

**Engraving.**

The arts by which representations of objects are given by impression, in one plain colour, on paper, are commonly divided into two, Metal Engraving, and Wood Engraving, and the impressions from the works executed in these arts, are respectively termed plates and cuts. The earliest impression of an engraving on wood, which is known to be in existence, is dated 1423. Still, whatever its rudeness, it was produced by precisely the same process as the beautiful cuts which we now find illustrating books. The wood generally made use of for this purpose is box; the old workmen cut on the length of the wood, the moderns on the cross section. If a work of great finish was required, it was the practice to use two or more blocks. The first merely impressed the outline; another put in the half tints, and so on, until the requisite effect was produced. Some of Albert Durer's engravings were worked by this tedious process. The tools required are four, namely, a graver, a tint tool, a gouge or scooper, and a flat chisel. All the parts of the wood are cut away except those intended to mark the paper, that is, all the lines we see in an impression are caused by elevation on the block. The mode usually pursued is this: the block is made perfectly even on the side on which the engraving is to be executed, and then a little whitening is rubbed over it. The subject is drawn on the block with a pencil by the artist. The cutting then commences, the wood left untouched by the pencil being removed, the cutter pushing his tools from him, whilst the metal engraver pulls them towards him. One of the best effects is caused by the processes called overlaying and lowering. In the former, where lightness of expression is desirable, the surface of the block is scraped away, so that the ink on those parts is only slightly received by the paper. In overlaying, pieces of paper or cloth are placed on the back of the block, and when the pressure is applied, the corresponding parts are more strongly pushed against the paper, the consequence being darker outlines or shades. A deal of nicety is required in printing, and the effect of a Wood-Cut very greatly depends on the pressman employed. This remark applies of course, only to such as are printed by hand presses; but the great majority of cuts are at present worked by steam machines. These are not so well adapted to the purpose, and impressions very often suffer a good deal in their appearance, when the engraving itself is a good one. The greatest part of the work is done by the graver; the tint tool has a very thin blade and point; it is used in cutting parallel lines near one another, so as to produce an apparent depth of color, as in the sky. The gouge is used for paring away masses of wood for which there is no use. The block of wood is placed on a leather pad, stuffed with sand, and held firmly with the left hand, whilst the right is employed to move the tool. When the work has proceeded to an extent which makes the artist desirous of seeing its effect, he takes an impression on thin India paper, with his hand, and then he is able to judge of the merit of his labor, and he can see whether he has made any mistakes that will mar the general effect of the cut. Engravers assert that it is very difficult to correct a fault in the cutting, and they generally consider it the best policy to begin on a new block to alter the old one. Sometimes, when the fault is within a narrow compass, they ingeniously cut a piece right out of the wood, and insert another piece in its place.

Engraving on metal, is a much more complicated process, and there is much greater diversity in it than in wood engraving. Vasari tells us that the art of printing from engraved plates was the accidental discovery of Maso Finiguerra. He was a worker in niello, that is one of those goldsmiths of Italy, who traced designs, sometimes simple, sometimes complex, on plates of silver or other metal, and then filled up the lines with the sulphate of silver a black substance. The lines were thus made to contrast with the rest of the plate, and something of the effect of our engraving on paper, was produced. It is said that Finiguerra, desiring to see the effect of his work, before going through the final process that of filling in the black substance, applied a coloured fluid to the plate, and then took an im-

pression on paper. Whether this simple process was first used by this particular goldsmith or not, certain it is that the earliest intimation of an engraving from metal is an impression of a niello plate by him. It was taken from a pax, (the vessel in which the consecrated bread was placed,) which is still in existence at Florence, dated 1452, and in the Royal Library at Paris, may be seen the impression alluded to. There are thirty minute figures very beautifully designed, representing the Coronation of the Virgin. The steps by which the idea thus obtained was improved, do not appear, but not many years elapsed before we find persons whose occupation it was to engrave metal plates for the purpose of taking impressions on paper.

