

CORNWALL'S POISON KING.

ONE MAN PRACTICALLY CONTROLS THE WORLD'S ARSENIC SUPPLY.

Cleaners Gather the Deadly Article by the Roadside—The Simple Process by Which It is Made Ready for Use—The Men in the Milling Room Wear "Muzzles."

If Africa can boast a diamond king and America a silver king, England has its arsenic king, for there lives in Cornwall the representative of a company of manufacturers who at times has all the arsenic in the world, or most of it in his hands, writes a correspondent. Not many months ago this gentleman held £60,000 worth of the crystalline stuff. England has practically the world's monopoly of arsenic, and England in this case means Devon and Cornwall.

A year or two ago there were in Cornwall places which were the most desolate to look at that one could imagine. It was as if here and there gigantic monsters had wantonly devastated the country. All around these monstrous rubbish heaps was silence. The cottages were deserted, the buildings had fallen in. Nobody ever came near. There were the sites of abandoned tin mines. Of late, however, there has been a change. On the mounds have appeared men, women and children, peering, groping, picking, piling up. To look at them, one would say, gleaners at work. These men and women are gleaners. Not, indeed, for the yellow ears which give bread, but for the white stones which give poison. They are searching the burrows for white mounds, mechanically called mineral mispickel, or arsenical pyrites. In former days this mispickel went to the rubbish heap. Now it is a valuable product. The gleaners are searching for arsenic, the wickedest and most infamous of mineral poison.

The word arsenic is apt to fill the ordinary mind with gloomy visions. To the chemist, to the industrial and to the husbandman, however, the word has a happier sound. In the hands of Fowler it became a medicine which has restored vigor to the blood and

COLOR TO THE CHEEKS

of thousands of sufferers. It is also the active principle in sheep-dip, and a prominent manufacturer whose name is known all over the British empire uses over 1,000 tons a year. It is largely used in aniline dyes. It enters into the composition of certain kinds of glass, is mixed with lead for making shot, and in the form of Paris green it triumphed over the pest that was the phylloxera of the potato. In the Calstock district in Devonshire the various mines—the Devon, Great Council's, Holmbush, Okel Tor, Coomberworks, Gawton and Westlake—until recently have been producing about 600 tons of arsenic a month. Arsenic is now worth £23 a ton. A few years ago it was worth but £13. The rise in the price is owing to the failure in some of the mines.

Arsenic is soot, white soot. Refined arsenic is the soot of soot—that is to say, it is the soot of crude arsenic, which is the soot of ores or of mundic. The stones or ores as they come from the mines are crushed by stamps mainly driven by water power, to the consistency of sand or gravel. Mundic is usually a less finely crushed than the ores which are treated for tin. This sand or gravel is then shoveled into a bin or furnace.

"I can show you the whole process there, true enough, after a few minutes said Mr. William Thomas, of the Camborne school of mines. "It is very simple. He produces a piece of white mundic, which we had picked up on one of the burrows at Doochoath mine, broke out a small piece and pounded it into powder with a hammer. He then took a glass tube, which was bent at an angle of 60 degrees. "The part which is horizontal," he said, "represents the kiln. This gas 'jet'—we were in the laboratory of the Camborne school of mines—represents the furnace, and the part of the tube which slopes upward represents the condensing chambers.

He then loaded the lower part of the tube with some of the crushed mundic and held the tube over the flame of the gas. Almost immediately a

BRIGHT YELLOW CLOUD

flew up, staining the tube yellow.

"There goes the sulphur," said Mr. Thomas. This was followed by white smoke. "That is the arsenic," he said. As rapidly as it volatilizes, so rapidly does it condense. The arsenic fumes begin to deposit their soot as soon as they escape from the great heat of the furnace. This is crude arsenic. This was to be seen by this experiment, also. The white smoke escaping from the tube deposited a grayish film on the interior of the glass, which came away in powder when the tube was tapped against the palm of the hand.

"That is crude arsenic," said Mr. Thomas. "To obtain refined arsenic, the arsenic of commerce, all you would have to do would be to roast that powder again. The second roasting would free it from any carbon or other substances which it may contain."

The manufacture of this poison is indeed terrible in its simplicity. One afternoon I had taken refuge in a Cornish cottage, where I fell in with a gentleman who is largely interested in this industry. "It is the simplest thing in the world," he said. "Look here is a piece of arsenical stone," and he produced a glittering pebble. "Well, with nothing but that stone, the kitchen fire, and that shovel there, I can produce enough arsenic to kill every man, woman and child in this cottage within a few minutes." So he put his piece of white mundic in the fire, and held the shovel over it, so that the fumes

should strike it as they rose, and there, true enough, after a few minutes was a deposit, which, when scraped, came away in the form of gray powder. "That's arsenic," he said; "would you like to taste it?"

