The Origin of the Odd Figures on Playing Cards.

THEY REPRESENTED REAL PERSONAGES

History is Written in the Varying Costumes.

THE EASTERN ORIGIN

Written for The Evening Star.



PITCHE ASSISTANT secretary of the Smithsonian Institution, Prof. G. Brown Goode, is preparing a monograph on play-ing cards and their history, which will include a description of many interesting packs and parts of packs preserved from ancient times, and now kept in the Na-

tional Museum, including specimens with designs executed on gold and silver, tortoise shell, ivory, motherof-pearl, parchment, leather, thin tablets of wood, small tiles and even large leaves. The costumes of the pictured playing

cards of the every-day pack are a fascinating study in themselves. They are so quaint and have become so highly conventionalized that one would hardly suppose them to have been copied originally from real people. Yet such is the fact. The king, for example, is Henry VIII, as is proved by existing portraits of that monarch, though on the card only a few suggestions remain of the fashion and ermine trimming of his garments, which were once covered with correct heraldic devices.

In French and German packs the kings generally bear scepters or globes as emblems of authority, but the monarchs of



Early French Playing Cards, Representing Justice. card-land in England and America are war-

riors, those of hearts, clubs and diamonds holding double-edged-swords. The king of hearts is the most warlike in appearance, with his sword uplifted as if to strike a blow. The king of spades alone is armed with a battle ax, though why nobody

When Henry III ruled in France the cards became the reflectors of the extravagant fashions of the day. The card kings wore pointed beards, like the effeminate monarch, with collars stiffly starched, hats with long plumes, breeches puffed out at the hips, and, to make them look as womanly as possible, doublets pinched in at the waist. No sooner had Henry IV mounted the throne than the pasteboard kings altered their costumes. At pastesoard kings aftered their costumes. At one time cards were influenced by the Ital-ian fashlons and customs imported by Marie de Medici. During the French revo-lution not only was the royal family deposed and beheaded, but the same fate fol-lowed their majesties of spades, clubs, dia-monds and hearts. Their places were supplied by the figures of sages and philosopl ers. But the kings and queens of the pack returned when the monarchy was restored in 1813. Since then they have not been disturbed, and they still reign in republican France as they do in the United States.

The Queen and Her Costume. The queen of the cards is Elizabeth of York, wife of Henry VII, and mother of Henry VIII. Various reasons may be imagined for her relection and elevation to the paper throne. Her marriage joined the houses of York and Lancaster, rival claimants for the English throne, and termin-ated forever the wars of the roses. In her portrait is seen, at a glance, the source of the cardmaker's inspiration for the card queen. In the odd-looking head-dresses of the four royal dames may easily be traced the resemblance to the straight lappets, richly embroidered with jewels, forming a cap, and hanging on either side of the face



Comic "Tarot," Representing Two As tronomers.

which make part of the dress in the pictur of Elizabeth. In it her hair, which was of pale golden hue, is banded plainly on her orehead, and she has long, flowing, ermineedged sleeves. The color of the hair is re tained to this day. It will be observed that the queen holds the rose of York in her hand, this emblem having always been copied and retained.

These matters

copied and retained.

These matters of costume are described in detail in a work by Mrs. J. K. Van Rensselaer, entitled "The Devil's Picture Books," from which the writer has obtained a great part of his information. The authoress, nerself, possesses a fine collection of playing cards from all over the world. The greatest private collection of playing cards in existence is the property of an English

woman, Lady Charlotte Schreiber, who is now publishing a series of follo volumes, in which the most notable specimens are reproduced. The history of England may be read on the cards of her first volume, which presents a series of pictures illustrating the manners and customs of successive epochs. The cards of Germany, France and Spain will appear in subsequent folios.

