

HOW POSTAGE STAMPS ARE MADE.

Uncle Sam Runs a Big Printing Establishment for Various Purposes.

It is not the least of the duties of the bureau of engraving and printing of the United States government to see to the renewing of the worn and defaced currency—greenbacks and national bank notes, says the Chicago Chronicle. All the year round huge printing presses are laboriously pounding away in the steel inclosed rooms of the treasury department, and ream after ream of paper is transferred into crisp sheets bearing the legends that make it current as money. It is estimated by the treasurer that during the year 1901 the 76,000,000 inhabitants of this country will require \$19 apiece in fresh printed money to carry them along. This represents a total of 107 1/2 million crisp new bills of various denominations. Of course, a large majority of these bills will be ones and twos, because those are the kinds mostly handled, and the average life of a \$1 note is not much over a year, while a \$2 note is good for less than twice that length of time.

Taking an average, every man, woman and child in the United States will use fifty-three postage stamps during the year 1901, forty of them being of the popular 2-cent denomination. The total number consumed will be over 4,000,000,000, and nearly 1,000,000,000 of these will be of the 1-cent variety. One person out of every ten will send a special delivery letter in the course of the twelvemonth.

Cuba, in 1901, will require about 16,000,000 ordinary stamps, with 100,000 "special deliveries," all of which will be turned out at Uncle Sam's money mill in Washington. The Philippines will use up 5,000,000 stamps, Porto Rico 1,600,000, and Guam 150,000. Of course, Guam, Porto Rico and the Philippines have no stamps of their own, properly speaking, but are supplied with the ordinary United States postage stamps, adapted simply by the addition of a word printed across the face of each one in unornamented black letters. Thus all Guam stamps have the word "Guam" marked on them, as if it were for cancellation, and the word "Philippines" makes our common stamps serviceable for carrying mail matter in Uncle Sam's new Oriental archipelago.

By and by our regular dependences will have stamps of their own, which will be printed in Washington, and adorned with special designs, just as is the case nowadays with the Cuban postage stamps, which are more artistic than any of ours, the treasury department having exerted its very best efforts in the production of the engraved plates.

The first process in the manufacture of stamps at the money mill is to count the sheets of blank paper, which are purchased by contract. This work is done by women, who, indeed, perform most of the labor in the bureau of engraving, simply because they have proved themselves more capable than men for business of this description. Each sheet is the proper size and shape to make 400 printed stamps, with a small margin. After they have been counted the sheets are moistened by laying wet rags between them at intervals of twenty, and the following morning, when the rags are removed, the sheets are ready for printing.

The press for printing postage stamps is a queer looking machine, half automatic in its action. It is quite a small affair, with four square steel plates, set horizontally, occupying the four sides of a horizontal square. These plates, always traveling around the four sides of the square at a moderate rate of speed, passing in turn beneath an ink roller. Each of them is engraved with the faces of 400 stamps, and, after being inked by the roller, goes under a mechanical rubber, which removes most of the ink. Then the

plate is cleaned of all the rest of the ink save what is in the grooved lines, by a man who rubs it with cloth and his bare hands, and finally it goes under a dry cloth-covered roller, which, a sheet of white paper being interposed, does the printing.

All of these processes are accomplished four times inside of half a minute. A girl supplies the fresh white sheets, as the plates come round to her in quick succession, and another girl takes them out, fresh printed, as they appear on the outside of the cloth-covered roller, piling them neatly as she does so. Then the sheets, so new and beautiful with their bright colored impressions, are carried to another room, where each of them is carefully inspected for defects. Torn or otherwise imperfect ones are rejected, but all fragments are carefully stuck together, so that each sheet may be accounted for. Each person in this department of the money mill is expected to examine 12,000 sheets in a day's work.

Now comes the gumming of the stamps, which is one of the most interesting steps in the whole process. Each sheet of 400 is taken in its turn and placed between a pair of delicate steel hands, which pass it beneath a roller that carries a solution of fine gum composed chiefly of dextrin. An endless belt carries the newly gummed sheet through a wooden box 100 feet in length, which is lined with coils of steam pipe, so that it comes out at the other end a few minutes later perfectly dry, being received thereupon by deft fingers of steel and laid accurately upon a pile of similar sheets.