Arsenic then, is the soot which is deposited by the fumes which rise from the roasting of arsenical ores. If these fumes were allowed to escape up a long chimney direct from the furnace, that chimney would soon become choked with white soot; but much would escape with the rest, and

WREAK DEVASTATION

abroad. Arsenic fumes are very dangerous to vegetation, as well as to life, and accordingly, even when this soot had little or no commercial value, care was taken by the manufacturers to avoid the penalties of the alkali and other acts, to allow as little arsenic as possible to escape with the smoke from their furnaces. The smoke from the calciners is accordingly allowed to escape only after it has deposited every atom—as far as this is possible—of its arsenic soot. To produce this effect it passes through numerous chambers before it reaches the chimney through which it issues forth into the open air.

The number of these chambers varies, as does also their length. Sometimes they extend over 1,000 feet. The series of chambers form one long zig-zag passage broken at intervals by a wall extending almost its whole width, starting now from one side, now from the other. Each chamber is from five feet to five and a half feet high, and from three to four feet wide. Entrance is obtained into the chamber—for the purpose of clearing out the crude arsenic or soot—through an opening in the wall, which is closed up with an iron plate carefully plastered over around the edges. Arsenic has a great affinity for oxygen, so that the slightest crack in the walls will serve for leakage. Here and there along a series of flues one sees little jets of escaping fumes, where the arsenic—as they say in the district—is "smeeching." In this way, of course a considerable quantity is lost. Thus, in prospecting for lost arsenic in the flues of Okel Tor there were discovered in various cracks and crannies upward of ninety tons of the precious soot, and afterwards a further 300 tons were dug up from under the floors of the chambers. The chambers are opened at irregular periods.

THE CRUDE ARSENIC

is taken out by the shovelful and heaped up in a shed. At one mine I saw a heap of the bluish-white soot. "There's enough arsenic there," said my guide, "to poison a whole city." The bluish tint which I noticed proceeded from the carbon and other extraneous matter, but this heap contained at least 70 per cent. of pure arsenic, and was worth as it stood from £17 to £18 the ton. The crude arsenic has to be refined, so as to eliminate the flue dust, etc. The refining is practically a repetition of the roasting. From the furnaces a hot flue of brickwork, generally about 100 feet long, leads to a series of zig-zag "kitchens" or chambers. In the hot flue the carbon, flue dust and other extraneous matter, deposit, whilst in the zig-zag chambers what is practically pure arsenous anhydride condenses from the fumes. The arsenic is then taken to the milling room, where with an ordinary flour mill it is ground into fine powder and discharged direct into the barrels, in which, by ingenious automatic contrivance, it is tightly packed.

The men who attend in the milling room wear "muzzles" and are otherwise protected against the dust. The manufacture of arsenic is not attended with danger, where ordinary precautions of cleanliness are observed by the workers. The arsenic worker, more than other men, should keep cool. Perspiration would open his pores and facilitate the entrance of the irritating arsenic dust to his skin. He must not wash his face with water for the same reason. One hears of nothing of any serious injuries occurring to the workers. There was one fatality recently and that was only indirectly connected with the arsenic manufacture. A little girl, who was carrying dinner to her father at the East Pool works, fell into one of the flues, the arsenic having corroded an iron plate on which she had imprudently ventured, and she was drawn out covered with the poisonous dust, from the effects of which she died some hours later.

Nor does one hear of any ill use being made of the dangerous products by those engaged in its manufacture. I made many inquiries and could only hear of one case, where a love-lorn maiden dosed herself with an ounce of the soot, an overdose, which, as usual with poisons, was its own antidote. I also heard that three barrels out of the consignment of crude arsenic shipped from Portugal, where some arsenic mining has recently been started by an English company, to a refinery at Bristol, were found to contain sand. One can only wonder what use the Portuguese miners who stole it mean to make of their plunder.

AN EXCUSE.

Wife, at 7 a.m.—Now, deny your condition last evening! Here you are with your hat and shoes on. Don't tell me you didn't come home the worse for drink!

Husband—Not'r bit, m' dear. You know I have lately taken to walking in my sleep, and I thought I'd go to bed prepared.

PARADOXICAL.

Mrs. Swellington—Are you sure this is the fashion?

Modiste—Oui, madame! Ze ver' latest.

Mrs. Swellington—, still doubtful—Queer! It looks well and feels comfortable!

PRODUCTION OF PINS.

The largest pin factory in the world is at Birmingham where 37,000,000 pins are manufactured every working day. All the other pin factories together turn out about 19,000,000 pins every day. Taking the population of Europe at 250,000,000, every fourth person must lose a pin every day to use up the production of pins per day.

