QUEER FACTS ABOUT GOLD.

IT MAY BE IN THE WATER WE DRINK AND THE AIR WE BREATHE.

Vast Wealth That Has Floated Away Into the Sea—$10 the Cost of Recovering a Cent's Worth of Gold from Sea Water—Origin of Deposits—Freaks of Nature's Chemistry.

The recent collapse of a company organized for the purpose of extracting gold from sea water has drawn attention to a very interesting question. Many people have doubtless smiled at what they supposed to be the credulity which could imagine such a process possible; but, as a matter of fact, it is, though the expense would far exceed any possible return.

It has been demonstrated by many experiments that sea water carries gold, but it has not been proved that all sea water carries gold in equal quantities. In fact, it has been found by experiments that sea water on the Pacific coast carries more gold in some localities than it does in others. All the experiments so far with sea water have been made with water taken from the surf, which does not prove that water taken from mid-ocean would carry the same quantity of gold. Books tell us that the chloride of gold is never found in nature; that all gold in its natural condition is in a metallic state; yet all agree in saying that the sea is the great receptacle for all mineral salts. If this is true, it is natural to conclude that it contains the soluble salts of gold. For, although soluble gold may never have been found in nature, gold is found in nature in such a condition as makes it subject to those natural laws which govern other minerals that are soluble. Prof. Sanstadt, a high authority, found, from careful experiments with the sea water of Ramsey Bay, Isle of Man, that sea water taken from the surf in that locality contains a little less than a grain of gold to the ton. He does not tell us whether it was the soluble salts of gold he found or metallic gold. Fresh water, as well as sea water contains gold. In fact, the water in all the rivers which drain regions where mining is carried on contains more or less gold. Careful experiments with the water from many wet free gold crushing mills in California have demonstrated that fully 5 per cent. of the gold contained in the ore, after passing over all the gold saving appliances, is held in suspension in the water and lost. Fully 25 per cent. of all the gold contained in auriferous gravel worked by hydraulic miners is lost in the same way. The slickens, as miners call the waste material which has filled the beds of the rivers and overflowed the valley lands many miles from the hydraulic mines, all contains gold in much greater quantities than sea water does.

In making experiments in Placer county, Cal., with a wet crushing mill, with a view to saving a larger percentage of the gold, I carefully sampled and assayed the ore. After passing through the mill the tailings were carefully compounded. At the end of a two weeks' run the mill was cleaned up. I found that I had saved 65 per cent. of the free gold in the battery and on the copper plates. After sampling and assaying the tailings and concentrates I found a loss of fully 10 per cent. that could not be accounted for. Then as the water which contained the pulp came from the mill I conducted it into a tank, giving all the pulp that did not float time to settle. A sample of this water, analyzed by Kustel in San Francisco, showed that it contained fully 5 per cent. of the assay value of the ore. This was assuming that I had used ten tons of water to one ton of ore, which was about the correct proportion. Further, to illustrate the manner in which water will hold metallic gold in suspension, take a nugget of pure gold and rub it on a clean whetstone until there has been rubbed off of the nugget one pennyweight of the gold, which will adhere to the stone. Take a quart of clear water in a porcelain dish and wash every color of the gold from the stone into the water and you will see scarcely any change in the color of the water. Agitate the water and every ounce of it will be found to contain an equal proportion of the gold. A skilful chemist can take this gold out of the water and give it to you in a gold button, without any except a mechanical loss. Take this same pennyweight of gold and dissolve it with aqua regia and form the chloride of gold. If this is dissolved in 100 gallons of clear water, each drop of the water will contain an equal portion of the gold, which can again be brought back into a metallic state. It is therefore plainly to be seen that the gold found in sea water can be in the form of a chloride or metallic gold.

To illustrate still further the manner in which gold will float in water or in air, take the telluride of gold, which has been found to contain as high as 57 per cent. of pure gold without showing a trace of metallic gold under the most powerful glass. Pulverize it until it will pass through a 120-mesh screen and you will find that a very large percentage of it will float in water. Subject it to heat in an open smelting furnace and the tellurium will fuse at about 850 degrees. Continue to raise the temperature and you will find that before a temperature at which gold will fuse has been reached the greater portion of the gold will pass off with the tellurium in a yellow vapor. The smelters in Colorado, after handling this class of ore in large quantities for many years, finally made the discovery that they had been losing from 5 to 10 per cent. of the gold, which had passed off in the vapors from the smelters. Many of the large smelters have constructed flues on the ground; some of them are a quarter of a mile in length. In these flues there are large chambers, in which the fumes are condensed and which are swept out once a month. In this way they are able to save a large percentage of the gold which they had been losing, amounting in Colorado alone to many millions of dollars. The air we breathe and the water we drink may, under certain conditions, contain gold.

Some eminent geologists have advanced the theory that gold originated in the waters of the sea and has been introduced into the veins and cavities of the rocks in the form of silicate, but they do not tell us how the gold was transmitted from the sea to the quartz. The waters of the ocean are no more the mother of gold than the quartz veins are the mother of pearl or any other organic matter of which the sea is productive. The waters of the oceans, together with the erosions of the atmosphere, have in past ages wasted away continents. Any gold found in sea water, no matter in what condition or form it is found, has been supplied from the decomposition of rocks in which it was originally formed.

Many of the old school geologists still adhere to the igneous theory of the formation of minerals. To sustain this theory they tell us that the heat gradually increases with the depth attained in the mines. During the last thirty years explorations in mines have proved that depth has but little, if anything, to do with their temperature. Heat is produced by chemical action which can take place as well at a depth of 100 feet as it can at a depth of 1,000 feet. The deepest workings of any mine in the world are in the Calumet and Hecla mines of Michigan, which are now down 5,000 feet. There has been little or no change in the temperature from the 2,000 to the 5,000 foot level. In the Chollar-Norcross-Savage consolidation shaft on the Comstock the water on the 1,200-foot level had a temperature of [illegible]; from the 1,200 to the 3,200 foot level there was no perceptible change.

We have only three primary divisions of matter—solids, fluids and gases. There is no independent igneous element. Lava is not the result of the working of such an element, but of decomposition. In all mountain ranges throughout the world there are vast deposits of sulphites, mostly in the state of auriferous pyrites. When water, which is composed of oxygen and hydrogen gases, is brought in contact with these ores, the oxygen unites with the sulphur of the mineral and forms sulphuric acid and various other compounds. When this violent chemical action takes place the water becomes heated and the hydrogen, being liberated, in its efforts to escape often forces the heated water, at intervals, many feet above the surface, as may be seen at Steamboat Springs, Nev., and other places.

