

[For the Scientific American.]
PEANUTS AND PEANUT OIL.

BY H. E. COLTON.

As we write this title, a friend at our elbow asks, "What can you say about peanuts for the SCIENTIFIC AMERICAN? There can't be a thousand bushels sold in the city of New York." This is a great mistake; there is hardly an article of American production, of apparently so little note, that has grown so rapidly in importance as the peanut. Instead of 1,000 there are fully 550,000 bushels sold annually in the city of New York alone. Previous to 1860 the total product of the United States did not amount to more than 150,000 bushels, and of this total, fully five sixths were from North Carolina. Now North Carolina produces 125,000 bushels; Virginia, 300,000 bushels; Tennessee, 50,000 bushels; Georgia and South Carolina, each, 25,000 bushels; while from Africa come about 100,000 bushels a year.

These data are not mathematically correct, but are so approximately. In one week of the month of January, 1871, there were received at the port of New York 2,751 bushels. It is stated that there are now 300,000 bushels on the way to this port from Africa, but, as peace is likely to be made between France and Germany these will not land, but immediately re-ship to Marseilles.

What is done with all these peanuts? In this country they are eaten, and are sent all over the land, from Maine to Oregon, for this purpose. The demand is greater than the supply.

In France they are used for making oil, which is by many considered to be superior to the best olive oil for salad purposes. In the South, during the war, it was so used. The oil made was also used as a lubricator, and as a substitute for lard, while the cake residuum was ground, roasted, and sold as a substitute for coffee. At present peanuts are not used in this country for oil, the price being too high. Thus, it will be seen, that their uses are extensive and varied, and that the crop which now yields over \$2,250,000, and which did not add to the commerce of the country more than \$200,000 ten years ago, is at least not unworthy of note.

Peanuts vary with the soil upon which they are grown. The Virginia peanut has the thickest hull, and is usually the largest and finest looking; but it weighs only 24 pounds, and hardly yields a quart of oil, to the bushel. On the other hand, the African peanuts weigh 34 pounds, and yield 5 quarts of oil to the bushel. The Georgia peanuts weigh about 32 pounds, and yield one gallon of oil to the bushel, while the North Carolina peanuts weigh 28 and 30 pounds, and yield 3 quarts of oil. These last bring the highest price, though some handsome Virginia peanuts bring high rates as fancy lots.

The price, as we are informed by Messrs. Dibble, North & Co., who make a specialty of the article, ranges usually from \$2 to \$2.50 per bushel, though bad-looking lots sometimes fall below \$2.

The yield per acre averages 40 bushels, but frequently runs up to 60 bushels, especially near Wilmington, N. C. They are therefore a better crop at \$1.50 per bushel than cotton at 15 cents per pound. Much land, however, which will grow cotton well, will not grow peanuts to the same extent. It is by many considered best to be near the sea, and very essential to have lime in the soil, or to manure with marl.

As with many other products, peanuts have been materially enhanced in value, and their production economized by modern inventions. For years before the war, the old-fashioned oriental style of thrashing with a flail, and winnowing by throwing up in the air, was the universal custom. Both were overcome by the skill and talent of an ingenious mechanic of Wilmington, N. C., Mr. Thos. L. Colville, now deceased.

When the war commenced, the great demand for oil urged the necessity of using peanuts for this purpose; but how could the hull be gotten off? The same mechanic overcame this difficulty. A modest, retiring man, not anticipating the proportions the peanut trade has even now assumed, and hence depending on his making the machines to supply all the demands, he did not have either improvement patented, and others now reap the benefit of his skill.

Again, the Virginia peanuts, being grown in a rather clayey soil, had at first a very dark appearance. This, as well as their inferior grade, made them sell so low that, two years ago, many farmers lost money, but here Mr. John M. Realing came forward with a machine, by running through which, the peanuts are so much improved in color and appearance that they have been enhanced in value full fifty cents per bushel. I might also mention the handy little machine with which the street vendors roast peanuts, or take my reader down to the large establishment on Greenwich street or Peck Slip, where the glowing coke gives out its gentle and steady heat, while great cylinders, swung on large iron axles, are slowly revolving above the ruddy bed—dozens in a row—all turned by a steam engine. Here my friend might realize something of the vastness of the peanut business, and the extent of the edible capacity of our American nation, for one little article of, we may say, fancy diet.

But who eats them? Well, just ask the owner of that little sign, "PEANUTS—FRESH ROASTED EVERY 5 MINUTES," and he will tell you, everybody, from the wealthy banker to the homeless newsboy; and that his own sales are over a thousand bushels a year. We even hear from æsthetic Boston that they have taken their place among other nuts in the refectations supplied to fashionable entertainments; who then will dare gainsay their right to aristocratic, or to commercial, importance?

How the News was Sent to Paris.