There are eight or ten of these machines working in a great room together, so that not much time is required to gum a million stamps. As the sheets

come out at the further ends of the drying boxes they are more or less crinkled, owing to the contraction of the mucilage, but the crumple is removed and the sheets made perfectly smooth by rolling them, a score or more together, with the hands—a process which requires no little dexterity. If any portion of the sheet is imperfectly gummed it is rejected and such "rejects," as well as all torn or otherwise damaged stamps, are disposed of, after due counting, by burning them in a furnace, a special committee having charge of this work of destruction.

The gummed postage stamps before they are ready for use must be perforated, so as to be torn apart easily. This process is performed by machines with rows of small toothed wheels of brass set parallel to each other. These also are run by women, who pass each sheet beneath the wheels for the longitudinal perforations, after which they are handed over to other and similar machines to be perforated crosswise. Then at last they are finished and are counted once again before being packed in parcels for shipment to the postoffices.

Paper cash is ground out much the same way at the money mill, though the processes are less elaborate. The blank sheets (every one of which has to be accounted for) are dampened in the same manner and then the backs of the notes are printed on them. Though the work could be done just as well by machinery and much cheaper, it is all performed by hand presses, the engraved plate being taken off the press and re-linked for every impression simply because the influence of organized labor has been exerted to secure the retention of the old-fashioned method. The ink is applied to the plate with a rolling pin then a plate is polished with a rag and the bare hand, and finally it is passed, with a sheet of paper, under a roller. An automatic device registers, every piece of money printed, so that no dishonest workman would find it possible to run off a few bills on his own account. In fact, no printer in this department is allowed to leave the building unless he has a pass showing that his register tally correctly with the number of sheets given to him and afterward surrendered by him.

In the year 1901 Uncle Sam will pay about \$200,000 for the manufacture of postage stamps, \$500,000 for stamped envelopes and \$150,000 for postal cards. It costs him about \$2,000,000 a year to run the money mill, including the printing of all the paper cash, the postage stamps and the revenue stamps.

PRESERVE JOHN BROWN'S BIRTHPLACE

An effort is now being made to preserve the birthplace of John Brown, and properly mark the spot where, as a barefoot boy, he learned the trade of his father, a tanner, says the New York Herald. During this session of the Connecticut general assembly it will be attempted to have a sufficient amount of money appropriated to purchase the John Brown place and convert it into a historical landmark. Dwight C. Kilbourne, of Litchfield, and other members of the Litchfield County Historical Society are working to this end.

The place of John Brown's birth is within half a mile of the highest point of ground in Connecticut, about five miles west of the busy town of Torrington. The old house is situated on a high bluff, with no other house within a mile of it. The house is built, as most of the houses were at that time—1757—with a great stone chimney in the center of the building, which has its foundation in the cellar. The timbers used in the foundation, on which the big stones are laid, are of oak, twelve by fourteen inches square, and hewn out by hand.

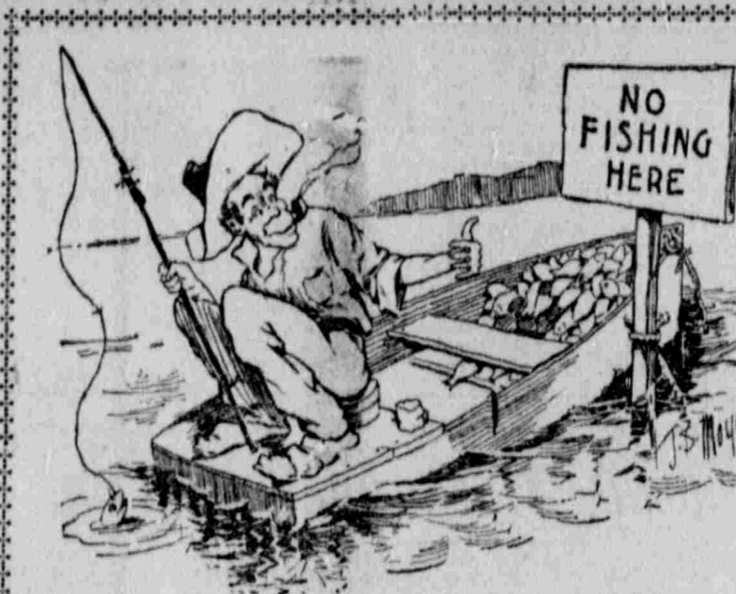
It was in the western front room that John Brown first saw the light of day. There are two windows in the room, one looking to the south and the other to the west. The first thing that impresses one on entering the room is the fireplace, before which John Brown as a boy sat and listened to the backlogs crackling in the blaze as the winter

winds howled through the sturdy oaks and started chestnut trees in the woods which surrounded two sides of the house. The fireplace is quite broken down owing to the visits of relic hunters, who have taken away stones and bricks for souvenirs.

