewis Hallam, set sail in the *Charming Sally*, replete with scenery, properties, and a repertory of plays to be rehearsed during their forty-two-day voyage. The busy little company arrived in Williamsburg, Virginia, in July, bought and remodeled a warehouse, and opened to the public on September 15. This event marks the first professional British acting company and the first professional scenery to be seen in the colonies.

According to a notice in the *Virginia Gazette* a few days before the arrival of the company, "the Scenes, Cloaths, and Decorations, are entirely new, extremely rich, and finished in the highest taste, being painted by the best Hands in London, are excelled by none in Beauty and Elegance." It is not known whether Hallam's scenery was repainted during the voyage, but it is almost certain that, far from being new, it was part of the bankrupt stock of the old Goodman's Fields Theatre.



Ground Plan of Set Scene.

Typical plan for wing-and-drop settings (from F. Lloyds, *Practical Guide to Scene Painting in Distemper*)

Although Hallam's scenery was new to Williamsburg, the style of staging was familiar to all and was destined to continue through most of the nineteenth century. Indeed, even now, many musicals and operas are staged with modifications of the old wing-and-drop sets of the 1750s.

Wings, Borders, and Drops

The wing was a rectangular frame made of lightweight lumber, usually pine or spruce. In all probability, wing construction followed other building principles of the time, using dowel and glue or mortise and tenon joints. Because of its durability and resiliency, linen canvas was used for covering flats and wings.

Wings were placed at the side of the stage at proper intervals to form masking and entrances. Tracks (grooves) on the floor and overhead provided support, and scene changes were made by simply sliding one wing off stage and revealing another directly behind it.

Painted strips of canvas were used as borders to complete overhead masking. Suspended from pulleys in the ceiling, borders were raised during the scene change, revealing the borders behind them.

Drops, or "cloaths," forming the upstage background were made of canvas on battens and were either rolled or tripped to expose the next scene behind. Where seaming of the canvas was necessary, a lap joint was made and glued horizontally.



Front elevation for the floor plan above

An alternative backwall was a pair of "shutters," built like flats and supported by "grooves" in the same manner as the side wings.

A well-equipped wing-and-drop stage would have five sets: fancy interior, plain interior, garden, woods, and street scene. With a limited amount of money a company could get along with three sets of wings, doubling wood wings for street and garden scenes. On at least one such occasion, however, the Lewis Hallam, Jr., Company was brought to task. The *New York Advertiser* of April 4, 1787, stated that "frequently where the author intended a handsome street or a beautiful landscape, we only see a dirty piece of canvas . . . nor is it uncommon to see the back of the stage represent a street, while the side scenes represent a wood." Eight days later the same paper reported that "the scenery is now got up with great taste..."

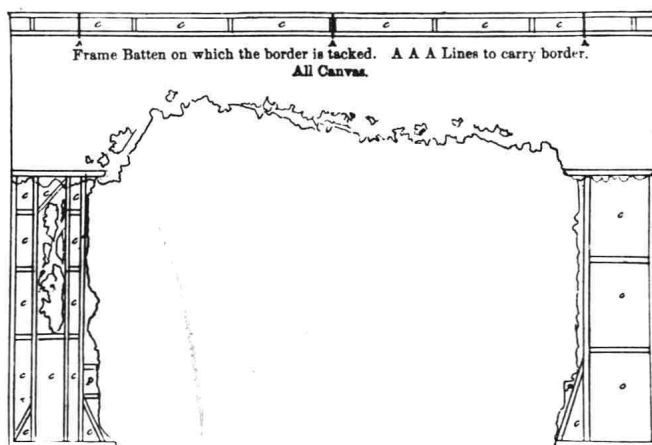
One can assume that the Hallam Company built and painted its own scenery and, undoubtedly, spent a busy week.

The four sets of borders required for the well-equipped stage included ceilings for fancy and plain interiors and leaf borders and sky borders for exterior scenes. With wings and borders forming the frames for drops, and with the above-mentioned combinations, almost any number of drops could be used. It was therefore possible, and probably necessary, to have between a dozen and two dozen backdrops depicting everything from battlefields to waterfalls, from palatial interiors to hovels.

Scene changes were so simple they were made in full view of the audience by stagehands dressed as servants. Furniture, apparently kept to a bare minimum, was also slid on and off stage by "servants."

Three-dimensional Scenery

Although a cutout ship with possibly some third dimension was used in the Charlestowne production of *The Tempest* in 1793, the beginning of constructed, rather than painted, scenery is generally credited to John Burke. In a letter describing his Boston production of *The Battle of Bunker's Hill* in 1796, Burke stated: "The hill is raised gradually by boards extended from the stage to a bench. Three men should walk abreast on it, and the side where the English march up should, for the most part, be turned towards the



Rear elevation of an exterior wing-and-drop, ca. 1883 "the wings as made of light wooden framing, and where it is marked C it is fitted with canvas, and where it is marked P with profile" (from F. Lloyds, *Practical Guide to Scene Painting and Painting in Distemper*).

wings; on our hill, there was room for 18 or 20 men, and they were concealed by a board painted mud colour, and having two cannon painted on it— which Board was three feet and a half high . . . firing commences—they are beaten back—windows on the stage should be opened to let out the smoak. . . . A square piece about nine feet high and five feet wide, having some houses and a meeting house painted on fire with flame and smoak issuing from it . . . the window and doors cut out for transparencies. . . . We had painted Smoak suspended. . . . Small cannon should be fired during the battle, which continued with us for 12 or 15 minutes." ¹

Beginning of Realism

During the eighteenth century American theatrical productions paid little attention to historical accuracies. Costumes for the most part were either contemporary, traditional (such as the long black gown and red wig for Shylock), or improvised from material at hand. Furniture and properties were used as found, crudely built of wood or papier-mâché, or painted on the backdrop. A garden drop or street might serve equally well for plays set in London, Paris, or Venice.