We find no evidence to support the theory that minerals are formed by igneous heat. But experiments which have been made in the great laboratory of nature during the past thirty years have convinced me of the fact that all minerals in their natural state, together with all other substances with which they are combined, are in a solvent condition, and that the different metals are produced from the different rocks in which they are found with as much certainty as the different soils under different climatic influences produce the different fruits and vegetables. The processes in nature which cause the blade of grass to grow cause all vegetation to grow; and the same principle applies to the mineral kingdom. The exact manner in which minerals are formed in nature is one of her impenetrable secrets, as incomprehensible to the human mind as is the exact manner in which the electric fluids are formed or set free by the digestion of food which is taken into the human stomach and carried or impelled by some unknown force to every part of the system. It is scarcely necessary to advance arguments proving that minerals in their natural condition are in a solvent state. Everything in nature must have been a solvent before it could become a solid.

Electricity being the only element or substance over which we have any control that enables us to transmit and redeposit metals from a solvent to a crystalline state, it is natural to conclude that it is the force which controls the reproduction of everything. The explorations and the findings made by American miners since the discovery of gold in California furnish incontestable evidence that all metals are continually being formed from the solvent salts of the rocks in place. In one section of the petrified forest belt that is found in New Mexico, where copper predominated, all the petrified trees were found to be copper ore. Some of the ore carried as high as 40 per cent. in copper, with traces of gold and silver and all the other substances that were found in the copper taken from the veins in place in the same locality. A smelter was at one time constructed to smelt these ores. These forest trees had evidently been at one time under water, and the silicate, which contained the silica and all the metals in a solvent condition, had percolated from the rocks in place. The wood formed a nucleus of attraction. As the wood decayed and passed into some other form the metals, controlled by the currents, came in and took its place. In other sections of this petrified forest belt, where iron predominated in the rocks, iron was found to predominate in the petrified wood. In others, again, silica predominated.

I was once called to examine a copper mine in Arizona. In a tunnel a winze had been sunk about three feet below the level of the tunnel. In the bottom of this winze I found what seemed to be the skin of a rattlesnake, around which native copper had formed until it looked like a perfect copper snake. The water was strongly impregnated with copper in solution. This only went to show that iron was not the only substance that would precipitate copper from the solvent to the solid.

In Leeds, a silver mining district in Utah, a great number of specimens have been found that to all appearances were petrified wood, showing the grain of the wood, and in all other respects resembling petrified wood; but they were found to be pure horn silver. The wood had passed away and the silver in solution, like the copper, had come in and taken its place. The proportion of silver and the chlorine it contained was found to be about the same as the pure horn silver taken from the limestone rocks—25 per cent. of chlorine to 75 per cent. of silver. A shell taken from a mine in Utah, which resembled a clam shell, was found to be filled with metal which proved to be 54 per cent. silver of the value of brittle ore.

I once examined a mine in Mexico that had been mined out to a depth of 200 feet. One hundred feet of the fissure from which the ore had been taken had remained under water for over 100 years. When the water had been pumped out I found incrustations on the walls half an inch thick in places containing the same minerals which were in the original ore. In this same mine a number of specimens of native silver were found. Some of them had formed on the timber. If this open fissure had been allowed to remain under water for 10,000 years there is but little doubt that it would have been found filled with ore similar to that mined out. In the crevices of a piece of petrified wood taken from the Cunningham gravel mine in New Mexico crystallized gold can be seen. This gold formed on the wood after the wood was deposited in the gravel.

It is true that gold, silver and copper are being formed on wood, a substance which cannot resist intense heat. It is equally true that all metals are formed in the same way, as nature does not have two ways of doing one thing. Gold is never found in its natural condition in nature in paying quantities except in the fissures or in the cavities of the massive rocks in place in combination with silica, which is quartz. The same rocks will be found to produce a great variety of minerals each after its own kind, in the same way that the same soil will produce an endless variety of plants and fruits. All gold found in the soil and known as placer gold is gold that has been freed by the decomposition of the quartz caused by erosion. When we look at nuggets of gold, called wash gold, mined from the placers, we are apt to think that such metals must have been produced by some intense igneous heat instead of being worn smooth by the action of the water and grinding between the rocks. If, however, a piece of quartz carrying free gold is examined through a glass it will be seen that the smallest, as well as the largest, piece of free gold which it contains is irregular and presents a rough surface, identical with the surface found on gold formed in the humid way by electro-magnetic action. Take any number of these pieces of gold as they come from the quartz and attempt to grind them so that they will be smooth and will correspond in shape to those taken from the placers, and you will find that you have worn away fully one-half of the gold in the operation. It has been estimated that fully as much gold has been worn away in this manner by natural erosion as has ever been mined from the placers. When we consider that seven-tenths of all the gold that has been mined has been taken from the placers, we get some idea of the billions of dollars worth of gold which have been wasted in this way, to say nothing of the billions worn away from the placer gold which has never been mined. This gold is still in existence. It has not been destroyed. It is in the same condition that the gold rubbed off on the whetstone was in. It is taken up by the water, carried down the streams and more or less of it finds its way to the ocean. This accounts in part for the presence of float gold in the sea water and on the seacoasts.

Near the mouth of the Klamath River, on the Pacific coast, there is for a distance of two miles along the beach a bluff of auriferous gravel. In places the bluff is from forty to fifty feet high and the gravel all carries more or less gold. The surf has been wearing the bluff away for ages, freeing the gold until the beach sands in the vicinity of these bluffs have become very rich in gold and have been worked by miners for many years. There are large deposits of these sands that carry from $1 to $5 to the ton in value of float gold. A great deal of time and money have been spent in trying to find some method to save this float gold, but without success, because of the fact that the gold is lighter than the sand, and when brought into contact with water will float off.