Origin of the Knaves. Mrs. Van Rensselaer refers to the fact that the grotesque dress of the knaves of the English packs has remained almost un- THE FRENCH IDEA OF BALLET changed during several centuries. It is copied from the ordinary costume of the lower classes in the days of Chaucer. American cardmakers have cut the knaves in two, giving to each one two heads and leaving off the legs. The dress, as shown in the English cards, appears to consist of



Chinese Playing Cards.

a short jacket with flowing sleeves, the body being crossed by a sash. The knave of hearts has a battle-ax, and in his other of hearts has a battle-ax, and in his other hand a laurel leaf. The knave of diamonds holds a pike with a hook below the point. The queer-looking staff of the knave of clubs is supposed to have been an arrow. The peculiar attribute of the knave of spades is a twisted ribbon, which may have been a fool's staff once, with gay ribbons twined around it. The knaves of hearts and spades are in profile while the others and spades are in profile, while the others show their full faces. Why this is so no-body knows; they have had these positions as far back as the middle of the fifteenth

The knave is frequently called the Jack from his buffoon's dress, a slang name for jester being Jack. In German packs the knaves are represented as workingmen or peasants. The word for peasant being Bauer, hence the bowers right and left of euchre. The English term Jack-a-napes is probably derived from Jack-a-Naipes, or Jack-of-the-cards, Naipes being the Spanish name for the pack.

Cards in Early Days. Playing cards were brought to Europe from the east about the time of the crusade, very likely by home-returning warriors. The gypsies, who at that period began to wander over Europe, are said to have introduced them, using them as they do now for telling fortunes. The first packs contained seventy-eight cards, inpacks contained seventy-eight cards, in-cluding four suits of numbered cards and twenty-two emblematic picture cards, which served as trumps. The numbered cards were marked with swords, cups, sticks and money. Each of these suits con-sists of fourteen cards, four of which were king, queen, knight and knave. The em-blem cards had such pictures on them as an emperor, Cupid, a charlot, a hermit, the gallows, death, the pope, fortune, the sun and the moon.

These early packs were called tarots or tarocchi. They differed a good deal in various localities. Packs closely resem-bling them are found today in parts of much frequented by travelers. In cards of this kind the emblem of death is numbered 13. The notion of bad luck attached to that number is of oriental origin. A tradition relates that a Venetian—perhaps Marco Polo or his father, Niccolo—first brought cards from China to his native city, which was the first place in Europe where they

were known. In China playing cards are called "paper tickets." They used to be called "bone tickets," from the material formerly employed. Several kinds of cards are used ployed. Several kinds of cards are used in that country. One pack has thirty-two covered with small circular dots in red and black, with court cards of one man and one woman. Chinese cards are printed in black usually, on thin cardboard, one inch broad by three and a half inches long. In some packs the cards have animals, such as horses or deer, printed on them. Whist is of Chinese origin, and other European games are more than suspected of being derived from the same source.

The playing cards of Corea are strips of thick unpainted paper half an inch wide and six to eight inches long. The cards of India proper are circular. Persian cards

are beautifully painted and lacquered. The quaintest cards are those of Japan. They differ entirely from any others in the world, the symbols on them having been invented on the islands. They are of the same shape as our cards, of pasteboard, with black backs, but only about two inches long. The designs are stencilled on them, usually representing the months of the year by flowers and other emblems. There are twelve suits of four cards each, with one plain white card for a joker. The Japanese children play with cards that have songs and proverbs on them.

The modern cards are copies of the French packs of the fifteenth century, with modifications. But in Germany the old-fashioned playing cards of that country are still manufacutred, with suits of bells, hearts, leaves and acorns. Even these, however, have been so far changed that the hearts are surrounded by champagne bottles, the acorns have a loving cup, the bells are accompanied by a punch bowl and with the leaves are hour glasses and goblets as parts of the designs. There are no queens, the places of these royal ladies being taken by the knights on horseback in beautiful uniforms. A German friar, Thomas Murer, first conceived the notion of adapting cards to the instruction of children. This idea has been developed until now it is possible to study history, geography and many sciences with playing cards. Bables in the nursery learn to spell and to read from their games.

and to read from their games. Hungary's Thousandth Year.

From the London Daily News. The Hungarians are making preparations on a grand scale for a millennial exhibition, and the government addressed a prayer to the emperor that he might lend them all the historic relics in his possession which have any connection with Hungarian history. The emperor, our Vienna correspondent says, granted the request, and a number of Hungarian historians and antiquarians have come to Vienna to study the imperial collections and make a list of the ob-

They have selected a great number, which represent a value of 2,000,000 florins-if the value of unique historical relics can be expressed in figures. Among these objets are copies of the portraits in relief of King Mathias, Corvinus, and Queen Beatrix, a bronze bust of Mary, Queen of Hungary; bronze reliefs of Adrien Fries, illustrating the Hungarian wars; the remnants of the crown of King Andreas and the imperial globe, dating from the fourteenth certains. globe, dating from the fourteenth century; double cross that belonged to Lewis the Great, with relies of Christ's cross; a map of Hungary engraved in a metal plate, a nautilus-shaped cup, with the arms of the

It is easy to imagine what efforts will be made in Hungary to prevent these objects from returning to Vienna when once they have been in the Hungarian capital; and if they are left there, surely Prague would ask for all that referred to Bohemia in imperial collections, and Cracow for all that referred to Poland.

