

## MISCELLANEOUS.

## Tanning, A New Book.

The "Art of Tanning, Currying, and Leather Dressing," by Campbell Morfit, an able chemist, and published by Henry C. Baird, of Philadelphia, is a new book on a subject of great importance to tens of thousands in our country, for the leather interests of the United States are very extensive. There being no less than 6,293 tanneries in our country, employing 20,909 persons, and in which is invested no less than \$18,900,557. With the exception of those excellent articles published in Vol. 5, Scientific American by one of the oldest, ablest, and best educated tanners in the United States, we have seen nothing published on tanning in our country which was of any consequence until now. This work is a translation from a celebrated French work, with such emendations and additions by Mr. Morfit as to render it a new book with all that is good belonging to the old one. It is adorned with a plate of Zadock Pratt, and a short biography of the ex-senator tanner.—There are older and perhaps more experienced tanners than he in our country, but none, we suppose, so fortunately wealthy. Some very excellent chapters are presented on the nature of tanning, the different substances employed; the qualities of different barks and a very excellent essay on the oaks of our country, of which there is a great variety. All the processes are explained and illustrated with 200 engravings, and the specifications of various patents for improvements are presented. No less than ten several patent accelerating processes (foreign and home inventions) are given, among which is that of Hibbard, published in Vol. 6, Scientific American. A great many other plans are also given, but that of Prof. Eaton, which has been highly praised, is not mentioned. The patent for it was granted at such a recent date, that information of the same could not have been obtained in time for publication.

In looking over this book, and reading the different plans for improving leather, and for reducing the time occupied in tanning a skin or hide, we are more and more convinced of the important fact that the tanning art has been greatly improved by modern discoveries and application—a contrary opinion to that held by the universal mass of the people. We know it is very difficult to introduce new plans of tanning, for tanners are like others wedded to old things; thus the rolling of leather—an operation now generally practised—was opposed with much bitterness by some of our most experienced tanners, one of whom said "he never would roll a hide while he lived," an assertion which he wisely lived either to forget or repudiate.

The whole science of tanning depends on two principles, one the removal of the hair from the skin, with the least injury to the gelatinous matter of which it is composed, and the other is the rendering of the skin insoluble in water, and to resist the action of the atmosphere, and yet be flexible. The hair can be removed by lime, sweating, and other means, but the employment of a substance or substances that will combine with the gelatinous matter of the skin to form a new substance, insoluble in water and incapable of being injuriously acted upon by the atmosphere, offers a wide field for the historian of the tanning art, and presents a subject for the study of every tanner at least in our country. The art of tanning was known, we suppose, before the flood; it is practised among all nations, civilized and savage, and the gist of it lies in soaking the skins in different solutions of various vegetable substances of an astringent character until the tanning juices of those substances have combined with the whole skin and rendered it a new substance named leather. Oak and hemlock barks, sumac, willow, blackberries, catechu, kino, &c., are employed. Those who wish to get an account of the various processes and substances employed, must consult this book. We have only another remark to make, it is this, we have never known any of the metallic solutions to be employed in tanning, and from their nature, in rendering some vegetable substances insoluble, we believe that it would be worth the trouble for some of our tanners to make a few

experiments. We would recommend the chloride of tin; it is made by feeding drop-tin into muriatic acid until effervescence ceases. The way to try it would be to make up a solution of it in a tub of cold water, until it stood about 1½° in the hydrometer; the skin should have undergone through the whole tanning process before it is placed in this solution, in which it should lie about two hours, and be stirred up two or three times. After this it should be well washed in cold water, and then finished in a milk-warm water bath, when it will be ready for drying. It is our opinion that a superior leather would be produced by this addition to any of the present processes.

## Remarks about the Fair of the American Institute.

Owing to the great number and variety of articles exhibited at the Fair, and owing to the want of good classification and arrangement, we must have overlooked many good things in our notices of the articles exhibited. It could not be otherwise, for the articles are never arranged in classes because the place of exhibition has always been too small to allow of a good arrangement. One machine of one class stood at one corner, and another machine of the same class was to be found mixed up with a totally different group.

The Catalogue of the American Institute Fair has always exhibited an arrangement similar to that of a stone heap raised by a parcel of boys pitching the stones when sojourning home from school. The articles are not classified, nor does the catalogue afford the least clue to guide a visitor where to find such and such an article exhibited. We hope the managers of the Great Fair, next year, will have a good catalogue—an instructive one; they will find it a profitable speculation.