Attempts to establish a ready communication between the beleaguered inhabitants of Paris and their relatives and

friends beyond the German lines have given rise to many contrivances, which are not unlikely to make a new era, in the history both of aeronautics and photography. Among them may be mentioned the ingenious device by which the matter of two whole pages of the *Times* has been transmitted from London to Paris. This has been accomplished by photography. Those pages of the paper which contained communications to relatives in Paris were photographed with great care by the London Stereoscopic and Photographic Company on pieces of thin and almost transparent paper, about an inch and a half in length by an inch in width. On these impressions there could be seen by the naked eye only two legible words, *The Times*, and six narrow brown bands representing the six columns of printed matter forming a page of the newspaper. Under the microscope, however, the brown spaces became legible, and every line of the newspaper was found to have been distinctly copied, and with the greatest clearness. The photographs were sent to Bordeaux, for the transmission thence by carrier pigeon to Paris. When received there, they were magnified, by the aid of the magic lantern, to a large size, and thrown upon a screen. A staff of clerks immediately transcribed the messages, and sent them off to the places indicated by the advertisers. The success of this experiment gives rise to the hope that the new art of compressing printed matter into a small compass will not stop here. If a page of the *Times* can be compressed into a space little larger than that occupied by a postage stamp, the matter of an octavo volume might be made to cover not more than two of its own pages, and a library could be reduced to the dimensions of the smallest prayer book. What a relief it would be to the learned persons who frequent the library of the British Museum if, instead of having to make fatiguing journeys from letter A to letter B of the ponderous catalogue of books, they had its many hundred volumes reduced to a space a yard square, over which a microscope could be hurriedly passed! Such suggestions are now occupying the thoughts of photographers.—*London Times*,

DYERS' RECIPES.

From Haerick's Secrets of Dyeing.

BLUE PURPLE.—A curious purple was very fashionable about twenty-five years ago. 100 pounds of wool were first dipped a light blue in the vat, and well rinsed. Then take a stone pot, put in 3 pounds of half-refined tartar, 3 pounds of feathered tin, 5 pounds of blue vitriol, and 20 pounds of muriatic acid; heat all in a sand bath until dissolved.

From this mordant take 10 pounds in a suitable kettle; add 5 pounds half-refined tartar to it, stir it well, and enter the wool at 170° Fah.; let it boil for one hour; take it out, cool, and let it lay for twenty-four hours. Then boil out 20 pounds of good logwood for three quarters of an hour in fresh water; cool off the kettle to 150° Fah., enter the wool, and handle it well for half an hour, then heat it up to 185° Fah., but let it not boil; let it go for one hour more, when it will be a dark purple. This color stands the sun remarkably well, perhaps owing to the fact that there is not any alum or sulphuric acid used, except that contained in the blue vitriol.

BLUE PURPLE, FAST COLOR.—100 pounds of wool are first dipped in the blue vat to a light shade, then boiled in a solution of 15 pounds of alum and 3 pounds of half-refined tartar, for one hour and a half; the wool taken out, cooled, and let stand twenty-four hours. Then boil in fresh water 8 pounds of powdered cochineal for a few minutes; cool the kettle to 170° Fah.; handle the prepared wool in this for one hour, in which time let it boil for three quarters of an hour, when it is ready to cool, rinse, and dry. By coloring first with cochineal, as aforesaid, and finishing in the blue vat, the fast purple or dahlia, so much admired in German broadcloths, will be produced. Tin acids must not be used in this color.

LOGWOOD BLUE.—There are many ways to color that, and the dyer must choose for himself which is the best for his goods, as one way is preferable for some kinds of fabric to the other.

THE OLD-FASHIONED LOGWOOD BLUE.—To 100 pounds of cloth or wool dissolve 15 pounds of alum, 2 pounds of half-refined tartar, and 3 pounds of blue vitriol; enter the fabric, and let it boil for one hour; take it out, cool as usual. Then boil in fresh water for twenty minutes 10 pounds of good logwood in a bag or otherwise, cool the dye to 170° Fah., and enter the fabric. Handle it well for half an hour, during which time raise the heat nearly to boiling, then take it out and cool; cool the dye to 136° Fah.; add 5 pounds of pearl-ash, or 4 pails of urine. Enter the goods again, and handle for half an hour, when they will be a fine blue. Soda ought never to be used, as it makes a dull color. Rinse and dry. This color is suitable for blue-mixed hosiery.

CHROME BLUE.—100 pounds of wool are boiled for one hour in a solution of 3 pounds of bichromate of potash, 6 pounds of alum, 1 pound of half-refined tartar; then it is taken out, cooled, and rinsed. Boil 6 pounds of good logwood in a bag for half an hour in fresh water, add 3 pounds of cudbear, well moistened and dissolved. Cool the dye to 180° Fah. Enter the prepared wool, and handle it for three quarters of an hour; bring it to a boil in this time. This color ought to be always left a shade lighter when finished, as all chrome colors darken in drying.

Scientific and Theological Aspect of the Hog.

