

(From the Scientific American)
TIN AND ITS USES.

Every child in the land knows what tin-ware is, but the number of persons who have seen even a piece of pure tin, or are acquainted with its nature and various uses is not large. Tin, or "stannum" is one of the ancient metals, and was known to the old Egyptians and Hebrews. It is found in the state of an oxide in various countries—Spain, Hungary, South America, and the Indian Archipelago, but most abundantly in Cornwall, from which place it was obtained by the Phoenicians, where Tyre was mistress of the seas, and before Britain bore the impress of the Roman metal. As a metal it has a brilliant appearance, is very malleable, emits a crackling sound when bent, a peculiar odor when rubbed, and when cooled slowly from a molten state, it crystallizes. The tin-stone of Cornwall is found in veins associated with copper ore, in granite and slate rocks, hence it is called "mine tin." The oxide of tin is also disseminated through the rocks in small crystals; and in alluvial deposits it is found mixed with rounded pebbles, and is called "stream tin." When tin ore is mixed with copper—after being roasted—it is treated with sulphuric acid, which dissolves the copper, but not the tin. After it is washed, the ore—then called "block tin"—is ready for smelting. The common method of smelting the ore is in a reverberatory furnace with coal, the ore being mixed with powdered anthracite or charcoal. When very pure metal is required, the smelting or reducing is conducted in a small blast furnace, powdered charcoal being added to mix with the ore, also a very small quantity of lime as a flux. After the first smelting of the ore, it generally requires two other smelting operations to purify it for use. All these demand great care and experience to conduct them economically. The refined and purest tin is that which is used in the manufacture of tin plate, the tin being used for this purpose in a molten state, and the tin plates of iron dipped into it, just as dipping the bars of wood into liquid varnish. The metal plates for tinning are made of the best charcoal iron. All the oxide is first removed from them, then they are scoured bright, and kept in soft water ready to be dipped in the molten tin. The tin is melted in an iron pot over a fire, and its surface is covered with about four inches of molten tallow. The prepared plates are dipped in this, and left to steep for two or three days, when they are lifted out with tongs, and placed on a rack. The plates generally have a surplus quantity of tin adhering to them when taken out of the first pot; this is removed by dipping them into a pot of molten tallow and brushing. Great care and experience are required in all these manipulations in order to cover the plates smoothly, and not having too thick or too thin a coating of tin. The cover of such an oxidized metal as iron mixed with tin, like a varnish, is one of the most useful qualities which this metal possesses, and renders it better adapted for making various vessels, such as our common tinware, than any other metal. Nails, bridle bits, and many small articles of iron may be covered with tin by first scouring them to remove the oxide, then dipping them into the molten tin.

The metal is so ductile, that it can be rolled out into sheets of tin-foil as thin as writing paper. It is now much used for covering tobacco, for coarse gilding, for what is called "silvering looking glasses," and for bronzing powders. Peroxide of tin is used by jewellers as a polishing material; and fused with glass it forms a white opaque enamel. It is much used mixed with copper, and various other alloys of metal, such as gun-metal, the spindles for telescopes, the bearings for shafting, the bronze of statues, and was used by the ancients for spears, swords, and armor; and it is said, these were tempered by a process now lost to the arts.

Block tin is struck by dies into various vessels for drinking, such as cups, tea and coffee pots, and mixed with a little copper to give it hardness, it forms the beautiful Britannia metal, in the chemical arts, tin is dissolved in acids, such as nitric and muriatic, and forms a common mordant for some of the most brilliant colors printed on calicoes, and those dyed on wool and silk. The uses of tin are more various than those of any other metal, and it possesses very valuable properties. England is the greatest tin-producing country on the globe. She possesses the most abundant natural sources of this metal, and has long been the tin-plate manufacturer of the world. The produce of the metal in Cornwall is about 10,719 tons per annum, but it is used for so many purposes, that it is the source of a vast amount of wealth to Great Britain. We cover our houses with tin plate, and we manufacture vast quantities of it into vessels of every description for domestic use. We have iron mountains, and innumerable beds of copper and lead, we have the richest gold mines in this globe, and gold is everywhere to be found abundantly in our hills and valleys. No country exists so rich in useful minerals, but as yet no rich deposits of tin have been discovered. We have some faith in the existence of this metal in our rocks' and that it will yet

be obtained in considerable quantities. We hope that more attention will be devoted to prospecting for it, as it is more valuable than copper, and far more useful.

We pay \$4,700,000 annually for tin plate and sheets; \$23,000 for tin foil; \$724,000 for tin in pigs and bars, and \$44,000 for unspecified tin manufactures.

A GENTLEMAN calling one morning on a female friend, was answered by a country servant boy, that she was not at home. "Thank you to give her this," said he, handing a card. "Shall I go up and give it to her now, sir?" said the boy."

DISTINCTNESS OF DRESS.—The meeting of two gentlemen in a theatre lobby is a happy illustration of the confusion a similarity of dress occasions. Coming from different points, each in a great hurry, one addressed the other with, "Pray, are you the box-keeper?" "No," replied the other; "are you?"

An American who can recently returned from Europe told his friend, that he had been presented at the court there. "Did you see the queen there?" asked one. "Well, no, I didn't see her lady; but I seeed one of her friends—a judge yer see," he continued. "The Court I was presented at happened to be the Central Criminal Court."

The New York Dutchman says, that whoever wishes to get along in this world has only to take a few lessons of a hen chasing a grasshopper. With a long neck and sharp eye, take a few hurried steps, stop short, peep over, peep under, now to the left, now to the right, one flutter and a rush, and then you have him. That's the way it's done.