In making experiments with a view to saving this float gold I made a test of the water taken from the surf. I filled a forty-gallon cask with the surf water, adding to it a solution of alum water, and allowed it to stand forty-eight hours. The water was then carefully drained off with the exception of one gallon. An analysis of this gallon showed that the sea water at this point contained one and a half grains of gold to every ton of water. The same experiment was made on the water taken from the surf near the Cliff House at San Francisco. That showed less than one-half grain of gold to a ton of water. These tests proved that the water of the sea does not contain a certain uniform amount of gold. I fully satisfied myself that the gold I found was float gold. It may have contained gold in some other form which I did not save by this crude process. I also found by experimenting that there is a great difference in the value of the sea sands in the different localities along the coast. The sand hills on which San Francisco is built contain gold and silver to the value of about 40 cents to the ton. On being concentrated it yields 10 per cent. of magnetic iron sand that assays on the average about $2.[illegible] a ton in gold and silver—75 per cent. silver and 25 per cent. gold, and it carries fully 20 cents a ton in value in float gold that cannot be saved by concentration. In other localities these concentrated sands assayed much higher in gold and showed a larger amount of float gold. The assays in silver were about the same.

The beach sands in the vicinity of the Klamath Bluffs were found to be much richer in both float and fixed gold than were the sands in any other locality. This, of course, is accounted for by the fact that the surf has, for ages, been freeing the gold from the gravel worn from the bluffs. Experiments made in different localities along the coast show that a ton of beach sand contains, on an average, 20 cents in float gold and 10 cents in fixed gold, which is the name given to the gold found in magnetic iron sands. Assuming that all the beach sands from Oregon to San Diego carry 30 cents a ton in gold, it is evident that these sands contain more gold than has yet been mined in the world. Likewise, if the ocean contains only one-fifth of a grain of gold to every ton of water, it still contains many times more gold than has ever been mined.

But, as I have said earlier in this article, the fact that the water near the coast, particularly a gold-bearing coast, contains gold does not establish the fact that the whole ocean contains an equal amount. Even if this were the case, any scheme for removing the gold with financial profit must be a failure, as the outlay would far exceed the output.

The process of extracting solvent gold from water is one of the most difficult and costly known to chemistry; a chemist charges from $15 to $20 to analyze one gallon of water. Four cents' worth of gold to a ton of water is the highest average that has been asserted for sea water; in reality sea water does not average more than one cent to a ton. To extract this one cent's worth of gold would require at the lowest calculation an expenditure of $10.

If there are men who feel that for the good of science one cent in float gold is ample return for the $10 in minted gold, I can recommend to them no better investment than salt water gold mining. On the other hand, those people who take a mercenary view of the subject would do well to confine their mining to dry land.

STORY OF THE PURPLE PEARL.

Trees Growing Up Through Capt. Clark's Craft Thirteen Miles from the Sea.

New Haven, Jan. 28.—Capt. David Clark, a native of Litchfield county and now a resident of the charcoal burning wilds of North Madison, finds himself after twenty years of intermittent labor the perpetrator of a Robinson Crusoe act. He has built a boat so far from salt water that he is unable to launch her. It is through no fault of his mechanical calculations that he is unable to get his vessel's keel into the ocean. She stands on her blocks thirteen miles from the shore of Long Island Sound and Capt. Clark thinks he could readily launch her but for the fact that his money has given out. So the forest trees are growing up among her weather-beaten ribs to-day and she is falling into decay. The Captain is now a wrinkled but active old man. In his youth he was a sailor. Many of his early years were spent in the West Indies trade and he knows of a harbor in some obscure corner of the Gulf of Mexico, just where he will not tell, where pearl oysters are to be dredged. In 1878 an uncle of his died in this city and left him about $5,000, and he immediately set about building himself a small schooner in which to go dredging for these pearls. Like other people in this world, he has his peculiarities; and one of them was the construction of the schooner in the North Madison woods where prying eyes and troublesome questions would not disturb him, where ship timber was plenty and cheap and where his little fortune would enable him to put the craft afloat complete, a secret to every one but himself. The old skipper is also a bit superstitious. His principal trouble in this life, the loss of his money, has, he says, come about through meeting a woman and also through lending salt. Hence he has no use for either woman or salt nowadays.

In laying down his vessel Capt. Clark hewed out keel timbers for a craft thirty-five feet long. He calculated her for deep water voyaging, and nothing but the best of Connecticut white oak from the driest of Connecticut hillsides was put into her. And not a knee nor a brace was used that was without the stoutest natural crook, so dear to the Yankee shipbuilder's heart.

"Her timber is tougher'n a biled owl, an' there's no swamp wood in her to rot right out, you may depend," said the old man in talking about his pet yesterday.

As he was a novice in the art of swinging the broadaxe, the work of getting out the frame of his ship was necessarily slow, and it was three years before he had all of the timbers in place. Then he let them stand while he hewed out the planks for her sides. These were also of the same flinty oak, and it was three years more before they were done. They still lie in moss-grown piles in the woods about the frame of the good schooner Purple Pearl, for that is the name of the craft. By the time the planks were ready the frame was very well seasoned, which is a condition desired by old shipbuilders before they proceed to put the planking on. Then came the trouble. Capt. Clark tells why he never planked up the Purple Pearl and why chestnut and maple saplings are now rearing their heads uninterruptedly among the timbers, in this way:

"I was perfectly happy up here in the woods up to the time I got the plank ready to put on. Every time I struck in my broadaxe the chips flew like rain, and every time the axe rang out it seemed to say to me: 'You'll be a rich man, a rich man, a rich man!' One hot day in August, it was on a Monday, I was hewing on a piece of white oak that was harder'n Pharaoh's heart, to make a garboard, an' I was a-building air castles uncommonly high, calculating what I would do with all my money when I got a good load of them 'ere pearls. Before that day I never had nothing but the kindest of feeling for all the human race, especially for the fair sex. I figured that two years of hard work at pearl dredging would give me at least a million an' a half of dollars. Then I was going to get married and build a yacht and go to Madagascar to prospect for the purple pearls, which, I believe, are to be found only on that island.

"That's what I was a-thinking that Monday morning when I knocked off work to go down to the spring yonder to get a drink. On the way who should I meet but a colored woman a-coming up the path with a pail of water for a party of picnickers over in the pine woods. Now, you know its the worst kind of luck to meet a woman the first thing a-Monday morning. And a colored woman, especially. If you don't dodge her, bad luck will follow you all the rest of the week. Always get out of her way if you can. If you can't, stop her and ask her for a pin and if she gives it to you the spell is broken and your good luck will continue. I should have got out of the way of the woman, but my castle-building had made me careless, and I barely turned out, but gave her only half the path as we passed. She went on and I lost sight of her.