PRACTICAL FARMING.

POULTRY ON THE FARM.

Not many more years ago than can be counted on the fingers of one hand not one farmer in ten knew the names of a half dozen breeds of poultry. But to-day the farmer who cannot tell his choice of the different breeds, and the reasons of his preference, is considered behind the times. This is as it should be for nowhere else can a small flock of fowls be made to yield so much clear profit as on the farm, says a writer.

It seems to me best that the farmer should keep but one variety of chickens if he intends raising only for eggs, broilers, or market stock.

We have settled on Buff Cochins as the kind that suits us best. They are extremely gentle, of large size, quick growing, taking only about two months to reach frying size. They are heavily feathered, and so stand the cold weather well, and lay better in winter than in summer, which suits us, as we do not care to sell eggs when they are down to 5 or 6 cents. When they reach this price, we think it pays to boil a few occasionally for the little chicks, if we have more from the common hens than we need for kitchen use.

Eggs from our best hens sell readily among the neighbors for a good price, for setting, if we have more than we wish to set ourselves.

We aim to have our early chicks ready for market as early as possible, and these are sure to bring good prices in the home market.

Later, when everybody and all his folks are taking chickens to market, prices take a leap downward, and as by this time all except the very small chicks can almost pick up a living, and as fowls, live or dressed, are in demand about Christmas and New Year's, and often between times, we keep our chickens growing on to be ready for the market at some of these times.

When setting hens, we set two at one time, and when they hatch, put all the chicks with one hen, and if the other hen seems doing well—if she seems bright and in good flesh—put more eggs under her, and set another hen at the same time. This is late in the season, when one hen can take care of twenty-five or thirty chicks; earlier it is not safe to allow more than fifteen to the hen.

We often hear people say there is no use in setting eggs to hatch in June, for June chicks will "sleep themselves to death." This is often true, because the weather being pleasant, chicks are not cooped, but allowed to wade through rank grass and get wet with dew.

We have never had but few June chicks droop and die, and those few after a failure to keep them cooped until the dew dried off in the morning. Another thing which causes many deaths among the warm-weathered chicks is the practice of feeding almost exclusively on corn-meal dough or flat-ter.

Corn meal should not be fed at all raw. Bread made of corn meal is better. Bread made of a mixture of meal and wheat bran is best, and to this should be added a generous allowance of table scraps, meat, fruit and vegetable trimmings, and what sweet milk or clabber can be spared for them, need never be considered wasted.

A flock of poultry on any farm can be made the source of a neat income, but, even should the farmer only raise enough for his own family, selling never an egg nor a feather, still they will pay better than almost anything else requiring no more outlay, either in time or money, than they.

EARLY RIPENING OF FRUIT.

It is not difficult to so manipulate a branch of a peach, pear or apple tree as to cause it not only to ripen its fruit ten days or more in advance of the ordinary season, but to greatly increase its size, so says a writer in American Gardening.

Trees take in their food from the soil; minerals dissolved in water, which passes from cell to cell through the center of the tree until the leaves are reached, where it is digested, so to speak, and is combined with carbon from the atmosphere and the assimilated food passes downward immediately under the bark, building up the wood cells and developing the fruit. Now if we check the downward flow of the sap by pressing the bark it throws the food back and the fruit appropriates it, causing an abnormal growth and speedy maturity. This can be readily done by twisting a small wire tightly around the limb just below the fruit. It is better to remove all but the one specimen and great care must be exercised not to get the wire so tight as to rupture the bark and thus destroy the branch. It only requires a slight compression to accomplish the work. After the fruit has matured the wire must be removed. Grape growers who practice "ringing" understand this to perfection. They cut out a band of the bark about a quarter of an inch long just below the cluster to be affected. It then appropriates all the resources of the shoot and often more than doubles its size but the limb must be cut at the next pruning, as the girdling kills it. It often happens that a young tree will not develop fruit buds, but such can be made to do so by suddenly checking its growth when its wood buds are about half formed so as to cause them to develop into fruit buds. A fine wire is twisted around the body of the tree only once and left two or three weeks in July and August so as to cut off the downward flow of sap. The same effect can be accomplished by a straight, thin cut directly around the tree, merely severing the bark. It will draw apart and fill with gum, quickly healing; but the

check is secured, and a good crop of fruit sure for the next season. This should be done not later than the middle of July.

CLEANING THE STABLE.