Before the artist applies his engraving tools to a plate of copper, it has to undergo a certain preparation. It is first hammered perfectly plain, and afterwards polished with pumice stone, then with a fine kind of slate, then with charcoal and finally with oil rubber. The plate is next evenly covered with a thin coat of wax prepared with asphaltum and pitch. The design intended to be engraved is drawn on paper the back of which is rubbed with red chalk dust. This being laid upon the varnish, the drawing is gone over with a fine point and thus the design is transferred. The paper being removed, the artist traces the outline through the wax upon the copper and this having been done, the wax may be taken off. The effect of line engraving is produced as the term imports, by a series of lines of different degrees of thickness and closeness but without dots or other marks. The chief study of the line engraver (says a writer on this subject) is to make such an arrangement of lines as shall mark the character of the various objects, whether they stand forward in bold relief or are mellowed by reflected or borrowed light, in short to convey to the eye the various gradations of colours which have been expressed by the artist on canvas and finally to preserve the whole in its proper keeping or such a disposition of the various lights and shades (termed chiaroscuro) as shall leave no doubt as to the intended place of any object on the plate; for although the lights and shadows of nature are continually varying in direction and intensity throughout the day, still all objects preserve their relative value in the landscape. In giving smoothness and polish to an object the lines are parallel, sharp and clear in their course. To throw an object into the shade, and to give it a dull appearance, lines crossing each other perpendicularly are used, and are termed square hatchings, but where an intermediate state is required, the lozenge hatchings or lines crossing each other at an angle less than a right angle are employed. Where a waving or a flowing effect is to be produced, the hatchings will be slightly curved, but where an object is brought prominently into relief, various intervals in the shadings will produce the desired effect. Engraving with the dry point, as it is called, is executed by a sharply pointed needle which must have been carefully ground in a groove, to preserve its conical shape. The burr which the instrument raises has to be skilfully taken away afterwards.—The dry point engraving is not often used without the help of other styles, but six pieces of Rembrandt are mentioned as being produced entirely by this method.

*(To be concluded.)*

**Foolishness of Profane Swearing.**

A gentleman being in company with a number of persons in a stage-coach, who used very profane language, was invited, after the rest had exhausted their fund of anecdote, to tell his story. He complied, and as they had interlarded every sentence with some senseless, profane expressions, he substituted the phrase, "tobacco and pipes! pipes and tobacco!" His companions listened with perfect astonishment—they concluded the man must be insane! But, after he was done, and they professed themselves much pleased with his story, one of them took the liberty of inquiring what he meant by the frequent use of the above phrase. Oh, said he, it is my peculiar method of *swearing*! Whereupon they saw at once the extreme silliness of profane language, and abstained from its use during the rest of the journey.

**Importance of Flannel.**

The following extract from Robertson on Diet and Regimen, should not be lightly overlooked by emigrants to California.

Sir George Ballingall, in his lectures on military surgery, adduces the testimony of Sir James Macrigror to the statement that, in the Peninsula, the best-clothed regiments were generally the most healthy; adding that, when in India, he witnessed a remarkable proof of the usefulness of flannel in checking the progress of the most aggravated form of dysentery, in the second battalion of the Royals. Capt. Murray told Dr. Combe that 'he was so strongly impressed from former experience, with a sense of the efficacy of the protection afforded by the constant use of flannel, next the skin, that, when, on his arrival in England, in December, 1823, after two years' service amid the icebergs on the coast of Labrador, and the ship was ordered to sail immediately for the West Indies, he ordered the purser to draw two flannel shirts and pairs of drawers for each man, and instituted a regular daily inspection to see that they were worn. The precautions were followed by the happiest results. He proceeded to his station with a crew of 150 men; visited almost every island in the West Indies, and many of the ports of the Gulf of Mexico; and notwithstanding the sudden transition from extreme climates, returned to England, without the loss of a single man, or having any sick on board on his arrival. It would be going too far to ascribe this excellent state of health solely to the use of flannel, but there can be little doubt that the latter was an important element in Capt. Murray's success.

**California the ancient Ophir.**

Major Noah in a long article propounds the novel doctrine, "that California is the ancient Ophir,"—that land where the great Solomon got so much gold "and silver?" to build the glorious old Temple at Jerusalem, and which fell a prey to the fierce Egyptian soon after Solomon's death. He infers, from the vast amount of the gold of Ophir used in the construction and ornaments of Solomon's temple, the length of the voyages of the ships which were sent for the gold, and various other considerations, that it was California gold that so wonderfully and magnificently enriched the famous temple of antiquity. The Major states the cost of the temple at upwards of four hundred and fifty millions of pounds sterling—a sum hardly to be compared with any single financial account on record, except the national debt of Great Britain.