**BANDING PULLEYS**—A most important improvement exhibited at the Fair was a circular and an upright saw for sawing scroll-work, driven by an improved method of Banding Pulleys, invented by R. W. Parker, who is now residing at 58 Dey street, this city, and for which a patent was granted on the 17th of last February. By the power of one man at the crank, a person is enabled to saw, with either saw, through a two-inch plank; the circular saw running at 2,600 revolutions per minute, and the scroll saw 600 vibrations per minute. This was done while the writer of this turned the crank. We consider this improvement to be a most valuable one, and applicable to all machinery. For portable machines, in small shops, it is an improvement which must soon come into general use.

The improvement in this method of banding pulleys consists in arranging the driving pulley in reference to two other pulleys, that the band passing over these pulleys is not only pressed with any desired force against the periphery of the driver, but is also pinched between other pulleys operating upon the band as feed rollers.

**FINE ARTS**.—In the fine arts, some of the most beautiful bronze castings we ever saw were exhibited, J. G. Gilbert, of 216 Pearl street being the agent. A gold medal was awarded for them. These castings were made by a new process of preparing the moulds. Flowers, animals, and other objects of nature can be copied exactly, and all their bounding lines of beauty, rendered permanent as the everlasting hills in metal.

**ENGRAVING ON STEEL**.—A gold medal was awarded to A. H. Ritchie, of the firm of Bachia & Co., corner of Chamber and Centre street, N. Y., for a full length mezzotint steel engraving of the immortal Washington. It is the finest engraving, considering the attitude and the mass of light thrown upon the figure, we ever saw. The likeness is excellent and the whole composition of the picture is different from any other heretofore produced.

We have always endeavored to notice things strictly new, useful, and beautiful; but as we said before, amid such a confused mass, many excellent things have no doubt been overlooked. We would also state that a great defect, and one injurious to exhibitors at fairs, is the absence of a full description of the nature and action of the machines exhibited. A brief and clear description should be pasted up on every machine and apparatus. We hope the managers of the fair in the New

York Crystal Palace, will attend to this hint, it will make the Fair far more interesting and instructive.

## The New Crystal Palace at Sydenham, near London.

The last load of materials, the debris of the London Crystal Palace, were removed to their new site at Sydenham, on the first of this month. From all accounts the new Crystal Palace will exceed its predecessor in its decorations and general arrangements. No expense appears to be spared in rendering it a model edifice—one of the grand sights of the world. M. Bonomi is occupied in arranging the specimens of Egyptian architecture, among which is a model of the rock-hewn temple of Abu-simbel, sphinxes, obelisks, and those strange paintings which abound in the tombs of ancient Thebes. The intention is to illustrate, by this means, the different epochs of Egyptian history. Models of the celebrated Ghibaldi gates, and the principal figures from the Medici chapel at Florence, which latter are deemed the master-pieces of Michael Angelo, have been obtained by Messrs. Jones and Wyatt, who are travelling on the continent of Europe for the purpose of securing the *chef d'œuvre* of art for the People's Palace. There is a similar activity and spirit exhibited about the grounds as in the erection of the building itself. Sir Joseph Paxton has ordered 50,000 scarlet geraniums to be supplied next spring, and the celebrated collection of palms, belonging to the Messrs. Loddiges, of Hackney, have been purchased by the Company. The steam engines have been ordered to work the water that is to adorn the palace and grounds, and already erect columns mark nearly the entire length of the building. The proprietors of the obelisks and blocks of marble and stone which stood outside the great Exhibition Building, have presented them to the Crystal Palace Company.

## Scarcity of Silver Coin.

The same scarcity of silver coin that has long prevailed in the United States, extends throughout the European Continent, as will be seen by the following paragraph from the London Times:—

There never was known for many years so great a scarcity of silver currency as at present, in consequence of the very large exportations of silver that have recently taken place to Port Phillip, Melbourne, Geelong, Sydney, and other ports of Australian colonies for the convenience of the adventurers at the gold diggings. Not a vessel leaves the ports of London, Plymouth, Bristol, Liverpool, &c., but takes out a considerable amount of both gold and silver specie, either by speculators who are proceeding to the above colonies for the purpose of making large purchases of gold from the emigrants now working at the diggings, or consigned by capitalists and bullion dealers to their agents at Port Phillip, &c., for the same specific purpose. It is with much difficulty that the bankers in the city and West End can obtain silver currency to any amount either at the Bank of England or at the Royal Mint, to accommodate their correspondents in different parts of the United Kingdom with silver change.