Probably the first effort to follow historical accuracy in this country was made for the 1809 revival of *De Montfort* in New York's Park Theatre, where John Holland painted the necessary Gothic settings for the production. It was Charles Kean, however, who brought the first historically accurate spectacle to New York in 1846. In his presentation of *King John*, with a reported cast of two hundred, all costumes, properties, and scenery were designed according to the best scholarly information of the time. Wings and drops were executed in minute detail, conforming to the architectural styles of the thirteenth century.

Five years before Kean's production of *King John*, Dion Boucicault was experimenting with another attempt at realism: the box, or "sealed," set. Still a novelty in London, the box set, with three walls enclosing the stage as a realistic room, formed a fitting background for Boucicault's *London Assurance* and gave the Park Theatre an unprecedented three-week run. Such a simple inno-

1. William Dunlap, *A History of the American Theatre* (New York: J. & J. Harper, 1932), pp. 161-63.

vation, as it might seem to us now, was the talk of New York in 1841 and set a style of staging that has persisted for well over a century.

The box set was quickly adopted by the larger and more important theatres, but wings and drops continued to be the staging style through the turn of the century on less well equipped stages. In fact, plain and fancy sets and fancy center doors were apparently frequently used during the first quarter of the twentieth century.

Early Spectaculars

Theatre has always thrived on novelty. Guest appearances, entr'actes, star systems, historicals, realistic sets, stage machinery, and extravaganzas are all outgrowths of a desire to build audience interest.

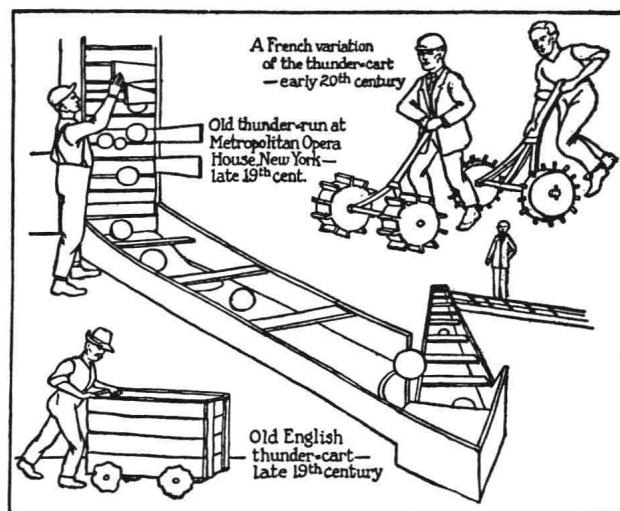
In all probability it was the need for just such a stimulus that prompted the Charlestowne, South Carolina, Company to produce *The Tempest* as a spectacle that showed, according to the *City Gazette* of April 20, 1793, "a troubled horizon and tempestuous sea, where the usurper's vessel is tossed a considerable time in sight." Thunder and lightning, rain and hail accompanied as "the vessel sinks in full view of the audience." The performance concluded with Ariel in a chariot in the clouds.

Such a glowing report from a newspaper stimulates an interest in the mechanics of such a production, but unfortunately our knowledge of the methods used to achieve these effects is pure conjecture. One can assume, however, with reasonable assurance that current British practices were in use in America. The fact that trapdoors have been standard equipment in stages for many centuries suggests that the sinking of a ship could be accomplished by placing a portion of the deck on the trap and fastening a ship cutout painted on canvas to the deck. As the trap is lowered, the cutout merely folds up on the floor. It is not known when the practice of using stagehands under a blue floorcloth to simulate an undulating sea began, but it is not unlikely that this was the method used to heighten the storm effect in *The Tempest*.

The thunder sheet was invented in 1708 by John Dennis, whose possessive nature was responsible for the introduction of the phrase "stealing my thunder" to the English language. It is

possible that a sheet of metal produced the necessary thunder sound effects for *The Tempest*. However, prior to that date and long afterward, thunder effects were usually produced by the thunder-run, a machine with reversing chutes along the side and back walls of the stage through which cannon balls, released from a series of pens commonly known as the "rabbit hutch," were rolled; weighted rumble carts filled with stone or scrap iron and provided with cleated wooden wheels that rumbled across the stage; or cannon balls in wooden drums. These traditional methods of producing storm effects depended greatly upon timber house-construction for resonance.

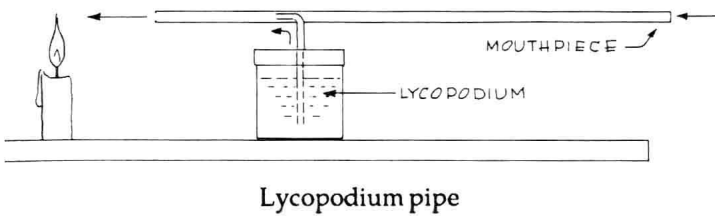
In the years before electricity, the lycopodium pipe was used to produce lightning flashes. The pipe was similar to our simple fixative spray pipe, and when the operator blew into one end, the highly combustible lycopodium powder was sprayed onto the open flame of a candle. At later dates magnesium powder was sometimes substituted for lycopodium, but *The Tempest* would have used the latter since it was readily available in the neighborhood apothecary, where it was needed as a coating for hand-rolled pills and as a dusting powder for skin.



Thunder in old wooden theatres (from Louis Hartmann, *Theatre Lighting*).

Later Spectaculars

Spectaculars reached another high point in the 1830s when New York's Park Theatre and the Bowery were in great competition. While the Park catered to the carriage trade, Bowery managers Hamblin and Hackett deliberately introduced a



program of blood, thunder, and spectacle in an effort to woo the lower classes. Such a production was the 1833 presentation of *Mazeppa*. With an actor strapped to his back, Mazeppa, a wild horse, raced up precipices. Thunder, lightning, a falling tree, a moving panoramic background, and a mechanical bird flown from above to peck at the unfortunate rider contributed to the realistic horror of the scene. In this show the moving panorama was made by painting scenery on a long strip of canvas and rolling it off one roller onto another on the opposite side of the stage. Dim light provided by oil and gas during this period made possible quite realistic effects from rather crude devices.