The ships sent by Solomon and Hiram of Tyre for the gold and treasures of Ophir, required three years to make the voyage, and as the locality of Ophir has not been ascertained, and as the length of the voyage would seem to correspond very well with the distance to California, Major Noah therefore concludes that ancient Ophir and modern California are one and the same place.

**The Lost Ten Tribes.**

The Major also believes that the Indians are the descendants of the lost ten tribes that were carried away by Salmanezar and went into a far country. He believes that they crossed from Asia by Behring's Straits to our continent and finally peopled our whole country. The reasons of his belief are stronger evidence of our Indians being of Scythian than Hebrew origin—their rights, customs and language are radically Scythian. The true test of Jewish descent, above all others, is the "keeping of the Sabbath.

**Madder.**

The most of our madder used in the country is procured from Belgium. Kentucky, Missouri, Tennessee, Arkansas, and perhaps the whole southwestern country would produce it well. A madder plantation requires a good deal of preparation and some 3 or 4 years before a large and regular yield can be expected. Deep ploughing and bedding and thorough manuring, are requisite; but when once prepared, the expenditure of labor is not so heavy, and where properly arranged the crop is annual, that is to say, one third or one fourth of the land is digged each year, producing several hundred dollars per acre.

London is affected with the California gold fever.

**Mr. King's Report on the Panama Railroad.**

A correspondent of the Union, who appears to have examined thoroughly Mr. King's Report on the Panama Railroad, and the statement of the distances between New York and certain ports on the Pacific and the Indian Oceans, by the old routes around Cape Horn and the Cape of Good Hope, as compared with those by way of Panama, says the distances are reduced below the possibility of navigation on the Panama route, while those around the Cape of Good Hope are considerably exaggerated. He says:

The difference between the sailing distances to Canton on the two routes, is certainly far less than is represented in the Tables contained in the report. The route by way of Panama cannot be fairly reduced by 12,000 miles, nor can that around the Cape of Good Hope be reasonably estimated at more than 15,500. Calcutta may be considered as nearly equally distant from New York by these two routes. The extreme importance of the subject has induced me to offer these remarks to the public, in the hope that they may render more cautious those who are concerned in projects with regard to the Isthmus, as well as those to whom is committed the determination of the amount of assistance to be given by our government to such projects.

**The Barometer.**

Torricelli invented, and Pascal perfected this instrument, and it is of great use, not only in foretelling the changes of the weather and thus saving the lives of navigators, and preventing the loss of millions of property on the ocean, but also in enabling us readily to ascertain the height of mountains, or of any other situation to which it can be taken.

This instrument falsifies the ancient maxim that "nature abhors a vacuum." The barometer is constructed upon the principle of atmospheric pressure. The atmosphere on a clear day will support in a vacuum a column of mercury 30 inches in height. It is therefore ruled in this height in the tube by the pressure of the atmosphere, and this is the reason why the barometer is not affected in houses to indicate the nature of the weather. The barometer is employed to measure heights, as the mercury falls the higher we ascend. The rising mercury indicates the approach of fair weather, and the falling mercury indicates foul weather. No captain should go to sea without a good barometer, and the vertical kind are the best. There is no person but can easily make one for himself.

**Advice to Children.**

You were made to be kind, (says Horace Mann,) generous and magnanimous. If there is a boy in the school who has a club foot, don't let him know that you ever saw it. If there is a poor boy, with ragged clothes, don't talk about rags when he is in hearing. If there is a lame boy, assign him some part of the game which does not require running. If there is a hungry one, give a part of your dinner. If there is a dull one, help him to get his lesson. If there is a bright one, be not envious of him; for if one boy is proud of his talents, and another is envious of them, there are two great wrongs, and no more talents than before. If a larger or stronger boy has injured you, and is sorry for it, forgive him, and request the teacher not to punish him. All the school will show by their countenances how much better it is than to have a great fist.

**A Bone Picker.**

"I've got a new machine," said a pedler, "for picking bones out of fishes. Now I tell you it's a little the darndest thing you ever did see. All you have to do is to set it on a table and turn a crank, and the fish flies rite down your throat, and the bones rite in the grate. Well, a country 'greenhorn' got hold of it the other day, and he turned the crank the wrong way, and I tell you the way the bones flew down his throat was awful; why, it stuck the fellow so full of bones that he could not get the shirt off for a whole week!"

Since the appearance of cholera in the West the Roman Catholic Archbishop has notified the members of the church that abstinence from the use of meat on Fridays is abolished until further notice.