"Well, sir, inside of a week the bad luck began that has resulted in ruining my whole prospects and left the Purple Pearl up here in the woods to rot. On a Thursday afternoon one of my neighbors, who was poorer'n Job's turkey, come to my shanty and wanted to borrow some table salt. Now, young man, I don't know whether you are superstitious or not, but if you are prosperous in your affairs in this world don't ever lend salt to any one. Never! My father had warned me of this, but I was so full of my boat hobbies that I forgot all about it and loaned the salt. In a few days the first blow fell. A savings bank in New Haven failed and with it went two-thirds of all my money, and ill luck has followed me steadily ever since, until last fall I lost the last cent of the money I had depended on to help me put the Purple Pearl into commission.

"I tell ye such things make a changed man of a fellow. Here I am a-burning charcoal for a living when I might have been as rich as Crœsus. Do you wonder that I hate the sight of a woman now? No, you don't. Would you eat salt if you was me? No, I know darn well you wouldn't."

VERY RARE OLD MADEIRA.

FAMOUS VINTAGES HELD BY SOUTH CAROLINA FAMILIES.

Earthquake Wine 150 Years Old—The Limit of Excellence Reached Generally in Half a Century—Art of Maturing Madeira—The Charleston Jockey Club Wines.

Charleston, S. C., Jan. 27.—The following extract from the wine list of a New York restaurant stirs genial memories in the hearts of the old Charleston people, and the mere question of its accuracy has evoked numberless anecdotes from those who remember the good old days of mahogany and Madeira and the life of leisure of which these things may be in a way regarded as the fine and typical flower:

MADEIRA—257, CHARLESTON JOCKEY CLUB MADEIRA, $15 PER BOTTLE.

This Madeira was buried by the above-named club at the time of Gen. Sherman's march to the sea and bought after the war by one of the Barings of London, who sold it to Messrs. Sam Ward and Keene. These gentlemen presented it to President Chester A. Arthur in 1881. Mr. —— bought it from the executor of the Arthur estate in 1887 and sold it the next day to a relative of President Arthur, from whom he has now purchased it back again. Sam Ward's letter to the President is in Mr. ——'s possession. The wine is over sixty years old.

Several Charleston gentlemen to whom this statement was shown believe it to contain inaccuracies, but before entering upon these doubtful points it is of interest to know why Charleston Jockey Club Madeira should be thus used as a name to conjure with. The South Carolina Jockey Club was an association formed in the last century by gentlemen who owned fine horses and raced them annually for a cap or a whip or a piece of plate, or even for such prizes as a finely embroidered jacket. There was a great racecourse here more than a hundred years ago, and the Jockey Club had charge of all the meetings. Until 1792 the Jockey Club races took place at the Newmarket course. After that they were held at the Washington course. The period about the year 1786 was considered the golden time of racing in South Carolina. Race week in Charleston began then to be a sort of festival for the whole State. The men attended the races in clothes of latest London style and make, and the women were richly dressed. Courts adjourned, schools gave holidays and the leading business houses were closed, while clergymen and Judges and all the dignitaries of the town hastened to lend their countenance to the animated scene. On Friday of race week the Jockey Club ball was given and the cream of the society of the State was present in all its splendor. Thus it was that the club began to have its rich living and its wines, and in time the things to drink at the club grew famous.

As far back as 1763 it was recorded of Charleston that "Madeira wine and punch are the common drink of the inhabitants," but it was not until the present century that the descendants of the early inhabitants began to realize that the pipes of Madeira purchased by their ancestors had gained a bouquet and flavor quite remarkable, and that their wine, once the "common drink" of the province, had become a rare and constantly augmenting treasure. In the middle of the eighteenth century Madeira wine became fashionable in England, owing to the recommendation of officers who served in the West Indies and America. It became customary to ship the wine from Madeira to the West Indies, or even to India, and thence back to England, with the idea of improving its taste. Indeed, many Madeira merchants sent their wines either to the East or the West Indies and back often more than once, as the voyage was held to mature the wine, while the intense heat of the ship's hold and the constant motion gave it a peculiar flavor much prized; and this journey took the place, in great measure, of the former custom of submitting the wine to a high temperature in stone buildings heated by flues. In 1852 the vines of the island of Madeira were attacked by the dread *oidium* disease and totally destroyed. The vineyards were at once replanted, but later the phylloxera affected every vineyard in Madeira, and reduced the production of these wines. Of late years they have gone out of fashion in England, being largely replaced by the light wines of Germany and France. The exportations of Madeira wine have never since been so great as before these visitations, although it is said that there has been recently a revival in the taste for Madeira.

No doubt the drinking of Madeira in the Carolinas began because it was the fashion in the mother country. Then it happened, too, that Madeira was among the non-enumerated articles in which England permitted the colonies to trade with the Canary and Madeira Islands. The ships which carried goods from Charleston were glad enough to bring back pipes of Madeira and to sell them cheap. In fact, the best Madeira at that time did not cost the consumer more than $3 or $4 a gallon, although some Charleston Madeira since the war has sold for $65 a dozen. It was found that the climate of the Carolinas and Georgia was especially adapted to mellowing the wine and imparting to it that peculiar bouquet and flavor so prized by connoisseurs.

Old drinkers used to say that twenty years in a garret in Charleston, with but little light, was enough to ripen Madeira, and that afterward it should be placed in a cellar or a room with northern exposure, where it should be occasionally inspected, and the corks removed about every twenty years. Another gentleman of the old school in Charleston, however, tells of Madeira owned by his uncle, which, as a boy, he was bidden to decant. Upon testing it the old gentleman shook his head.

"Put it back, my boy," he said; "it has been in the garret thirty years, but it must go back again. It is not yet ripe."

Tastes, however, differed in this respect. Mr. Pettigru liked his Madeira so strong that a special bottle was always set apart for him in this same hospitable home, and it was always spoken of as "Mr. Pettigru's wine."