A New Era

From the beginning of theatre in America through the first half of the nineteenth century, staging customs were basically wing-and-drop style. Stages, too, for the most part followed a given pattern. A large apron extended into the auditorium, the stage was raked (slanted toward the audience), proscenium doors were located on each side, and grooves were permanent fixtures in the wing position.

According to Barnard Hewitt, the opening of Booth's Theatre in 1869 marked the beginning of a new era in the theatre. ² Booth not only did away with conventional raking, grooves, proscenium doors, and apron, but he also built the stagehouse to a seventy-six-foot height so that he could frame his drops tautly and fly them out of sight. Although wings were still used most of the time, they were individually braced and set at irregular intervals in accordance with the dictates of directors and not of stages. Hydraulic-powered traps were used to lower heavy pieces of scenery to the basement, where other scenery could be slid in place and raised to the stage level.

2. Barnard Hewitt, *Theatre U.S.A., 1668 to 1957* (New York: McGraw-Hill Book Co., 1959), p. 217.

Although Booth's Theatre was probably not the first in this country to introduce any of these innovations, it undoubtedly was the first to include them all in a total disregard for traditional staging conventions. In any event the next forty years witnessed prodigious changes in stage mechanization. Cities in Germany, France, England, and America experimented with revolving stages, wagon stages, hydraulic stages, and combinations of these, plus new grid systems. Power to operate this array of inventions ranged from hand, to counterweight, to hydraulic devices, and finally to electricity. The stage had become fully mechanized.

The Double Stage

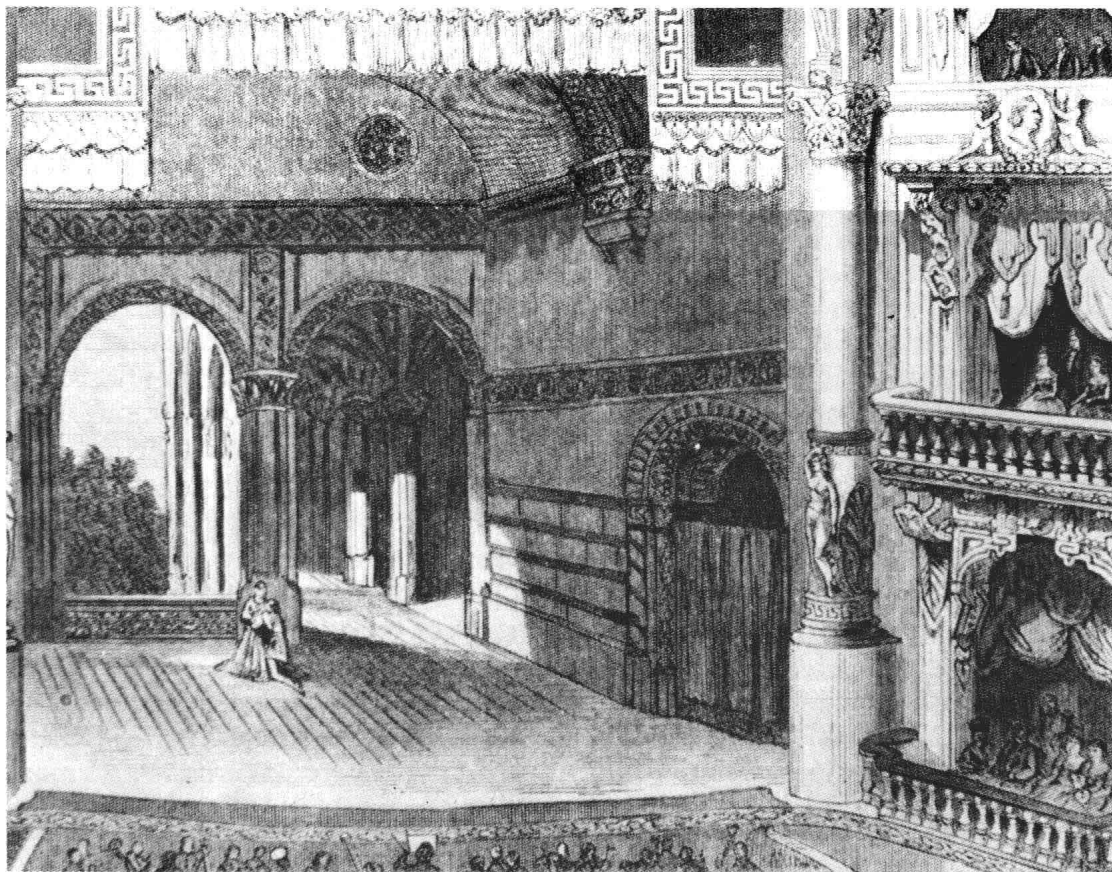
One of the most fascinating of the "gadget stages" of the last quarter of the nineteenth century was that of Steele MacKaye. As a solution to the ever-increasing problem of shifting heavy realistic scenery, MacKaye designed a double stage for New York's Madison Square Theatre, which was opened in 1884. The stagehouse consisted of an elevator shaft 114' high, 22' wide, and 31' deep in which two stages 25' apart were suspended by cables at the four corners. The forty-eight ton stages were counterweighted, and a hoisting cable running to a drum operated by four men provided the necessary 25' 2" movement. The time allotted for changing from one stage to the other was forty-five seconds.

Each of these two stages contained its own set of traps, and 6' of space was provided between the two stages, allowing room for machinery necessary to operate the traps on the upper stage. A double set of gaslights provided illumination, and rubber-hose connections allowed for the travel.