Winter Exile in the South. From the Academy.

O alien flowers! unseasonable blooms, That in this new translucent temperate air Hide the sad truth, like garlands hung tomis: tomis!
Winter within is winter everywhere; And nothing me your heartless splendors stead.
Your aloe's scarlet, your magnolia's snow;
That, strange to that far clime where I was bred,
Speek not of home and friends and long ago.
—GEORGE DOUG! ASS.

THE PARIS BALLET

The Effect of the Conventional Teaching in Grand Opera.

VIENNA'S SUPERIORITY

orrespondence of The Evening Star. PARIS, September 19, 1894.

NE NATURALLY imagines Paris to be the center of the world for ballet. The Parisians themselves think so. Yet I confess that on the eve of the commencement of the Paris autumn season in amusements m y thoughts go back regretfully to the grand opera of Vien-

na, and that what I ost look forward to in Paris for the coming winter is the advent to the New Olympla of a fine ballet troupe from London. Shall I ever forget my first impressions

of the ballet at Vienna? I had come fresh from the anatomical displays of halftrained and completely willful pretty girls in the scratch companies of our own dear land, as unruly and as fleshly as the helfers in the meadows, whom no ballet master could drill into shape, without a spark of sentiment or understanding or imagination; fresh from the comic opera and extravaganza choruses, all swaying rhythmically, idiotically, in three long rows to an interpolated waltz song, executed by a prima donna by the footlights. It was a change to sit in the Vienna Opera House of a serious ballet night. It was an education to watch the unfolding scenes of the "Tanzmarchen."

sive of the introduction, on Mount Parnassus, where pretty Marie Kohler tripped alone upon her toes, then taught an amiable but clumsy goat-legged Pan to dance. He played his pipes while going through his steps. It was the birth of dancing. Scene after scene succeeded, religious dances by the holy Nile and on the heights of Gibea, the feast of Mars in Rome, with nothing lacking, for it is the Story of the Dance, until its modern apotheosis in the Hof-Operntheater-very naturally-with all the pretty modern ballerinas of Vienna going up to glory in a blaze of gold and

This one piece lasted three hours, exclu-

Throughout the piece an extra human interest was kept up in the sentimental history of a nymph. On Parnassus she was given her choice, either as a reward or punishment; the Gentus of Time was called upon to pass her through the future; and she chose to know the future of the dance. In every scene there was this sweet girl changed—by the altar of the dog-faced Annubis, in the holy mysteries of David's dancing worship, in the oak forests of Britain and of France, where sliver-bearded Druids worked themselves to fury. There was one scene by a castle of the middle ages, where some vokels came to dance beneath an elm some yokels came to dance beneath an elm. Attracted by the sound of flutes, two ras-cally young pages from the castle slip upon the scene to lead away the dazzled country beauties from their hayseed lovers. Again it was a dance school in the middle of the present century, where opportunity was are scarcely known now-the courant, the payane, the Sarabande, the minuet and the

gavotte. In another of their classic pieces "Wiener-waltzer"—it was the history of the Vienna waltz, from its conception in the brain of an old dancing master a century ago down to the dainty fancies of the modern ballerinas, shown to him, by es-pecial favor, in a prophetic dream. He had fallen asleep after the chagrin of fruitless lessons in graceful steps, which he had been giving to a party of pretentious country gentlefolks. The room begins to darken, and a great mirror seems to change into a door, as films of gauze rise one by one. Out step a dozen delicate and pretty dancing girls in modern ballet costume. They nod knowingly to each other as they tiptoe about the somber little room, holding their fingers to their lips for slience. Then one sits at the rickety, tinkling, little spinet a discreet and gently modulated accom-paniment to the noiseless steps of the kindhearted dancing girls of 1893-who are dream shadows, not of the past, but of the

Now I respectfully submit that this is different from the skips and turns of boldeyed Frnch girls at-well, say the Paris opera, if you ever get a chance to see them-for these dancing ladies seldom condescend to dance; the bold-eyed girls who leave you no illusion, their armpits blackened with burnt cork, even when they are blondes; their mouths obscenely painted out of shape, dancing of love and only love and always love. You will not see the "Pup-peafee" in Paris, the children's story of the fairy doll who animates the dolls at mid-night in the doll fair. The French would laugh at its simplicity and childishness. Yet when you have a set of dancers who can act, and when you have a German poet to conceive the plot—but these you have not got in Paris.