Besides keeping the cow stable clean day by day when used, there should be a thorough annual cleaning, and there is no time when it can be better done than at this season of the year. In this process the whole stable should be emptied and all remnants of fodder, manure and litter be carried away. The whole stable is then to be swept clean including corners, cracks and crevices in walls and floor, and all cobwebs be removed. The sweepings and litter should be buried beneath the manure heap or plowed under. If there is a mow for coarse fodders over the stable, with cracks or holes in the ceiling above the stalls, any remaining fodder in the mow should be removed and all swept clean. After cleaning the stable scrub all woodwork with hot water and then whitewash it. By whitewashing, the stable becomes lighter and more cheerful, the woodwork is preserved, and the development of micro-organisms to impure future milk is checked. If any contagious disease has appeared in the stable, then it should be thoroughly disinfected. Evil micro-organisms are so plentiful in a filthy stable that it is impossible to even get one milking from a cow without having the milk well charged with these destructive invisible organisms of evil portent.

CARE OF MILK.

Place the milk in cool water soon after milking is done. The following is a compilation of directions given by some of the western cheese factories in connection with the care of milk.

Place cans in cold water immediately after milking.

Place cans in cold water at once. Cool quickly.

Practice cleanliness with a big C. Milk pails, strainers, and coolers should be washed and scalded at each milking.

Rinse cans in warm water, scald with hot water, and air as much as possible. Have cans washed and scalded thoroughly and well aired.

Stir the milk at least two or three times while cooling.

When the milk is cooling, cover the cans with cheese cloth.

Do not put covers on the cans over night but use a thin cloth.

Always leave covers off the milk until the animal heat has disappeared.

Never mix morning's milk with night's milk until both are thoroughly cold.

If warm milk is added to cold, it produces a taint at once.

James Clark, who until three years ago, was a familiar figure around the Woodstock hotels, was found dead in bed at the House of Refuge Friday morning. The man was 80 years of age, and died of heart disease.

Messrs. McKellar & Gilroy, of Alvington, on Friday shipped 400 head of cattle, averaging in weight from 1,400 to 1,500 pounds, via Montreal, and consigned to the English markets. One steer weighed 2,165 pounds and \$105 was paid for him.

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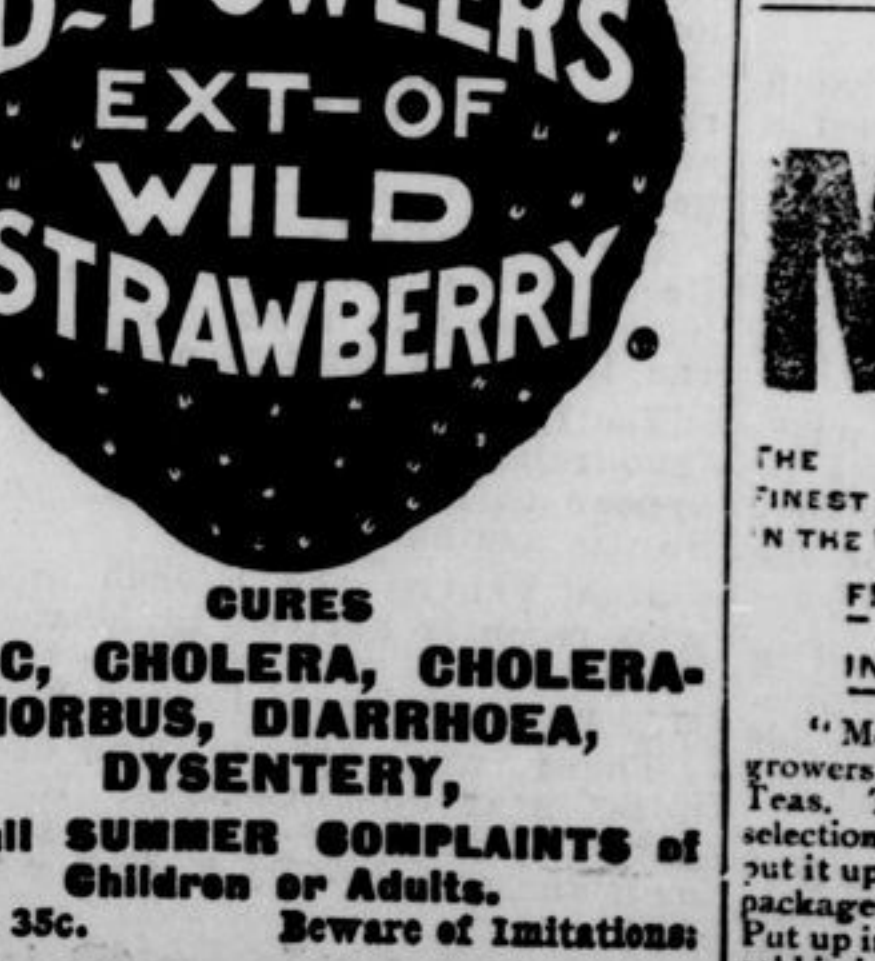
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