In addition to his novel theatre, Steele MacKaye is credited with many other theatrical devices, including rising theatre seats, sliding stages, adjustable proscenium, flameproofing for scenery, and various complicated lighting effects.

Scenery Construction

Whether the scene technician has been too busy to write, totally uninterested, or incapable is a moot question. The fact remains that there is practically no record of how American scenery was built prior to the twentieth century. Indeed, one of the first books to deal specifically with



Interior of Booth's Theatre, New York, on its opening, February 3, 1869, of *Romeo and Juliet*, Act III, Scene 5, showing the loggia leading to Juliet's chamber (engraving from Frank Leslie's *Illustrated Newspaper*, February 27, 1869)

scenic problems was written by Arthur Edwin Krows in 1916. In his book, *Play Production in America*, Krows devotes several chapters to scenery, lighting, and painting and would appear to be relating old and established methods of the period. This could reasonably take us back to such standardization of construction as existed at the turn of the century and, perhaps, long before that. Flats, even as they are today, were made of seasoned white pine, with mortise and tenon joints "clout nailed together with corner blocks and 'keystones.'" ³ Plywood was a Russian invention of the eighties, but it was not used in connection with scenery in this country until well after the turn of the century. According to records as far back as the eighties, the use of profile board probably dates back to the eighteenth century. Profile board used for corner blocks and cutouts was made of 1/4" x 12" white pine with canvas glued

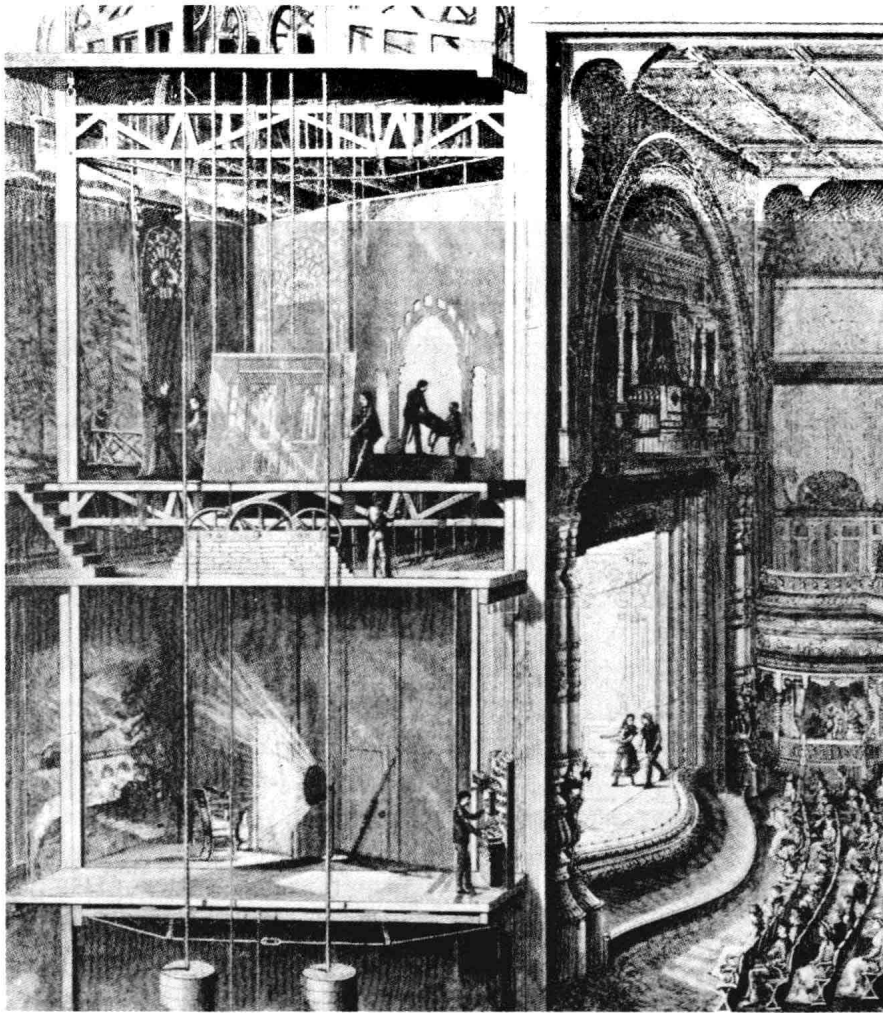
3. Arthur Edwin Krows, *Play Production in America* (New York: Henry Holt & Co., 1916), p. 141.

on both sides. In Krows's words: "Each [flat] usually has two stiles, or vertical side pieces; two toggle-irons, or pairs of rods strained together by reverse threads with nuts; two braces, and top and bottom rails. Doors and arches have flat, iron sills to keep them firmly in shape. All frames are provided with cleats, lash-lines, and so forth. . . . Pieces in the round, like tree trunks, are usually made of hollow cylinders of light lath, or frames covered with wire netting over which canvas is stretched and twisted."⁴ With the exception of "toggle-irons" there would appear to be very little change in construction methods for the next fifty years.

Exactly when hinges were first used with scenery is not known, but in 1916 Krows wrote of two-folds, threefolds, and loose-pin hinges for temporary fastening, in a most matter-of-fact manner.

Since the major portion of the life of any set of

4. Ibid.



Steele MacKaye's double stage in the Madison Square Theatre, New York (engraving from *Scientific American*, April 5, 1884)

this period was spent on the road, "the American Carpenter makes all his pieces of a size that will go through a [box] car door that measures five feet nine inches."⁵ This standard flat width persisted in professional theatre for many years; however, since road show scenery is almost always shipped by truck at the present time, this restriction is no longer valid.