The Paris opera scarcely gives ten ballet nights throughout the season. There are dance interludes in operas, but even these are cut down or cut out outrageously. In Thais the composer, Massenet, placed a Thats the composer, Massenet, placed a great deal of very pretty ballet music. As originally produced there was a long and pleasing ballet in the second act, with demons and good angels and trials and enchantments, in the good old style. Scarcely five nights passed when it was all cut out. Perhaps Miss Sanderson, who is extremely influential, thought that the public ought to be content with what she showed so to be content with what she showed so-generously. Perhaps the dancing girls of the grand opera—who all hold government positions—tired of dancing. Perhaps the Paris public—that is to say, the public of

the opera—does not care for ballet.

This latter has been often given as the explanation of the actual decline of serious ballet in the gay French capital, where all things seem to be upon a reckless gallop straight to a vulgar anarchy, where what is gross and mean and low will rule. The great restaurants have disappeared before the triumphant advance of the beer and sauerkraut brasserie and taverne; the great sauerkraut brasserie and taverne; the great cafes have disappeared, because the public prefers to sit between, before and after meals in the same brasseries. The vulgar music halls are emptying the theaters. For eight years past the gay French capital has been more celebrated for the dancing horrors of the Moulin Rouge and the Casino than for the classic or even the spectacular ballet. The chahut, the "eccentric quadrille," with its "split" and "carry arms," has been well termed the "phylloxera of choreography." And after it, the loxera of choreography." And after it, the specialties in all the music halls. The state-ment of the bare fact that Otero, with her diamonds, with her crow's voice and her stamping heels and silly movements, was the real dancing celebrity of the last win-ter season, and that the Sisters Barrison (from America) ran her a hot second in the popular estimation, is to sum up the whole situation. It is very different from the times one reads of when the Eden Theater was doing Sieba, Messalina, Vivi-

ane and Djemmah.

There are six places in the Paris of today where ballet continues to hold on as some-thing of a specialty. They are the Grand Opera, the Galete Theater, the Chatelet Theater, the Folies Bergere (variety thea-ter), the Olympia Music Hall and the Nouveau Theater (attached to the dance hall of the Casino de Paris). It is true that they talk of reopening the Eden Theater, to revive the ballet glories of 1883, but every one predicts that the venture will end in failure. Add to the places already named the Porte Saint-Martin, which now and then gives comic opera on a large scale, with a dance, and the Bouffes, which somewith a dance, and the Bouffes, which some-filmes made a specialty of the new panto-mime, of which L'Enfant prodigue and Scaramouche are the best known examples

and you will have the tale of the ballet told.

The Grand Opera Ballet.

As to grand opera ballet, it is sufficient to The Music, Rhythm and Beauty of say that it is an expensive troupe to keep up (there are 120 in it), although the individual salaries, except to stars, are moderate. The opera ballet school is, like the opera, a state institution. Any parent may place his child in it, and have her education go on free, on signing a five years' engagement for her after graduation. After graduation, as an actual fact, only a percentage of the pupils are received into the opera ballet troupe. The others find places outside. The fortunate girl first goes into the quadrilles, at a salary of \$180 a year, then becomes a coryphee at \$300, and then a "subject" at \$400, and often finishes among the stars, if she has not stopped on the way in a "petit hotel." There is another side, however, to the money qustion, from the danseuse's point of view. Between it and the creaking of the bureaucratic wheels an explanation may be found of why one seldom sees anything but vague and transitory dance interludes at the Grand Opera, in spite of its much boasted bailet troupe. place his child in it, and have her education

bailet troupe.