Dr. Gabriel Manigault of Charleston has in his possession to-day a few dozen cherished bottles of wine purchased in the island of Madeira in the year 1816. It is, therefore, eighty-three years of age. A few dozen bottles of the celebrated Belvidera wine, so called from the name of the vessel which brought it from Madeira in 1838, are also in Dr. Manigault's possession. This wine, which is of the very best vintage, has now, in its owner's opinion, reached, at the age of sixty years, the limit of its excellence. Being of a very rare and delicate flavor, it is not one of those Madeiras which continue to improve, or, at least, refrain from deteriorating, for a period of one hundred years. The Poinsette wine, brought from Madeira in 1816, was never of so delicate a flavor as the Belvidera, which probably accounts for its more lasting qualities. This wine, Dr. Manigault believes, is the oldest in Charleston, though it is said that there is some Madeira in this city more than one hundred years old.

"The Blake family of South Carolina," says Dr. Manigault, "have in their possession a wine which they call the 'earthquake wine,' in consequence of their having bought it in the year of the Lisbon earthquake, 1755. In 1855 it was still considered in good preservation. The descendants of Ralph Izard, of the Revolutionary period, have had some of his wine which was bottled in 1774. It can scarcely, however, be considered good now, which is doubtless due to its having been neglected and air having been admitted to the bottles."

A well-known gentleman of Charleston, who knows all about Madeira, says that a good deal of the Jockey Club Madeira was imported between 1855 and 1860, and that, in his opinion, this wine would now, at the age of from forty to forty-five years, be at the height of its excellence. Indeed, while it is now conceded that Madeira has preserved its flavor under favorable conditions for one hundred years, the general opinion of connoisseurs seems to fix from forty to fifty years as the best age for the wine. Some of the Jockey Club Madeira was sent to Columbia during the war and placed for safekeeping in the cellar at the lunatic asylum. This was spared on account of the awe with which the Union army regarded the building and its inmates.

After the war the Jockey Club decided to sell its Madeira. Part of it was bought by an agent of Baring Brothers of London. It was generally understood at the time that it was not bought for the firm, but for one of the members. The agent who purchased the wine is under the impression that the Madeira described in the wine list quoted is not sixty years old, if it is the Jockey Club Madeira. The members of this famous club were convivially rather than commercially inclined, and they were not likely to have left much of their old wine to furnish wonder for succeeding generations and to enrich the pockets of their descendants. Nevertheless he does not say positively that this is not sixty years old, and other members of the Jockey Club say that to the best of their recollection there was some 1838 Madeira in the possession of the club and that this was the wine probably sold to Baring Brothers. On the other hand, some of the famous 1838 Belvidera wine was actually sold soon after the sale of the Jockey Club wine and was bought by Baring Brothers. In all points of the story, with the exception of the name given to it, the Belvidera Madeira would seem to fit the description given on the wine list.

When a bottle of old Madeira was opened it had to be drunk at once. The lees were never disturbed. The custom was to draw off a bottle of Madeira with a siphon so as not to disturb this deposit. All the lees were put together in one bottle, and when the bottle was filled it was set aside to clear. Years after a connoisseur would say: "This is fine. This must have come from the lees." Good wine was known here in those days. Owners of Madeira would send it from all parts of the United States to ripen in Charleston garrets. When Ogilvie was British Consul here it was desired to purchase fine wines for the Queen's table. Consul Ogilvie was asked to get some Madeira, and the old Charleston gentlemen supplied some fine wine for the Queen.

A connoisseur was asked the other day if the men in Charleston were ever the worse for drinking old Madeira.

"Well," he said, "in those days it was not considered that a gentleman was any the worse because he drank large quantities of good old wine and was a trifle hazy when he went to bed. No gentleman ever drank a drop before dinner. Charleston was then the summer resort for the planters, and it was in the summer that most of the drinking was done. There were dinners and wine parties constantly, and I believe it was the general opinion that wholesome wine would not harm any one. Two of these drinkers of good wines, however, came to a tragic end. They were great friends, and when they drank together, two quart decanters of old Madeira was the usual allowance of each. They were not dissipated men in any sense of the word, but they could drink a good deal at a sitting. One of the gentlemen, in crossing the river to take his carriage to his plantation, stepped overboard and was drowned. The other took his bath, dressed himself in a summer suit of white, went to his garret and fell upon his sword. Well, I don't know that you would say they were any the worse for the wine. They remained gentlemen to the last. But it was generally believed that there was no harm in old Madeira."

HARLEM WANTS CHEAP PIANOS.

Leading Makers Now Recognize the Demand for Low-Priced Instruments.

"How many piano makers are there in the country?" was a question asked the other day of the head of one of the oldest factories in the United States.

"Forty, I should say," he answered after thinking it over a moment.

This led to a search for a directory of the music trade, and it was found that the list of American makers of pianos contained nearly 200 names. Nearly eighty piano makers, it appeared, were right here in New York and half a hundred more were in Chicago and Boston. In the South could be found but two factories, both in Baltimore. Besides the 200 makers of pianos there are nearly forty factories where organs alone are made, and then there are about 150 makers of actions, plates, sounding boards and the like.

"The industry is bigger than I thought it was," said the piano maker. "According to the best information at hand, we made over 80,000 pianos in this country last year, and we've been making them year after year by the tens of thousands. I suppose that in the last ten years we've made three-quarters of a million pianos, and you don't have to go very far back to reach a million. Now where, tell me, are these million pianos? Has one person in every seventy or eighty in this country a piano? That isn't possible. You see, of the pianos we make every year only a few thousand are well enough made to be musical instruments after half a dozen years' use, and so there must be hundreds of thousands of old pianos lying around. I don't think they are destroyed, for when a family gets an old second-hand piano, because it can't afford a good instrument, it treasures the musicless old box as a piece of ornamental furniture or else exchanges it for a new piano. Then it is tinkered with and sold again. Old clothes go to the rag mills, old houses are torn down, old ships are destroyed, old iron is melted over, but old pianos live on and on."

Looking over the music trade directory, again it was found that up in Harlem there are nearly thirty piano factories. Pianos and Harlem flats are indissolubly connected. With the return of prosperous times the demand from Harlem for pianos has doubled, and it is this demand that is stirring up things in a lively way in the local piano trade. Harlem wants a cheap piano and wants to buy it on the installment plan. There are piano makers who cannot afford to make cheap pianos. The few makers of really superior instruments talk about "commercialism in art" and turn up their noses at the pianos sold at bargain prices on the installment plan. But still the cheap piano has its uses.