Stock Scenery

By the beginning of the twentieth century virtually every town with a population over one thousand had its opera house or equivalent, and there were over five hundred separate companies touring the United States. The vast majority of these theatres maintained a supply of reserve

scenery known as "stock sets," which included wings, borders, and drops for the familiar street scene, a woods scene, plain and fancy interiors, and a garden scene. Plays could thus be mounted locally, or if scenery for a road show were damaged or delayed, the play could go on in stock settings.

An ingenious use of stock scenery was found by some road companies during the second decade of the twentieth century through the use of what was known as "aniline dye stuff." Drops painted with aniline dyes were flexible enough to be folded rather than rolled, and in this way an entire set could be carried in a trunk and simply stretched and tacked over existing stock sets in any theatre.

It is interesting to note that sets constructed ac-

5. *Ibid.*, p. 142.

cording to these same principles were used in the Italian theatre shortly after World War II as an economy measure. Subsequently, similar scenery was shipped to the Metropolitan, Chicago, and Dallas opera companies, where it was heralded as the modern Italian concept of stage design. The Peter Wolf Associates of Dallas, Texas, was soon making "scenery by the bag," shipped anywhere in the country.

Center Door Fancy

In addition to wings-and-drops, three-dimensional set pieces found their way into the permanent equipment of many theatres. Probably an outgrowth of the realistic box set, these pieces were practical doors and windows that could stand alone, braced by the stage brace (patented in 1888), and could therefore be used with either drops or flats. One of the most persistent of these pieces was known as the "center door fancy," given the dubious honor of being the only set piece to be "suspended in the flies when not in use." The importance ascribed to this piece inspired a poem by Howard Lindsay, then stage manager for Margaret Anglin, which begins:

"O Center-Door-Fancy that hangs in the flies
Do you feel that you have been given a raise?
As you room with the borders—the kitchens
and skies
Do you join them in play—or only in plays?"⁶

Other practical doors and windows, although of lesser importance than the center door fancy, were equally rigid in construction and were braced by jacks or stage braces.

Floors

Along with the growing popularity of the realistic box set came the more extensive use of the groundcloth, or floorcloth. A large piece of canvas painted to represent a floor appropriate to a play, the groundcloth was laid over the entire visible acting area. Many such cloths were painted in great detail to represent parquet floors, lawns, or pavement. In plays calling for several different types of floors, the various cloths were laid in sequence and peeled off during the scene change

6. Ibid., pp. 121-22.

to reveal the next cloth.

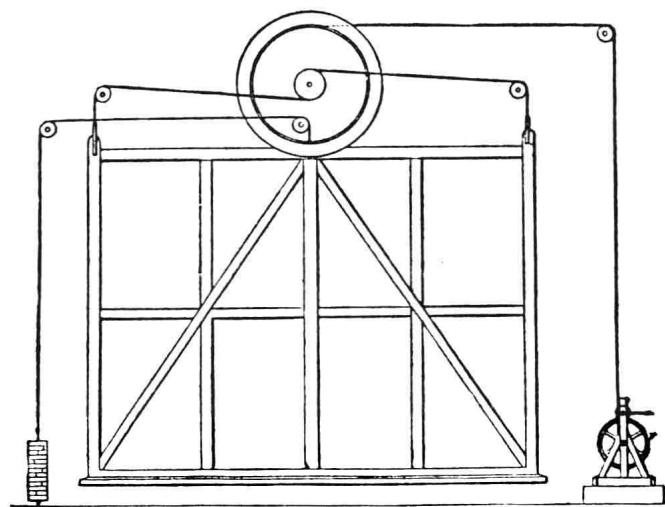
The floor for Margaret Anglin's 1914 production of *Lady Windermere's Fan* was made of strips of shellacked linoleum glued on a canvas back to simulate a hardwood floor. Since this type of floor could be rolled for easy transportation, it became popular with vaudeville of the era, especially with clog dancers.

The Run

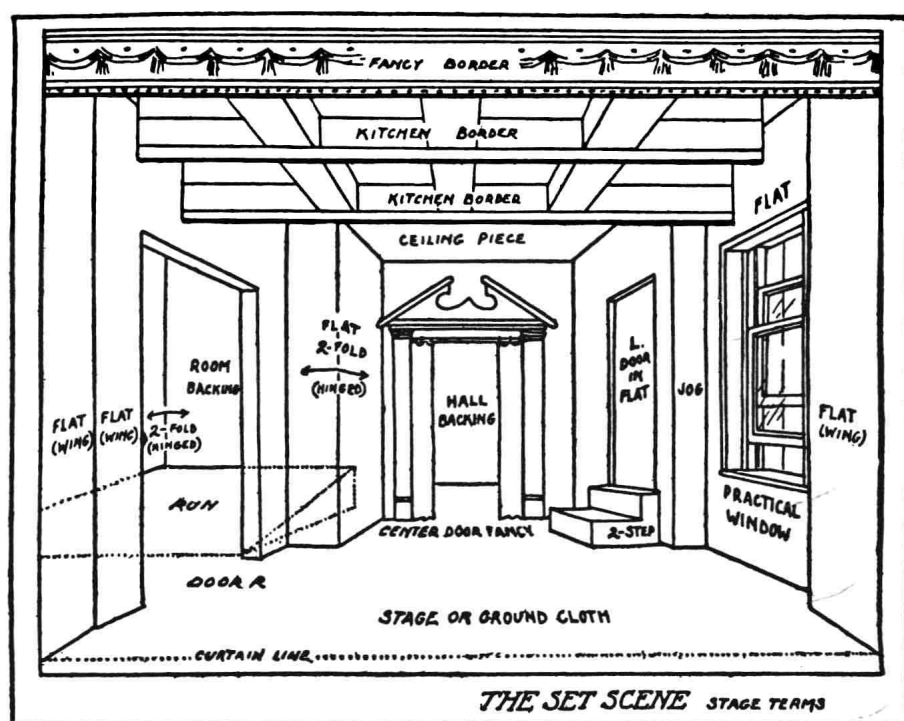
As wings and drops gradually gave way to box sets and realistic scenery, it became commonplace to force perspective, particularly with backings, to give the illusion of greater depth. Practical ramps, known as "runs," were used in conjunction with painted perspective to further this illusion behind doors, arches, and windows. Many exterior scenes used runs as a road leading to the wings where the actor dropped character long enough to climb down a ladder to the stage level.