CREOSOTE FOR WARTS. Dr. Rainey, of St. Thomas' Hospital, London, has written an article to the *Lancet*, detailing the effects of creosote applied to warts. He applied it, freely to an obstinate wart, ex resence on the finger, then covered it over with a piece of sticking plaster. This course he pursued every three days for two weeks, when the wart was found to have disappeared leaving the part beneath it quite healthy.—This is certainly a remedy which can be easily applied by any person.

HORSE FLESH AS FOOD. The editor of the *Union Medical* gives an amusing account of a dinner to which he was recently invited in Paris, invited by M. Renault, Director of the great Veterinary School at Paris. The object proposed was a comparative test of the qualities of beef and horse flesh. The horse flesh was obtained from a fat animal twenty-three years of age. The editor speaks in glowing terms of horse-flesh soup, and it may be said, that a new article of food has been added to the *French Service*. The Tartar tribes eat horse flesh; the French are learning to be as civilized.

HINDOO WIDOWS.—A bill is at present before the Legislative Council to enable Hindoo widows marry without sacrificing their rights, and for legitimizing their children, who, in the eye of the English law, are at present considered bastards. At present a poor girl, scarcely released from the nursery, may become a widow before having seen her husband, and for the rest of her days is not only condemned to celibacy, but to slavery. Her hair immediately is cut off, she is stripped of her ornaments, and condemned to perform the most degrading drudgery about the house. The proposed law, which is purely permissive, and may be taken advantage of or neglected, as is thought fit, has been petitioned against by a considerable body of the wealthiest Hindoos in Calcutta, on the ground, that as practices prevailed amongst them three thousand years ago, such as cannibals might blush for, they ought still to be protected and persecuted.—The Hindoos of Bombay, in a spirit more befitting the age in which they live, and the character for good sense they have acquired, are now petitioning for the passing of the law, which we hope will be given effect to, without loss of time.

The Russian war is, by the lower classes in Austria, considered the cause of the unusual severity of the weather, and in support of this singular opinion, the following facts are adduced.—Almost in the coldest winters ever known in that country were that of 1799 and 1800 (Russian campaign under Suwaroff); that of 1812 (Moscow); that of 1830 (Poland); and the present winter.

Alexandria and Cairo now communicate with each other by railway and electric telegraph. By the former, the distance is eight hours.

IF THEY DON'T RUN, KISS 'EM.—At Boulogne, during the reception of Queen Victoria, a number of English Ladies, in their anxiety to see everything pressed with such force against the soldiers, who were keeping the line, that the latter were in some instances obliged to give way, and generally were, to use the expression of our policemen, "impeded in the execution of their duty." The officer in command, seeing the state of affairs, shouted out—"One roll of the drum; then, if they don't keep back, kiss them all."

At the first sound of the parchment, the English ladies took to flight. "If they had been French, says a Parisian journalist, "they would have remained to a woman."

UPLIGHT MEN.—We love upright men. Pull them this way and the other, and they only bend—they never break. Trip them down, and in a trice they are on their feet again. Bury them in the mud, and in a hour they would be out and bright. You cannot keep them down, you cannot destroy them. They are the salt of the earth. Who but they start any noble project? They build our cities, whitens the ocean with the sails, and blacken the heavens with the smoke of their cars. Look to them, young men, and catch the spark of their energy.

KEEP SOME OBJECT IN VIEW.—Every man, rich or poor, ought to have some absorbing purpose, some active engagement, to which his main energies are devoted. Not enjoyment, but duty, daily duty, must be the aim of each life. No man has a right to live upon this fair earth, to breathe its air, to consume its food, to enjoy the beauties, producing nothing in return. He has no right to enjoy the blessings of civilization, of society, and of civil liberty, without contributing earnest and self-denying labour of head, or heart, or hand, to the welfare of mankind. Certainly no man can be really and truly religious, who makes gratification, as distinct from self-denying exertion, the great object of life; and the idler puts pleasure exactly in the place of duty. This principle of life admitted, however manifested, will produce daily deterioration of character, until thoroughly abandoned. Every bodily appetite, every mental fancy, every momentary fashion, will clamour till indulged. The body will be pampered, appetite lead on to gluttony, wine to drunkenness, luxury to every evil indulgence, while the mind, excited only by novelties and enfeebled by the lack of continual exertion, sinks into utter vapidity and uselessness.

"Can you let me have twenty dollars this morning to purchase a bonnet, my dear?" said a lady to her husband one morning at breakfast.

"By-a-by, my love," answered my dear, but how can I buy and buy without the money?"

The husband handed over.

KEEP THE MOUTH SHUT DURING COLD WEATHER. In the *Journal of Health*, Dr. Hall advises every person who goes out in the open air from a warm apartment to keep the mouth shut while walking or riding. He says: "Before you leave the room, bundle up well—gloves, cloak, comforter—shut your mouth before you open the street door, and keep it resolutely closed until you have walked briskly for some ten minutes; then, if you keep on walking, or have reached your home, you may talk as much as you please. Not so doing, having a heart, once happy and young lies in the church-yard, that might have been young and happy still. But how? If you keep your mouth closed and walk rapidly, the air can only reach the lungs by a circuit of the nose and head, and becomes warmed before reaching the lungs, thus causing no derangement; but if you converse, large drafts of cold air dash directly in upon the lungs, chilling the whole frame almost instantly. The brisk walking throws the blood to the surface of the body, thus keeping up a vigorous circulation, making the cold in the nose, if it does get into a cold, get too quick after you get home. Neglect of these things brings sickness and premature death to multitudes every year."

A good newspaper is like a sensible and sound-hearted friend, whose appearance on one's threshold gladdens the mind with the promise of a pleasant and profitable hour.