"I am glad to see the department stores selling pianos," said a maker of high-grade instruments the other day, "and I'm glad to see these rattletraps sold at $125 and $150 on monthly payments. Every cheap piano sold means a sale for a good piano later on. A boy gets a watch that 'goes,' and stops very soon, and when he grows up he gets a real timepiece. Cheap pianos are bought and when they become useless and their owners educated to the use of real musical instruments and able to buy them, they are exchanged for high-grade pianos.

"The cost of making pianos changes very little. The skilled labor required to make a good instrument always commands high wages. Cheap pianos are thrown together like folding beds and they are a commercial product. After very little use they get 'loose' and are beyond repair. Lack of the best materials and workmanship and lack of artistic knowledge by their constructors make them but pseudo-musical instruments. Fine-tone qualities and durability can only be attained by the expenditure of money, and it is idle to talk of really good pianos selling for much less than $350. For a small upright piano $250 is the rock-bottom price for a new instrument and for a grand $800. A thousand dollars for an upright and $1,500 for a grand are as high prices as should be paid for instruments not specially made. Highly decorated cases for the homes of the rich have cost as high as $75,000, but the instruments are no better than those selling for $1,500, so far as their musical value is concerned."

One of the first four makers in the country has a plan to divert to his own pockets some of the profits of the makers of cheap pianos. He sells, besides his own piano, which is recognized as a high-grade instrument, a cheap piano. This piano is sold for less than $200, and is recommended as "durable, reliable and of good tone quality," but the maker announces that the cheap instrument "may be exchanged at any time within five years from the date of purchase" for a new piano of his standard make, "when a fair allowance will be made, or if exchanged within one year the full price will be allowed."

The cheap piano is not the first stage, however, of the education of the public to the appreciation of the perfect pianoforte. The old parlor organ comes first. In the East the parlor organ would be forgotten were it not still used in many churches and schools, but out West the sale of small organs has been enormous. High prices for wheat have put money into the pockets of Western farmers and given a boom to the organ and piano trades. They, too, are growing out of the organ stage period of their musical development, and the demand for cheap pianos is brisk. It's only six or eight years since the Western organ makers began to make pianos. Now the two great organ factories in Chicago are each making over 10,000 pianos a year, over a fifth of the entire American output. Chicago's output last year was about 30,000 pianos, New York's 45,000, and Boston's 15,000. Chicago will probably become the great piano town in time. Our exports of organs are growing fast, and just as the market for organs here is in the undeveloped West, so in the foreign field it is the colonies that are buying American organs.

Piano makers think that this will be the greatest year in the American trade. Since the close of the war the demand has increased, and some makers predict an output of 150,000 instruments.

AMERICA'S FOREIGN CYCLE MART.

A Critic Arraigns Our Wheels on a Peculiar Figure Basis.

When bicycling began in this country practically all the wheels used were imported. Now there are only a few hundred brought to the States in a year, and these come as personal property. On the other hand, American wheels are being used all over the world. In spite of these facts many statements calculated to belittle the American bicycle and show that it is losing ground abroad find their way into English and Continental publications. One of these appears in the January issue of the *Fortnightly Review*, the author of which is Joseph Pennell, an American. This is what he says:

"As to the American wheel, with its wood rims, its want of brakes, dress guards and gear cases, the most practical comment I can make upon it is that for the fiscal year ending June 30, 1898, the latest statistics I can get at, the export of American bicycles and parts to foreign countries fell off $158,704,000. That the falling off was not much greater is due to the fact that the sensible American maker is discarding wood rims, and fitting mud guards, brakes, and gear cases."

The United States Consular reports, as gathered by the National Board of Trade, show that the export of American bicycles and parts never reached anything like $158,704,000, which Pennell says represents the falling off in one year. It is doubtful if enough bicycles to equal that value have ever been made in this country. From July 1, 1897, to June 30, 1898, the shipments from here amounted in value to $6,846,510. During the same period in the previous year the amount was $7,005,323. This is a decrease of less than $200,000 instead of over $158,000,000. The falling off is sufficiently accounted for by the two facts that the price of bicycles had dropped about 25 per cent. and that during part of the time the country was at war with a foreign power. There was a general decrease of exports during 1898.

G. E. Hamman, Secretary of the National Board of Trade of Cycle Manufacturers, now in liquidation, said to a reporter of The Sun:

"While the amount of bicycle exports in dollars and cents was less in 1898 than in 1897, the volume of business was greater—that is, the total number of wheels shipped from July 1, 1897, to June 30, 1898, exceeded the number shipped in the corresponding months of 1896 and 1897, although the total value was less."

The head representative of a large exporting firm said that the export department of the company had increased greatly during the period mentioned. In 1898 it had shipped 22,000 wheels abroad. Concerning wood rims, brakes, mud guards and gear cases, the same man stated that 90 per cent. of their exported wheels were fitted with steel rims out of deference to foreign prejudices. He gave it as his opinion, however, that wood rims are gaining in favor on the other side of the ocean.

In Pennell's article he comments that at the national show in London there was hardly a wood rim to be found, while at the Stanley show he saw only one line of wheels fitted with wood rims. Many American wheels are fitted with mud guards before being exported, but the gear cases usually are fitted on the other side. The fact that a percentage of the wheels exported do have wooden rims and a lacking in the mud guard and gear case equipments and that the exports are increasing is somewhat in contradiction of Pennell's implications. In connection with the subject he might have given the figures of the English bicycle exports. According to consular reports the total shipments of English wheels to all parts of the world for the eleven months ending Nov. 30, 1898, were $4,407,330. During the same eleven months of 1897 the value of England's bicycle exports was $7,155,645. This shows an approximate falling off of about $3,000,000 in a year.

SAN JACINTO'S LITTLE GRIZZLY.

Other Animals Get Shot or Trapped in His Stead, and He Goes on Stealing.

San Diego, Cal., Jan. 23.—The little grizzly of San Jacinto Mountain is active again. He has made more trouble than any other animal in southern California. He is a little fellow, judging by his tracks, but most active, judging by his record. There is a big mountain lion in the Moosa Cañon district called Fog, by reason of his superlative energy on foggy nights, but he is nothing compared with the little grizzly of San Jacinto, who has no name.