Scene Painting

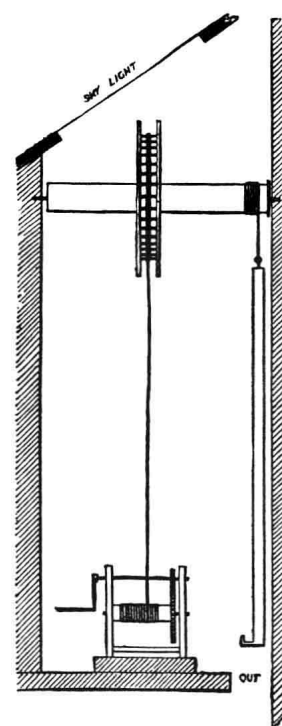
A Practical Guide to Scene Painting and Painting in Distemper by F. Lloyds, printed ca. 1883, was probably the first comprehensive treatment of the subject to be printed in this country. In great detail Lloyds describes paint frames, brushes, paints, binders, drops, wings, profiles, architectural drawings, and painting techniques. Among the colors found on the scene painter's palette of that era were the familiar whiting, lemon chrome, orange chrome, yellow ochre, raw and burnt si-



Front elevation of a paint frame, ca. 1883 (from F. Lloyds, *Practical Guide to Scene Painting and Painting in Distemper*)



Box set with ceiling borders, run, and center-door fancy, drawn ca. 1916 (from Arthur Edwin Krows, *Play Production in America*)

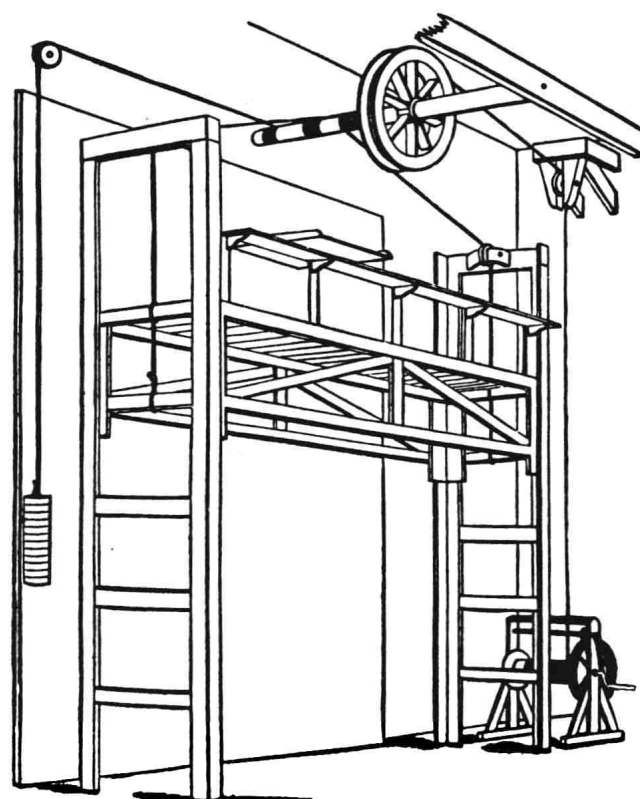


Cross section of a paint frame (from F. Lloyds, *Practical Guide to Scene Painting and Painting in Distemper*)

enna, raw and burnt umber, vermillion, venetian red, ultramarine blue, dark and light green lake, prussian blue, and vandyke brown. Although some of these colors were available in powder form, the majority were purchased in lumps and had to be crushed or ground in water with a palette knife.

The most common binder used for these distemper colors was known as "size" and was used in a one-to-four ratio with water. Where size was not available, a good grade of carpenter's glue (flake or ground amber) was substituted, or, lacking this, Lloyds suggests cuttings of leather, parchment, or any kind of skin, simmered in water until "converted into a strong jelly." The stench of size decomposition was as familiar to Lloyds as it is to us today: "A little carbolic acid, however, mixed with the size will prevent its decomposition."⁷

During the nineteenth century it was common practice to place a paint frame on the backwall of the stage and hang a scaffold known as the "flying bridge" in front of the frame. Painters on the



The flying bridge, drawn ca. 1883 (from F. Lloyds, *Practical Guide to Scene Painting and Painting in Distemper*)

7. F. Lloyds, *Practical Guide to Scene Painting and Painting in Distemper* (New York: Excelsior Publishing House, 1883?), p. 20.

bridge would adjust their height while painting drops by raising or lowering the bridge. More stringent fire laws introduced in the eighties curbed the use of paint frames on city stages because of the hazard from the stoves necessary to heat the paint binder. However, in places where fire laws were not strictly enforced, "flying bridges" continued in use through the first quarter of the twentieth century, but the space was gradually taken over by lighting equipment used to light the cyclorama.

As paint frames moved out of theatres, studios were acquired for building and painting scenery. English and American methods of painting at that time employed either a stationary frame with a movable bridge or the less-common movable frame that dropped through a slot in the floor. During this same period the French and Italians used the technique, currently employed for most painting in New York, of stretching drops on the floor and painting with long-handled brushes.