All the best seats at the Paris Grand
Opera are sold beforehand, for the season, Opera are sold beforehand, for the season, to subscribers. Each subscriber has his seat one night each week. An orchestra chair costs 2,000 francs, a box 10,000. To be a subscriber to the opera gives the right to enter the foyer of the dance and pay court to the ladies. As the French say, voila tout. After a girl has passed her examinations and is received into the quadrilles, her great preoccupation is, not to distinguish herself in her profession, but to find a serious friend. It is an understood thing. Mothers count upon it when they place their daughters in the classes. The little girls themselves count on it as they do their painful exercises. To have one's horses, and one's house, to have a villa and to play the races—that is the ambition of the dancer of the opera. Beside the regular subscribers, who are pleased enough to chat with the danseuses, the transient regular subscribers, who are pleased enough to chat with the danseuses, the transient public of the opera goes to see the house, admire and be admired. The great public does not require much dancing—or much singing either, if the truth be told—so there is little dancing. Pass the Grand Opera I. for one, have never had a moment's pleasure in it.

At all the other theaters where the dance At all the other theaters where the dance still survives, the great majority of all the more important "subjects" are girls trained in the Grand Opera ballet school. Now, there is something cut and dried about French teaching which is painful to the French teaching which is painful to the foreigner wherever he encounters it, in dentistry, in medicine, in social usages, and even in religion. The girls who graduate from the Grand Opera ballet school have all their steps and turns; they do them just so, as they have been taught. And, in a single word, they dance like trained dogs. Last winter the Empire Music Hall, in London, sent over to the new Olympia a company to play the ballet "Brighton." It had a great success. The star, Miss Lovehad a great success. The star, Miss Love-day (I think that was her name), had movements full of flowing grace, a sentimental face, and pretty pantomimic ways, that seemed both honest and spontaneous. But when the ballet of "Brighton" had got well when the ballet of "Brighton" had got well going, the Olympia manager, following French custom, began to weed out, one by one, the "foreign" dancers and to substitute French girls. At last the star went also. The Woodenness of It.

It is a woodenness which characterizes all French ballet of the present hour. I think it comes directly from the ballet school of the Grand Opera. And it, perhaps, has had no small effect in weaning the great public from the classic ballet, to wander in the free and easy meadows of the Moulin Rouge. The wooden girl spins, steps and bounds, with her fixed smile of invita-tion, her bold eyes, her painted arm-pits and her mispainted mouth. To finish with the new Olympia, the latest news is that it has been sold, together with the Moulin Rouge and the Jardin de Paris, en bloc to the Empire Music Hall Company of London This winter the Olympia will be run as a first-class London music hall, with ballets from the empire, which will have at least the virtue of great novelty and life and ac-

At the Galete Theater it is the habit to give long ballet pieces, often of considerable merit, between the acts of some light opera, like the "Chimes of Normandy." They pay such dancers as Litini—who, to be correct, is not a dancer, but a "mime." The ballet of the "Chimes of Normandy"—"The Gathering of the Apples"—which for the constant of the Apples"—which the constant of the consta ering of the Apples'-which is now on at ty picture. But it is not great ballet. They are also always on the lookout for novelties at the Gaiete. Not long ago they had a ballet interrupt itself to let a girl do the "serpentine dance" in a cage of lions. When Loie Fuller was dancing at the Folies Bergere she had a young American girl staying with her, waiting for a London engagement. Her specialty was wing dancing, if that is what they call it, a kind of negro dance, and very entertaining. The ballet mistress of the Galete was present at one of her impromptu rehearsals one rainy win ter afternoon, on the stage of the Folies Bergere. She liked the wing dance, and she offered the American girl a good sum week-ly to interpolate it into a ballet of Breton fisher girls, in the piece then running. The offer was accepted; but when Miss went down to the first rehearsals, the mistress of the ballet and the ballet also were all scandalized because she said she must black up and wear the costume of a south-ern negro girl. "You can't dance blacked up! We cannot allow it!" "How shall I do, then?" "You must wear a premiere's cos-tume—white gauze, white tights—you must make yourself convenable and The girl explained it was impossible to do a wing dance that way-that it would be ridiculous. But they were obdurate. At last they told her that she might dress like a Breton fisher girl. She refused. She said it would be too ridiculous. So the engagement was canceled on the spot. The French girls, who were interested and not at all jealous, told her she was foolish. "What difference does it make to you, if you get your salary?" they would ask her. At the Chatelet Theater they run to falry pleces and spectacular representations, like the ever-youthful Michael Strogoff. The ballet company is recruited from all over; though regularly the stars are even better than the Galete affords itself. But the great majority of the coryphees and lesser lights are distressing in their personal ap-pearance. It is not alone that they are often well along in years; both Subra and Mauri, the two stars of the Grand Opera, are fat and middle-aged, each having the appearance of being scmebody's aunt or mother rather than a fairy of the dance. But the dancers of the Chatelet are also very plain faced. Here, at least, America has its own advantage. Most of our girls are pretty, to say the least. are pretty, to say the least.
At the Folies Bergere there is a very special company. All the girls are graduates of the Grand Opera school, and some