Zeph Wilkins, who has a little wood ranch and cattle range along the cheek of San Jacinto, knows more about the little grizzly than anybody else, because he has lost more fat heifers, lively colts and roly-poly porkers. The other day Wilkins's boy Ike went out for geese. He has reached the age when he thinks he can shoot. He did succeed in nearly killing the Peters boy when they were out for deer, but beyond this chance shot he had not much of a record. He got up at 2 A. M. in order to be sure of an early start. The cornfield is half a mile from the house. It is on the side of the mountain toward the desert and about 6,000 feet up, so that the sun strikes it early. When the boy was half way there he saw the light broadening over the desert, and objects nearby were already visible. Trudging through the snow he pictured to himself the geese rising from the field with hideous squawking, to renew their flight to the south. He was saying to himself, "Ef I kin on'y ketch 'em ez they raise it'll be all day with 'em," when a black object moved obliquely in front of him, crossed the road and made for the trees. The boy was so scared that he forgot to run.

"Wut's thet?" he said. "They ain't none of ther stock loose yet. Oh, gee! It's the little grizzly!"

With his hands frozen to the gun he stood staring at the black object. Sure enough, the thing moved with the sidelong shamble of a bear. Ike saw that the time had come for him to be a man. He must kill the grizzly. The shotgun had No. 6 shot—good enough, at short range, to kill the bear. While he stood there staring the black thing took a new tack and came toward him, with little sniffs or grunts that froze his blood. In frantic terror the boy raised the gun, fired both barrels, uttered a yell like an Apache, threw the gun away and took to his heels.

Ten minutes later the whole ranch was in an uproar. Old man Wilkins was out doing the chores when Ike ran up, howling, his eyes starting from his head. Bill, the older boy, was in the barn, wrestling with the stock. Everybody ran out to see what was up.

"The little grizzly!" yelled Ike. "I killed 'im! He's a goner! I give 'im both bar'ls! Gee! Come on, pap!"

"Wall, I be doggoned!" said the old man. "Ef that there boy's killed thet dinged grizzly I'll give 'im his pick o' ther shoats. Whur is he, Ike?"

"Down here a ways—jest this side ther cornfield! Hurry up!"

The whole Wilkins family started for the spot. When they arrived there they found, sure enough, a black bulk lying on the snow. And it was a bear. The snow was all torn up about him and blood stained it. The bear was a big fellow—a cinnamon. He was the first and only cinnamon ever killed on San Jacinto. The shot had scattered just enough to make the job effective.

"But she ain't the little grizzly," remarked the old man. "I reckon I'll jest hang onto thet shoat fer awhiled."

"Yes, but she's bigger'n ther grizzly," said Ike. "Anyway, I don't care for ther shoat. I kin kill all ther game I want."

That was about the middle of December. Since that time the little grizzly has been making his visits to the Wilkins ranch and other places so frequently that he has kept the country in a bear fever. His tracks have been found all over the mountain. Once they were seen within half a mile of town. Over about Enchanted Rock the tracks are very thick, as if a dozen bears were there. But they all fit the foot of the little grizzly. Wilkins rigged up a bear trap at the edge of the corral. It was a stout steel trap hitched to a log. He knew it was not strong enough to hold the bear, but he thought it might take off a paw or scare the bear away. The trap was baited with a chunk of beef. The next morning the trap was gone. They tracked it by means of the marks made by the log into the firs and found a good-sized but lean lynx in the trap.

One night Bill Wilkins sat up trying to get a shot at the bear. Bill saw nothing and heard nothing, and though he kept up the watch for two or three nights the bear kept out of his way. Then he gave it up, and that night the bear got into the corral and nearly killed a son of Atto Rex, dam Money-musk. The horse kicked himself free of the bear's hug, and the kicking and snorting was so great that the dogs were raised. The bear scaled the corral and got into the woods.

People up on the mountain think that the little grizzly killed a mountain lion the night after Christmas. Sam Pettingill was on his way to the Wilkins ranch, when he came upon the body of a mountain lion lying near the road. There had been a terrible scrimmage, as the ground was torn up, and the lion was badly chewed about the throat. The tracks of the little grizzly were seen about the place, and many lion tracks. Some of the mountain people said the grizzly had killed the lion, but others said they found tracks of a larger lion, which must have done the killing. They explained that the grizzly probably came around afterward to see what was up. They say that wild animals of different species rarely fight. The brutes generally give one another the right of way through the brush.

In the six or eight weeks since snow has lain on San Jacinto, the little grizzly has got away with seven colts at the Wilkins place, one calf, a turkey gobbler they had been saving for Christmas, and two pigs. They are planning now to catch the bear at the Honey Cave. He goes there every week or two for honey. There are millions of bees in the caves, where they have been storing up honey for years. The Honey Cave is near the foot of Enchanted Rock. They will dig a pit and cover it with sticks and tules at a place where the bear will have to pass if he gets into the cave. But the little grizzly has been so shrewd heretofore that it is doubtful if he will be caught by this stratagem.

SOME NEW SHIP CANALS.

THE GREAT CANAL NOW BUILDING ACROSS RUSSIA.

Project to Make Brussels a Maritime Port—The Proposed 108-Mile Canal Across Florida—Suez Still Stands Alone Among Ship Canals as a Large Dividend Earner.

Among the canal projects that are making most rapid progress is the Russian canal across western Russia, from the Baltic to the Black Sea. Work on the canal began last spring, and four years will be required to complete it. It is to be 1,080 miles long, and will extend from the port of Riga, on the Baltic, to the mouth of the Dnieper River, on the Black Sea. The new waterway will be large enough to permit the largest warships to pass through. It will have a width at the top of 217 feet and 117 feet at the bottom, with a depth of 28½ feet. Starting from Riga the route follows the Dwina River to Dünaburg. From this point the canal will be dug to Lepel upon the Beresina River. It will then follow this stream to the Dnieper, which it will descend to the sea. The route thus utilizes the river courses which are to be canalized, and of the total length of the canal only 125 miles will be dug. The canal is being so strongly built that vessels may steam through it at a rate of six knots an hour. It will take six days for large vessels to pass through it, travelling night and day. The canal is to be lighted throughout by electricity, and the total cost is estimated at about $100,000,000. To enlarge the commercial area to be served it is proposed to utilize numerous secondary rivers and thus connect the canal with the important towns of Mozyr, Chernigov, Jitomir, Poltava, and others.