In 1915 business was so brisk in New York that the Lee Lash Studio employed as many as twenty

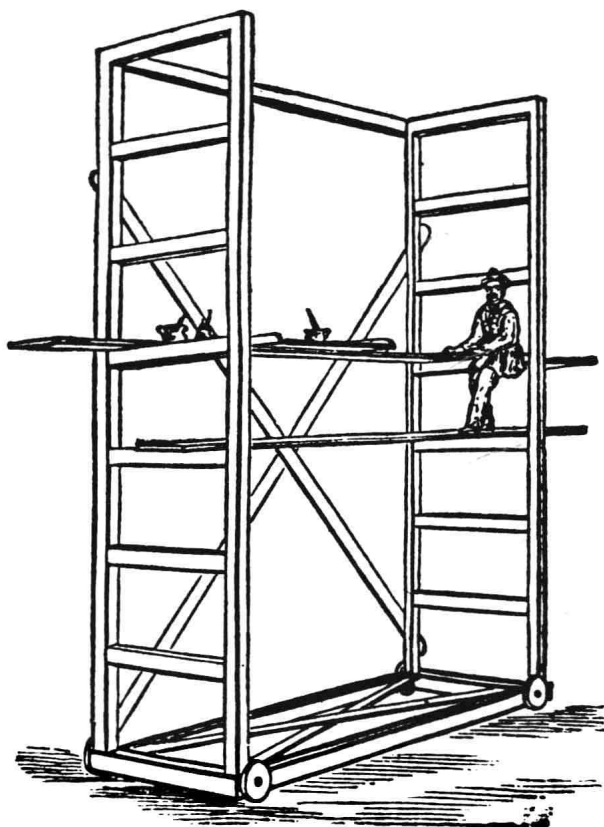
painters, who often worked a double shift. The peak season for building and painting ran from May through January.

Help for the Amateur

Amateur theatrical groups choosing to produce plays from the Samuel French acting editions of the second half of the nineteenth century must have taken considerable comfort in the advertisement appearing on the inside covers of Mr. French's scripts. The front cover offered colored paper scenery to fit all demands while the back cover promised a most effective proscenium, complete with a picture of Shakespeare in the center. The reproduction appearing here was taken from French's acting edition of *Camille*, ca. 1856, but an identical advertisement appeared in many of French's Standard Drama series during this era.

Decentralization

The advent of motion pictures contributed to the demise of the majority of road shows and curtailed the activities of many scene studios. With fewer shows on the road, however, amateur theatrical groups and community theatres began to develop throughout the country. Inexperienced help and low budgets were probably responsible for some of the worst scenery in our brief theatrical history. In an effort to inform amateurs of proper



Flying horses, F. Lloyds's suggested alternative to the flying bridge (*Practical Guide to Scene Painting and Painting in Distemper*)

FRENCH'S DESCRIPTIVE LIST.

SCENERY.

With a view to obviate the great difficulty experienced by Amateurs (particularly in country houses) in obtaining Scenery, &c., to fix in a Drawing Room, and then only by considerable outlay for hire and great damage caused to walls, we have decided to keep a series of Scenes, &c., colored on strong paper, which can be joined together or pasted on canvas or wood, according to requirement. Full directions, with diagrams showing exact size of Back Scenes, Borders, and Wings, can be had free on application. The following four scenes consist each of thirty sheets of paper.

GARDEN.

The above is an illustration of this scene. It is kept in two sizes. The size of the back scene of the smaller one is 10 feet long and 6½ feet high, and extends, with the wings and border, to 15 feet long and 8 feet high. The back scene of the large one is 13 feet long and 9 feet high, and extends, with the wings and border, to 20 feet long and 11½ feet high. It is not necessary to have the scene the height of the room, as blue paper to represent sky is usually hung at the top. Small size, with Wings and Border complete, \$7.50; large size, do., \$10.00.

WOOD.

This is similar in style to the above, only a wood scene is introduced in the centre. It is kept in two sizes, as the previous scene, and blue paper can be introduced as before indicated. Small size, with Wings and Borders complete, \$7.50; large size, do., \$10.00.

FOLIAGE.—This is a sheet of paper on which foliage is drawn, which can be repeated and cut in any shape required. Small size, 30 in. by 20 in., 25 cts. per sheet; large size, 40 in. by 30 in., 35 cts. per sheet.

TREE TRUNK.—This is to be used with the foliage sheets and placed at the bottom of the scene.—Price and size same as foliage.

DRAWING ROOM.

This scene is only kept in the large size. The back scene is 13 feet long and 9 feet high, and extends, with the wings and borders, to 21 feet long and 11½ feet high. In the centre is a French window, leading down to the ground, which could be made practicable if required. On the left wing is a fireplace with mirror above, and on the right wing is an oil painting. The whole scene is tastefully ornamented and beautifully colored, forming a most elegant picture. Should a box scene be required extra wings can be had, consisting of doors each side, which could be made practicable. Price, with Border and one set of Wings, \$10.00; with Border and two sets of Wings, to form box scene, \$12.50.

COTTAGE INTERIOR.

This is also kept in the large size only. In the centre is a door leading outside. On the left centre is a rustic fireplace, and the right centre is a window. On the wings are painted shelves, &c., to complete the scene. A box scene can be made by purchasing extra wings, as before described, and forming doors on each side. Price, with Border and one set of Wings, \$10.00; with Border and two sets of Wings, to form box scene, \$12.50.

The above Scenes, mounted, can be seen at 28 West 23d St., New York. Full directions accompany each Scene.

FRENCH'S DESCRIPTIVE LIST.

**PROSCENIUM AND DROP SCENE.**

PROSCENIUM.—A most effective Proscenium can be formed by utilizing the paper made for this purpose. Three pieces of wood are merely required, shaped according to this design, and covered with the paper; the proscenium having the appearance of light blue puffed satin panels, in gold frames, with Shakespeare medallion in the centre.

Puffed satin paper, Light Blue, size 20 inches by 70 inches, per sheet, 25 cts.

Imitation Gold Bordering, per sheet, 25c., making 14 feet.

Shakespearean Medallion, 18 inches in diameter, 50 cts.