There are four rooms down stairs and three above. The great kitchen has the big fireplace and old fashioned oven that most of the houses of that day had. A grown up man can stand in the kitchen fireplace and look up the chimney and see the clouds soar above in the blue sky. The old crane which once swung in the fireplace is gone. A Torrington gentleman who was building a fine modern house took that from its roofings, and it now ornaments the fireplace in his new house. Three years ago the house was shingled, and the old shingles were carefully gathered up by relic hunters and taken away. The present owner is William M. Cook, and he enters enthusiastically into the plan to place the old landmark under the care of the State.

PHASES AND CRAZES.

Nothing is more curious than the way in which we take up a new fashion or pursuit, and, throwing ourselves into it with an almost superhuman energy, carry it to a ridiculous extent and then drop it. By the time that the whole community has adopted the craze and it is in full swing, it suddenly collapses, and is only heard of as a forgotten incident in our national life.—Lady Jean in "The Gentlewoman."



A MISLEADING SIGN. "No fishing here. Sure, 'th' mon that made that sign couldn't have used th' right sort of bait."



1. Bruin—As I live, that fellow is drinking something good. I'll take it away from him.



2. Ah! but this is hot stuff, and a hot suit of clothes in the bargain.



3. Officer Bruin—Here! here! Come with me to the pound.



4. Judge Bruin—Drunk and disorderly, eh? Well, I'll give him 30 days.



SINCERITY. Flipper—Was young Teacher grateful for the loan of that fifty? Snipper—Oh! very; he said he never could repay me.

SCIENTIFIC MISCELLANY.

The affinity sometimes awakened between two substances by the presence of a mere trace of a third substance is the wonder of chemistry. Fresh examples of this have been given the French Academy by M. Gustave Le Lion, who has discovered that the addition of one part of magnesium in 14,000 changes mercury that it rapidly oxidizes in the air, and has the property of decomposing water at a low temperature. Magnesium with a trace of mercury, on the other hand, also has the striking new property of decomposing water. In both cases the acquired properties are lost as oxidation proceeds, but aluminum with a trace of mercury seems permanently altered. An extraordinarily small trace of mercury causes it to oxidize rapidly and to decompose water, the reaction continuing until the metal is consumed. Coupling with platinum in a voltaic cell, the electromotive force is more than doubled, the electrolyte with the modified metal being simply water. Another property of zinc is that of being readily acted on by acetic, nitric and sulphuric acids.

A curious fish of New Zealand has been brought to notice. It is called the kakawai by the Maories. It is somewhat minnow-like in appearance and 2 or 3 inches long, and it has the singular habit of lying torpid in the ground in summer. Its home is in the North Island, where the streams and pools of autumn and winter disappear in the hot season. A growth of skin or a dried gummy exudation seals up its head and gills, and is shed on its return to water. It is usually found that the disease is chiefly distributed under a foot or two of soil.

Military and naval men prove most subject to mental strain. A French investigator finds that 199 out of every 1,000 men in the army and navy become hopeless imbeciles, 155 to 177 among artists, professional and literary men; 66 among mechanics; and only 42 among commercial men.

Submarine photographs at a depth of 140 feet have been taken by M. Louis Boutan, who hopes to get others at 200 feet.