A writer in the *Chicago Post* thus expatiates on the hog: The hog has been in dispute a long time, at least ever since he began to play his part in the ancient religions. It is fashionable to ridicule and denounce him, to call him a filthy brute, and to insist that he is the dire author of

leprosy, consumption, cancer, scrofula, and the most disgusting diseases that afflict humanity. This is the teaching of prejudice, not of science.

The hog outlives all hostility, and laughs, so to speak, at the success of his slanderers. Still is the reeking roast pig the sacrifice of many a dinner table, and still is the rural ceiling festooned with the savory sausage, and the smoke house fragrant with ham. We deal with facts, not sentiment. The hog is a true cosmopolite—a citizen of the world. He increases and multiplies, and inherits every part of the habitable globe. He is as ubiquitous as the bat. He does not stand in high repute for his manners, but he is most accommodating, thriving with equal content in the sty of the rich and the kitchen of the indigent. He wallows sometimes, but naturalists tell us he does this for the sake of cleanliness, which is next to godliness—for the same reason that the Pacific Islanders grease themselves. Among his quaint peculiarities are his grunt of satisfaction and his squeal of remonstrance and reproach. He should never be fed till he stops his squealing; it is the approved method of breaking him of the habit.

Homer, in his "Odyssey," honored the swine keeper with the confidence of Ulysses, and why not? The hog, called stupid, is really one of the most enterprising and sagacious of animals. The gamekeeper of Sir Henry Milway actually broke a black sow to hunt game in the woods; and she ran in the hunt with wonderful success. She would track game, back and stand, and point partridges, pheasants, snipes, and rabbits as skilfully as a bred pointer. She would bound in response to a whistle, and would wag her head and squeal with delight on being shown a gun.

The Babylonian Talmud says: "Cursed be he that breedeth hogs;" and the history of the Maccabees tells us that the scribe Eleazer walked straight to the tortures of persecution rather than eat a slice of spare rib, heroically preferring the martyr's stake to the pork steak. This animal has been under the ban of many religions. The Mohammedans learned from the Jews, as the Jews had previously learned from the Egyptians, to hate him because he perversely declined to "chew the cud;" but he still manages to masticate and digest considerable pottage in the course of a year.

The hog is the product of nature's most economical thought. There is no part that cannot be utilized. His flesh, fat, bristles, hair, hoofs, and bones are all turned to account. "The divisions of his unctuous body," says Apicius, "are as familiar as the division of the earth. His ears and feet go to souse; his brains are a choice dish for the epicure. His tail has for ages been claimed by successive generations of children as their particular property. Tradition points out how to appropriate it; roast on the coals, take in the fingers, and eat without salt."

The hog is the staff of life, the arch enemy of famine, the poor man's best friend. Moreover, in his earlier days, he is strikingly playful, frisky, cunning, and graceful—as much more interesting than a human infant of the same age as the latter is more interesting than so much putty. In adult pignood, he is omnivorous and self-reliant, bold and expeditionary, and he breeds faster and keeps cheaper than any other domestic animal.

America is pre-eminently the home of the hog; he is a legical deduction from Indian corn. He was introduced into Virginia in 1600, and here he multiplied so rapidly that the colonists were compelled to palisade Jamestown—high, to keep out the Indians; close, to keep out the hogs. Mrs. Hog can produce ten to twenty at a birth, as often as twice a year. The descendants of a single pair—allowing six young for a litter—would amount to six million in fifty years. The gratitude of the country is due to Cincinnati, for that, by assiduous harvesting, she keeps down the inundation which constantly threatens to overwhelm us in an uncommon ruin.

Product of Coal.

A pound of coal may be regarded as equivalent to a day's labor of a man; hence 300 pounds will represent the labor of a man for a year. It has been estimated that 20,000,000 tons of the annual product of Great Britain is devoted to the development of motive power, and that this is equivalent to the labor of 133,000,000 men. The area of the coal fields of the carboniferous age, lying within the limits of the United States, has been estimated at 150,000 square miles. The area of Ohio is not less than 10,000 square miles, or quite equal to that possessed by Great Britain, and far in excess of that of any other European nation.

The annual coal production of Great Britain is over 100,000,000 tons; in Ohio it is now about 3,000,000 tons.

MICROSCOPICAL WRITING.—A machine is now on exhibition in London, Eng., with which a writer, using a pen in the usual manner, can, at the same time, produce a duplicate so small as to be invisible to the naked eye, yet so distinct that a microscope will reveal every line and dot. A most useful application of the apparatus will be for the prevention of forgery, as private marks can be made, on notes and securities, legible under microscopic power, but which no imitator could see or even suspect the presence of. The inventor, a Mr. Peters, states that the entire contents of the Bible can, with the help of this machine, be written twenty-two times in the space of a square inch.

COST OF LIVING ON THE PACIFIC COAST.—A comparison between bills of fare at respectable but not extravagant restaurants and hotels, in Boston and San Francisco, shows that living is seventy per cent cheaper in the latter city. There is nothing to justify the high prices which are maintained everywhere along the Eastern coast, and which have undergone scarcely any diminution since the war and the ending of the gold mania.