The success of the Manchester ship canal has led Belgium to think of a similar undertaking for the benefit of Brussels. The project is to make Brussels a maritime port, with large dock accommodations and a basin for shipping comprising about 30,000 acres. The work has not yet begun, but there is no doubt it will be carried out. The canal will be about seventy-five miles long. The Belgians are among the best canal builders of the world, and a great deal of their internal commerce is carried on the twenty-nine canals now in operation.

There is no telling when the proposed Florida ship canal, designed to save some hundreds of miles of travel around the end of the peninsula, will be carried out. The projectors of this enterprise, however, have recently made progress in the study of available routes for the canal. The route selected by the late Gen. Stone has been pronounced impracticable by Engineer Caffall, who reports that a tidewater canal is out of the question, and that the only practicable route for a ship canal is on a lock system, beginning at the harbor of St. Augustine, going straight to St. John's River, 15¾ miles, up that river 10 miles, thence to Orange Lake, 28½ miles, through that lake [illegible] miles, thence to the Gulf, south of Waccasassee Bay, the nearest deep water, 45¼ miles. The total length of the canal is to be 108 miles.

The Panama Canal Company has completed the Boca dock, the Pacific terminus of the canal. It remains to be seen whether vessels will use this dock. The tide fluctuation at Panama amounts to over twenty-five feet, and at the lowest ebb the bottom of the sea is exposed for a mile or more from the shore. Some persons express the opinion that the dock will be a great success, while others think it will be a complete failure, as, in their opinion, vessels will not venture to tie up there.

The French Chamber has had before it for some time a plan to connect the Bay of Biscay with the Mediterranean by a ship canal. The plan is to start from Bordeaux, follow the left bank of the Garonne for a considerable distance, then cross the river and remain on the right bank as far as Toulouse, where it will again pass to the other side. The canal will finally cross the river a third time and terminate in the Gulf of Lyons near Narbonne. Its length will be 327 nautical miles. One great advantage that is urged in favor of the canal is that it will give northern France sea communication with its southern ports without passing through the Strait of Gibraltar.

The Suez Canal is as yet the only great financial success among the ship canals now in operation. Its total traffic receipts for the half year ending June 30 last were $[illegible]. The charges imposed by the canal company are $1.54 per registered tonnage, and ten of the German mail steamers alone contribute annually about $500,000 to the canal company for passage or a sum equal to nearly half the mail subsidies received from the imperial Government.

The Kaiser Wilhelm Canal, between the mouth of the Elbe on the North Sea and Kiel on the Baltic Sea, is more than paying its expenses, and the net income of the Manchester is slowly increasing. The Isthmus of Corinth Canal is only a little over three miles long, but it saves from 100 to 200 miles in the journey to Constantinople and obviates the necessity of making the dangerous passage around Cape Matapan. It is not yet utilized by shipping as much as was expected.

BEAR IN A BASS NET.

Complicated Process by Which Mrs. Abner Chick's Toothache Was Cured.

Dresden, Me., Jan. 27.—The residents along shore cut holes in the ice of Winnegance creek in order to pull out striped bass in nets, and also to drown or wet the fish wardens, who come prying about to discover and confiscate such nets as are made of finer mesh than the law allows. The honest fishermen leave the holes exposed and marked with stakes, so that any one may find their nets. Those who attempt to violate the law cover the openings with broad strips of white cloth after the nets are put down, and shovel snow on top so no one can detect their work. Then when a fish warden comes prowling about at night and walks upon the cloth-covered opening he often goes to his hips or his neck into the cold water, and sneaking away home in the cold is glad enough to resign his job in favor of anybody who wants it.

One night during the full moon of January Abner Chick, a bass fisherman who lives in the village, came home and found his wife suffering from a bad toothache.

"See here, Abby," he said to his 12-year-old son and namesake, "you jest run across the crick to Hahn's woods an' get a hunk on that air pine stub what was struck by lightning last summer, an' we'll brung yer mother outer her trouble. All right. There ain't no ache in the world kin stan' the prodding of a toothpick made from a tree what lightning has hit."

Though it was a bright moonlight evening and the blasted pine stub was hardly a half mile away, Abner, Jr., didn't take kindly to the job. He had been to school all winter and was unfamiliar with the covered holes in the ice, so he had to feel his way across the creek with the aid of a long pole. On reaching the pine woods the darkness and stillness of everything frightened him, the squeaking of his rubbers on the crusty snow sending shivers up and down his spine. In this frame of mind he found the dead tree and had pocketed a chip of its wood and was about to start for home when an owl hooted above his head, causing him to run deeper into the woods. At last when he was out of breath he heard a voice in front of him saying:

"Oo! o-of! o-o-f!"

Thinking the noise was made by one of his schoolmates who had followed behind to frighten him, the boy threw a broken limb into the dark and yelled defiantly:

"See here, John Scott, yer can't scare me—not on yer life!"

As he spoke something big and black and hairy emerged from the darkness and came toward him. The boy seeing he was in danger of being eaten up by a bear gave a yell and fled for home followed by the bear. He emerged from the woods at a six-minute gait, leaped down the embankment to the creek and after running ten rods on the ice went feet foremost into a covered hole that his father had just made. Though the water was not more than four feet deep at that place he would certainly have drowned had not the frozen cloth cover kept his feet from sinking into the mud. As it was, he crouched down until his head was below the ice and kept quiet until he heard the angry bear go scratching and sniffing past his hiding place.

Meanwhile his father had heard his cries, had grabbed an axe and had run to his rescue. Rushing at the oncoming bear, he struck a furious blow with the axe. Bruin was ready, and, rising on his haunches, he fended off impending death with his right paw and sent the axe flying twenty rods away. Having no weapon but a jack-knife, Chick began to retreat, opening the long blade of the knife as he ran. He had not gone ten rods when he came to a covered warden trap, and having gained such headway that he could not turn to right or left, he took a leap and landed on the opposite side. The bear, having no knowledge of the hidden pit, dashed forward and went under the ice amid a mass of snow and frozen cloth. The animal became entangled in the bass net, and then was killed by Chick. It was the work of a few minutes to get the boy on ice again, and then when they had pulled out the dead bear they went home to supper.

The chips from the lightning-scorched pine, which he had gained at the risk of his life, had remained in the boy's pocket all through his adventures, but when he offered to split them into toothpicks for his mother's relief, he found that she had no need of such help, because fright had cured her toothache completely.