Bread-making by the Schweitzer system promises to become a national industry in France. The experimental factory at La Vilette, Paris, has been in operation nearly two years, and a late report shows that its product contains more nutritious nitrogenous substance than ordinary baker's bread and double the phosphates, while the price of 2 1/2 cents a pound gives a considerable saving. The model establishment is a three-story building of iron and stone about 515 feet long. It is on a canal, so that the wheat is brought by

boat, and from that is hoisted into the top of the mill, and turned into the cleaning and separating machinery. After freeing from foreign substances, pass each grain separately to a special appliance that splits it and separates the slight dust that it carries. It is composed of flat circular grids, grooved and granulate it into masses so separated that they do not crush wheat into a flour containing nutritive matter of the outer portion of the grain. The bran is separated and the flour, milled in a special year, is made in the mill. The flour is automatically passed into the skin of the kneading tubs, and the other end, finally falling upon the tables on the ground floor, is a special society plans to establish combination mills and bakeries in important French cities.

In the living world, species arise by gradual variation, species fixed only after many generations. The sudden development of a new species has been just recorded by Dr. De Vries, of Amsterdam, who notes the new plant five years ago in a garden of several thousand plants of evening primroses, a species of *Cochlearia Lamarckiana*, a species of *Linum catharticum*. From the seed parent were grown quite similar to the larger leaves than the other primroses, stouter knobby stem, fewer and larger flowers, and more abundant foliage.

Blistering has been found by Dr. Taylor a successful treatment for varicose veins. The restored veins remain to return to the various conditions when the treatment must be repeated. The remedy is especially useful for old people.

Green leaves under certain favorable conditions, have been found by Dr. Walter to respond electrically to light, with a difference in potential between reach 0.02 volt. The effect resembles electric excitation of nerves and human nerve cause a current from the resting to the active time, follow after a few seconds by a smaller current in the opposite direction. In the green leaves, the current flows from the light to the shaded half during illumination, becoming reversed for about five minutes after illumination. On repeating the experiment, a decrease of fatigue is shown, which disappears after an interval of an hour. Chlorophyll plays some part in the photoelectric action, as is proven by the fact that flower petals do not show such action.

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 - Nut meg graters..... 1c
 - Tea strainers..... 1c
 - STOVE LID LIFTERS..... 2c
 - Meat forks..... 2c
 - Dover Egg Beaters, best made..... 8c
 - 3 CHINA NEST EGGS..... 5c
 - Steel Fire Shovels..... 4c
 - Scrubbing Brushes..... 5c
 - Stove Brushes..... 9c
 - Can openers..... 2c
 - LAMP CHIMNEYS..... 4c
 - Opal Salt or Pepper Shakers..... 5c
 - Silver plated Pepper and Salt Shakers, worth 20c, for only..... 8c
 - 18 INCH GRANITE BASTING SPOONS..... 5c
 - The Rex Mouse Traps..... 3c
 - Enameled Stocking Darners..... 2c

- PIECE GOODS.**
- Best Indigo Blue Calico..... 5c
 - Apron Check Gingham..... 4c
 - READY-MADE GINGHAM APRONS..... 10c
 - Calicos from..... 3c up
 - Ladies' Dress Goods of all kinds at special bargain prices.
 - Good Black Satteen..... 8c up

- TIN AND GRANITWARE.**
- 10 QUART GALVANIZED BUCKETS..... 15c
 - 10-quart Tin Pails, worth 15c, for..... 12c
 - Tin Tea Kettles..... 14c
 - Tin Sauce Pans, 5c, 8c and..... 10c up
 - Wash Basins from..... 2c up
 - Galvanized Tubs, 40c..... 69c
 - SOLID COPPER NICKEL-PLATED TEA KETTLES..... \$1.15
 - Solid Copper Nickel Plated Coffee Pots, worth \$1.25, for only..... 85c
 - Tin Dinner Pails..... 25c
 - Come and see our Tin and Granitware.

- SHOES! SHOES!**
- Men's heavy oil grain Shoes..... \$1.25
 - Men's light weight Shoes..... 98c
 - Men's regular \$2.00 Shoes for..... \$1.40
 - \$2.50 Shoes for only..... \$1.98
 - Ladies' Shoes..... 75c up
 - Children's Shoes at all prices

- GENTS' FURNISHINGS.**
- Good Black and White Striped Shirts..... 25c
 - Extra heavy Black and White Twilled Shirts, double back and front, only..... 45c
 - Men's handkerchiefs..... 25c
 - Nice laundered Percalé with two collars, only..... 45c
 - Regular \$1.00 Percalé Shirts..... 65c
 - Men's good seamless black Socks..... 8c

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