DROP SCENE.—The picture shown above is an illustration of this scene. It comprises four sheets of paper which are to be pasted in the centre of any sized canvas that may be requisite for the drop curtain. Size 6½ feet by 5 feet. Price \$2.50.

DOORS.—These comprise three sheets of paper each, and can be had either for drawing-room or cottage purposes. Size, 7 feet by 3 feet. Price, complete, \$1.25 each.

WINDOW.—This is a parlor window formed with two sheets of paper, and could be made practicable to slide up and down. The introduction of curtains each side would make it very effective. Size, 3 feet by 4½ feet. Price, \$1.00, complete.

FRENCH WINDOW.—Consisting of four sheets of paper, representing a window containing four large ornamental frosted glass panes with colored glass around. Size 6½ feet high by 5 feet. Price \$1.50.

FIREPLACE.—This is also made with two sheets of paper. The fire is lighted, but should this not be required a fire-paper can be hung over it. It will be found most useful in many farces wherein a character has to climb up a chimney, and many plays where a fireplace is indispensable. By purchasing a door, window, and fireplace an ordinary room scene could easily be constructed with the addition of some wall-paper. Size, 3 feet by 4½ feet. Price, complete, \$1.25.

construction methods, Dariel Fitzkee of the American Studio wrote a book called *Professional Scenery Construction*. This book represents a conscientious effort on the part of the author to divulge, as he explains in his preface, "for the first time, the real, true, trade-secrets of the professional scenery builder."⁸

In 1932 Cleon Throckmorton approached the same problem from a different angle. Throckmorton conceived the idea of prefabricating scenery and shipping it by the piece from his scene studio to the buyers. His catalogue included everything needed for the stage, from a variety of painted and unpainted flats to platforms, stairs, doors, win-

8. Dariel Fitzkee, *Professional Scenery Construction*, ed. Ellen M. Gall (San Francisco: Banner Play Bureau, 1930?), p. 8.

dows, fireplaces, lights, and switchboards. Considerable ingenuity was shown in creating modules permitting the interchange of various scenic effects.

With the introduction of drama courses in colleges and universities in the late twenties and thirties came a certain standardization of construction methods, in many cases differing somewhat from scenery bearing the union label, but generally following sound structural procedures. Evidence of some training and understanding is found in most community and amateur theatres of today, even though the results may not be of the highest standards.

What has happened to the many studios in New York that were so busy during the first quarter of

the century? They have dwindled to a few, the largest of which is the Nolan Scene Studio, claiming 80 percent of the Broadway business. Television studios maintain their own shops, the movie industry builds its own scenery, colleges and universities provide shops for their needs, and even the community theatres have shop spaces, or the stage, on which they can build and paint their scenery. The New York theatre remains the parent theatre, but the secrets of the trade are indeed far-flung.

LIGHTING

Early Lighting

Candles were the only means of artificial illumination available to our first American theatres. Before the invention of the mold in 1708, candles were made by repeatedly dipping a stringlike wick into melted tallow until a sizable diameter was built up. Considering the number of candles necessary to light a theatre, one can imagine the enthusiasm with which a theatre manager would accept the simple candle mold.

A reasonably well equipped theatre of the last quarter of the eighteenth century might boast two chandeliers in the auditorium and one on stage. Additional candles lined the front of the stage in the footlight position, and still more candles, mounted in brackets, were hung on the upstage side of the wings. It was the custom of the times for theatres to have a swab and tub of water on each side of the stage, and all members of the cast and crew were alerted to possible duty. All candles were lighted before the play began and were tended during the evening by the "snuff boy," who often walked on stage during a scene to trim a smoking wick. Other snuff-boy duties sometimes included "dimming" the lights by snuffing some of the candles for darker scenes. Since the brightest part of the stage was the center, where all rays converged, this location, known as the "focus," became the most desirable acting area.

Spermaceti and Tallow

From the meticulous records of David Douglass, we learn something of the cost of lighting a mid-eighteenth-century theatre. During a benefit performance on a November night in 1761, in the Chapple Street Theatre, New York, Douglass re-

corded the use of 26 pounds of spermaceti and 14 pounds of tallow at an equivalent cost of about \$13.00, approximately 4 percent of the total gross receipts of about \$333.⁹

Chandeliers of this period caused considerable grumbling among the pit patrons, who were constantly showered by candle drippings from above. In an effort to placate the patrons, a few managers introduced oil lamps before the turn of the century, but this only led to further complaints about the unpleasant odor of burning oil. Some astute managers partially solved both problems, the dripping of candles and the stench of oil, by moving chandeliers to the sides of the auditorium, introducing ventilators in the ceiling, and in some cases adding Venetian blinds in the boxes.

The end of the eighteenth century saw the development of the Argand burner for oil, which used a tube-shaped wick and a glass chimney and produced a steadier, brighter light. Although green chimneys were alternated with white in the Haymarket Theatre in London prior to this time, one of the first mentions of colored light on the American stage appeared in the *Royal Gazette* of June 10, 1778, in reference to a New York production celebrating the King's birthday: "Lamps 'of every color' and a band of music 'cheered' the company."

The Age of Gas

In 1816 the Chestnut Street Theatre in Philadelphia became the first in the United States to use gas as a means of illumination. The added "brilliancy and neatness" was advertised as certain to please the audience.

Apparently the expense of installing gas, a process involving the distillation of wood, was a deterrent to other theatres, for it was not until 1825 that the Chatham Theatre introduced gaslight to New York. One year after that, however, in 1826, both the Bowery and the Lafayette Theatres converted to gas, and in 1827 the Lafayette introduced the gas border light, thus temporarily freeing the wings from the ladders and trees formerly used for hanging lights.

Improvement in gaslights continued until the turn of the century. In border lights and footlights, jets were placed closer together so that they could be lighted at one end and the flame would travel to

9. William Dunlap, *A History of the American Theatre*, p. 46.