At Birmingham, Manchester, Liverpool, and other large commercial towns, the demand at the various banks for silver is so great that they are unable to supply parties with more than £100 to £200, as not only is a vast quantity being shipped off to Australia and India, but the demands for silver bullion and specie for France, Belgium, Holland, Hamburg and the Continent, are also very extensive.

In consequence of this immense call for silver, it appears that the authorities at the mint intend having a considerable sum coined into specie, and likewise gold currency of half sovereigns for the convenience of the emigrants, who are placed in great difficulties from the want of a small circulating medium in exchange for their gold.

## The French Infernal Machine.

This machine, which has been submitted to the examination of the most competent men, is composed of two tubes of thick sheet iron about three inches in diameter, and about eleven inches in length. To these two barrels are attached 120 cases made of thick cardboard, of the form and length of the Ro-

man candles used in fireworks. Each of the large barrels was charged with heads of nails and pieces of iron and lead, and each case contained a ball. A second machine, similar to the former, was in course of construction, of which the police has also obtained possession.

## Minute Mechanism.

There is a cherry stone at the Salem, (Mass.) Museum, which contains one dozen silver spoons. The stone itself is of the ordinary size, but the spoons are so small that their shape and finish can only be well distinguished by the microscope. Here is the result of immense labor, for no decidedly useful purpose; and there are thousands of other objects in the world, fashioned by ingenuity, the value of which, in a utilitarian sense, may be quite as indifferent.

Dr. Oliver gives an account in his Philosophical Transactions, by-the-way, of a cherry stone, on which were carved one hundred and twenty-four heads, so distinctly that the naked eye could distinguish those belonging to popes and kings, by the mitres and crowns. It was bought in Prussia for \$1,500, and thence conveyed to England, where it was considered an object of so much value, that its possession was disputed, and became the object of a suit in chancery. This stone Dr. O. saw in 1687.

In more remote times still, an account is given of an ivory chariot, constructed by Mermecides, which was so small that a fly could cover it with its wing; also a ship of the same material, which could be hidden with the wing of a bee.

Pliny, too, tells us that Homer's Iliad, which has fifty thousand verses, was written in so small a space as to be contained in a nut shell; while Elia mentions an artist who wrote a distich in letters of gold, and enclosed it in the rind of a kernel of corn. But the Harren MS. mentions a greater curiosity than any of the above, it being nothing more or less than the Bible written by one Petre Bales—a chancery clerk—in so small a book that it could be enclosed within the shell of an English walnut. D'Israeli gives an account of many other similar exploits to that of Bales.

There is a head of Charles II, in the library of St. John's College, Oxford, wholly composed of minute written characters, which, at a small distance resemble the lines of an engraving. The head and ruff are said to contain the book of Psalms, the Creed, and the Lord's Prayer. Again, in the British Museum, is a portrait of Queen Anne, not much bigger than the hand. On this drawing are a number of lines and scratches, which, it is asserted, include the entire contents of a thin folio.

## Picture Frame.

A picture frame on improved principles has been lately invented by John Wood, of New York City, who has taken measures to secure a patent. The object of this improvement is to conceal from sight, when not used, a key, or sheet of paper, &c., explanatory of the picture. For this purpose the explanatory key is fixed behind the picture on a hollow cylinder, within which is coiled a spring, which latter is held from unwinding by a ratchet wheel, &c. The apparatus is fastened in such a manner on the back of the frame as to be concealed from view, the key only being visible when unrolled, which is effected by drawing a tassel attached to the end. When it is desired to wind the key up, a catch is detached from the ratchet wheel, and the spring, having no check, uncoils, thereby causing the cylinder to revolve and thus wind up the explanatory key or diagram.

Captain Land, of the American clipper ship Challenge, died of dysentery, at Whampoa, on the 26 July. Upon examining his body, several rusty nails were found in him, one of which had passed through the left lobe of his lungs. It is thought that he must have swallowed them when a boy.

It is the highest duty, privilege, and pleasure for the great man and the whole-souled woman to earn what they possess, to work their own way through life, to be the architect of their own fortunes.

All a Spaniard wants in this world is sunshine and garlick.