of them have left the Opera troupe to make more money in the less aristocratic theater, Campana, the chief dancer, is a beautiful young woman and a really good dancer. There are scarcely more than thirty in the company. Most all have pretty faces and do well. The Folies Bergere has long been known for its ballets. Now and then such men as Armand Silvestre and Catulle Mendes write scenarios for this company. Do French understand it—love pieces, which are, nevertheless, utterly unsentimental are, nevertheless, utterly unsentimental. What they amount to is scarcely more than a series of animated tableaux. Loie Fuller's long engagement at the Folies Ber gere raised the tone of the establishment much indeed. And departing she has behind her footprints which perhaps there but there is no perhaps about it. another—but there is no perhaps about it.
There will certainly be some other serpentine dancer at the Folies Bergere during the coming seson, for Miss Fuller herself has made other arrangements for Paris. But the higher tone which she gave to the establishment of the Rue Richter has had an elevating effect even on its ballet. Without knowing anything about the classic ballet herself, she persuaded the young ladies who had graduated from the Opera school to loosen up a bit, to give themselves more swing, to be less wooden than thei teachers had trained them up to be. At the Nouveau Theater the new panto

mime, which was going to astonish the world a few years ago, is varied by ballet pieces scarcely different from the Folies Bergere. As to the new pantomime (l'Enfant Prodigue, Scaramouche, etc.), will it have the brilliant future which enthusiasts were only a short time ago predicting for is not flattering to the dramatic authors who still know how to write dialogue. There is little danger of it." This is what very beautiful attempt to give to Paris something more like the story ballets which every one who knows Vienna has learned to love so well. The attempt is already a failure so far as the immediate future is concerned. The pantomimes were pretty, but there was not enough real dancing in them to have suited the Vienna taste. Meanwhile Parisians who wish to see true ballet in its highest form—uniting beauty, youth, sentiment, story, scene and meritorious music—must take the Orient express for the Hof-operntheater.

STERLING HEILIG.

VISITING CARDS

A Glimpse Into the Workshop Where They Are Made.

THE TRAINED HAND AND EYE

Preparing the Pasteboard for Its Advent Into Society.

CRESTS AND MONOGRAMS



ders for engraved vis-A iting cards are being left in the shops by those who have depleted the contents of their card cases during the summer outing. How few, though, even among those well informed in matters of greater moment, understand the difference between an engraved visiting card

and one printed from type. A very general expression heard at the engravers' shops from customers is "to strike off" such a number of cards, and they are surprised to learn when they have bought no plate that such a thing is necessary.

In many respects the printing of an en graved card is a process very similar to the printing of etchings, steel engravings and other pictorial subjects made on plates of metal. The pictures or impressions from these latter are in minute relief. That is, the ink lays on the paper like sand on sandpaper, and this relief is the cause of much of the softness and beauty of the pictorial subject, for notwithstanding the minuteness of the relief of the lines and dots of ink above the surface of the paper they each cast a shadow, and the blending of the real lines and dots with the shadows creates an effect that cannot be attained in any other process. This same effect adds, also, to the artistic value of an engraved visiting card or invitation, and coupled with this is the advantage of originality, since a personal card can, of course, be only imitated in the general style of the lettering. So one's card case is filled with what may be considered not improperly proof engrav-

In the Hands of the Engraver.

If one desires to use engraved cards and has no plate, a plate will have to be engraved. After an order for such has been left at a shop, it is sent, with instructions as to the style of lettering and such other details, to the engraver. This artisan sits, usually, at an adjustable sloping table placed before a window-one that opens to the north, if possible, in order to secure that subdued light which is best for all graphic purposes. He also has before him, frequently, a screen of white tissue paper, which further softens the light and prevents reflections on the bright metal surface upon which he courses. which he engraves. The implement most used is a graver, which is a little bar of hard steel, generally of a triangular shape, fitted in a handle and sharpened at the end,



obliquely, to a point of requisite fineness. Then there are a number of subordinate tools, such as tiny double-pronged forks of different widths, for marking parallel space different widths, for marking parallel space lines on the plate, T squares, burnishers and scrapers, all used either to prepare the plate for the work of the graver or finish it up after that tool has been used. Copper and steel plates are used, the former about a sixteenth of an inch in thickness and the latter about double that thickness, and these are procured from the manufacturers in a nearly finished condition, and are furnished in certain sizes.

When an engraver is given an order to execute, say for a visiting card, he first

When an engraver is given an order to execute, say for a visiting card, he first takes a copper plate that will suit the size of card selected, rubs down the surface with charcoal and oil and then buffs it bright with a felt buffer. Upon the now highly polished surface he slightly scratches, with a quill or pointed stick of wood, a sketch of the required name backward as all such the required name backward, as all such work must be in reverse on the plate. With work must be in reverse on the plate. With the little forks he scratches next guide lines for the width and slant. Aided by a magnifying glass supported in a frame he proceeds to cut into the plate, with a graver, the name he has previously sketched in. This is very delicate work and easily shows the skill of an expert in the beauty and firmness of the lines and curves and in the formation and ionize of the let-

and in the formation and joints of the letters.
It is obvious that large plates require It is obvious that large plates require more time, and, when the subject is an elaborate design or picture, the adoption of a combination of mechanical and chemical means is often necessary to accomplish the final result. The ruling machine is a delicately adjusted piece of mechanism for producing tints to imitate the flat wash effects to descripts. The flow close perceival lines. in drawings. The fine, close parallel lines that most often make up the skies in an enthat most often make up the skies in an engraved picture, the background of a portrait or the shading of lettering and fancy work in a letter heading, are done with a ruling machine. Nearly all fine engravings have some ruled tints upon them, and others are almost entirely of these ruled lines, as, for example, the steel engraved pictorial calendars, so frequently seen of late on office desks

Bitten by Acid.

These tints are made by a diamond point drawn over the plate by the machine, moved by hand. The plate has been first coated on both surfaces with an acid resisting wax, and the diamond cuts through this coating and exposes the surface of the plate in many fine lines. In order that the latter may have depth enough in the plate to hold may have depth enough in the plate to hold it, chemistry is resorted to that is, the plate is subjected to a bath of diluted acid, which eats into the parts of the waxed plate exposed by the diamond. This whole operation of coating with wax, ruling and biting with acid, may be several times repeated, with resulting effects of cross hatching, deeper tints and the like. In most instances before this ruling has been done the greater before this ruling has been done the greater part of the hand work has been either en-graved or etched with the aid of acid into the plate. After the final retouching by the engraver with his instruments the finished plate goes from his hands to the printer. Like the engraver, the printer may be ac-cording to his abilities and ambition either an expert or merely a skilled workman, but in any case he is one who must exercise ex-treme care in his occupation, or the easily damaged plates he handles will quickly be

damaged plates he handles will quickly be tell-tales of his bungling.

For printing from engraved plates a platen press is used. It is made up of, first, a bed or slab of iron, upon which the engraved plate rests, and this bed is supported between two iron rollers or cylinders—a large one on the under side and a smaller polished surfaced one at the top. The rollers are supported in an iron trame, at one

side of which is a large wheel or set of radiating arms, worked by hand, for turn-ing the small roller, the revolution of which moves the press bed with its engraved plate under the roller and by pressure against the plate makes the impression. The frame is supplied with screws for regulating the pressure of the small roller against the bed.

pressure of the small roller against the bed. Platen presses differ in some respects according to make and improvement in pattern, but the foregoing description is substantially true of all. For ordinary commercial printing none of the presses is large. The bed reaches about to the printer's waist, and the press does not exceed a couple of feet in width.

Having received the plate, the printer decides, from the nature of the design or subject of the engraving, and from the quality of the paper or card to be used, whether he will require a hard or soft "backer," By this is meant that to make sure of bringing all the ink from out of the plate, the printer will either tightly wrap the upper roller of the press in several thicknesses of paper, or in soft blankets.



Plate Printer at His Press.

He sometimes underlays the plate with thin paper in places where heavy shadows appear in the engraving, and this insures, by the differently distributed pressure, a good rendition of the lights and shades in the printed impression, or if the subject be merely lettering, it brings out the line lines strongly. But this proceeding requires the greatest carefulness and judgment on the part of the printer.

The pressure necessary to bring all the ink out of the lines of the plates on to the paper having been exactly determined, the printer begins making the impressions. On more modern makes of presses the plate, more modern makes of presses the plate, with its underlays, is kept in a stationary position on the press bed, without being lifted from the inking slab to the bed, as in the old way. The plate is "filled in" either with a roller made of soft textile material thoroughly coated with an ink composed of a mixture of dry color, olls and dryers, or the ink is daubed on with a dauber of similar material to that of the roller. In either way, the plate is quite coated over with the way, the plate is quite coated over with the ink. With a soft roll of cheese cloth the printer dexterously wipes off the ink from the surface of the plate, so that none is removed from out of the lines, and then, with the hand alone and a little whiting, quickly political and the surface of the states. polishes away the stains left by the oily ink. The paper is then laid upon the plate. Girls usually do this, and are called feed-Girls usually do this, and are called feeders. The wheel at the side is then revolved by the printer, sending the press bed, with the plate and paper, under the roller. Moderated by the "backer" on the roller, the pressure, to a certain extent, drives the fiber of the paper down into the engraved lines containing the ink, which adheres to the paper after it is removed from the plate.

Engraved Letter Paper. This whole operation of filling in, wiping and polishing the plate and printing each impression separately is continued until the order is completed. Expedition is gained on the bed in going under the roller and in its the bed in going under the roller and in its being brought back to its former position automatically. The impressions being in relief, are easily smirched, and have to be carefully laid aside in rows to permit the oily ink to dry. Etchings and the like, which require artistic development previous to the pulling of the impression, such as the making of tints and high lights on the surface of the plate by the printer himself, are best done on the old-fashioned presses of slow movement.

The monograms, crests and address lines that are so much used on correspondence papers nowadays are also usually made in shops where plate printing is done, as the two arts are closely allied. Combinations of letters making the personal monograms, or the address lines as they appear on letter paper, are engraved most usually on little blocks of steel, called dies, in a way similar to engraving on a plate. Crests and coats of arms are best when sunk into the die. That is, the engraver, after first cutting or etching the rudiments of the design in the metal, sinks it deeper by beating into it with a hard steel punch, and afterward retouching the design with the graver. This method in the resulting impression presents a very high relief and beautiful finish. Some engravers make a specialty of sinking dies and do no oth

specialty of sinking dies and do no other kind of engraving.

Stamping from dies is an operation quite dissimilar to plate printing. The press used for the purpose is small, but massive, and rests on a stoutly built bench. The die is held engraved face downward, fastened in a little movable steel case that fits in a groove at the lower end of a vertically supported short steel bar, which transmits to the die a stamping vertically supported short steel bar, which transmits to the die a stamping movement, received by the bar being struck on its upper surface by the downward revolution of an upright steel screw, operated by hand. The die is drawn upward away from the paper, after the impression is made, by a set of powerful springs.

Like plate printing this process necessitates an abundant use of ink, a very small quantity of which appears in the impression on the paper. The die is removed from the press, but while still in the small case is



"filled in" by the stamper, with a small brush full of a thick ink of the necessary color and mixed with a brilliant varnish.

This ink or color, as it is better termed. fills the engraved depths of the die, while a great deal more is left by the brush on the surface, which has to be wiped off by passing the die quickly over a pad of smooth, thin paper, kept for the purpose on the bench at the right-hand side of the

Perfect relief in a stamped impression is

attained by using a counter die, made by gluing bits of straw board or card on the flat surface of an iron slot immediately under the die, which, when struck by the under the die, which, when struck by the die, becomes a permanent relief impression, which presses the thin sheet of correspondence paper up into the die, whenever an impression is made. The pressure is thus exerted in two directions. The paper counters require to be trimmed with a band knife to suit the exact proportions of the design on the die, otherwise the paper becomes bruised around the impression when stamped.

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