11W WILLAMETTE FARMER

Care of Glass and China.

USEFUL INFORMATION.

Black-Leading Iron.

In these days of general diffusion of chem-ical knowledge it is scarcely necessary to state that the "black lead" or "plumbago" of com-merce. is not lead at all, or any compound of its composition. Neither is it a carburet of lead, and that it includes no lead whatever in iron, as is sometimes stated. It is simply cariron, as is sometimes stated. It is simply car-bon. Pure plumbago is pure carbon, impure plumbago is impure carbon. Its proper name is graphite, that is, writing stone. We may venture to describe it as the softest of all true solids, and have often pondered wonderingly upon the apparently unnoticed, but very curi-ous chemico-mechanical paradox that the hard-est and softest of all the solids existing upon the earth are, chemically speaking, the same substance, graphite and the diamond being both carbon. both carbon. It is this wonderful softness, combined with

persistent solidity, that enables us to smear it over any other solid surface, and thus obtain a persistent solid surface, and thus obtain a solid paint, all body and no medium. For the class of castings to which it is commonly ap-plied where its application can be readily re-peated and where it is not exposed to the direct action of water it is unrivalled as a protecting film for iron. Its chemical action, so far as it does act when cold, is reducing, or anti-oxid-izing. Its color and tone are so similar to iron that Mr. Ruskin himself could scarcely make any asthetic objection to its use, and the film is so marvelously thin that it obliterates nothing. There does not apper to have ever been any at-tempt to estimate the thickness of a well brushed film of graphite, but it would seem that if a hundred strata of such films could be piled in contact with each other, their com-bined thickness would fall short of that of the thinnest gold leaf.

INSECT ANATOMY. - Dr. R. U. Peper, the naturalist, in giving an account of some micro-scopic investigations, in which he has recently been engaged, says: I have managed to make a very careful dissection of the tongue of a a very careful dissection of the tongue of a house fly, and now I can show the so-called *trachae* on the tip of the tongue very neatly dissected by my own hand. I can also show a very five specimen of a parasite from a blowing fly, with all its organs perfect. I have noticed what I think is a fact that the flies which survive the winter are all or nearly all perhaps females: the winter are all, or nearly all, perhaps females; and have just dissected a house-fly, in which I find 106 eggs. I have also demonstrate i what is, perhaps, an ontological discovery-that the central lancet of the horse-fly is tubular. For what reason, as he has a sucker from which he draws blood from the wound he makes? The lancet of the horse-fly-the female, for the male lancet of the horse-fly—the female, for the male has no biting organs, is a compound instrument. When closed it presents a point; when open it shows several points radiating from its base. The two outside lancets have rows of teeth, like those on the jaw of a shark. I suppose the creature introduces the lancet shut, like the sticks of a fan. When it is withdrawn it is opened in the process, and thus makes that ugly tormenting wound which these insects inflict upon horses and cattle. The hollow lancet perhaps carries some kind of fluid to poison the blood or render it more fluid. There is, however, no gland to be found by which this fluid is secreted. That the lancet is hollow, however, I have shown without a question, as I have contrived to make fluid pass through it.

CHEAP TELEOBAPHY.—President Orion's re-port of the affairs of the Western Union Tele-graph company is calculated to inspire much hope in those who believe that the Governmen: can run the lines at cheaper rates to the public. On the first of January, 1873, a reducpublic. On the first of January, 1873, a reduc-tion of more than 50 per cent. was made in the maximum tariff between the most remote points ou the company's line. This, though occasioning a temporary loss of revenue, has resulted, during the last few months, in a large there exists a state of the state increase. The reduction was from \$7.50 and \$5 to \$2.50. President Orton now adds that, owing to Messrs. Edison's and Prescott's quadowing to Messrs. Eanson's and Pleasant a data ruplex apparatus, which is, at the present time, working successfully between Chicago and New York, and by which two messages are sent in the same direction and two more in the oppo the same direction and two more in the oppo-site direction simultaneously on a single wire, he believes it practicable before long to cut rates down still lower, and ultimately to estab-lish but four rates for day messages, namely. twenty-five, fifty, seventy-five cents, and one dollar, with half charges (except for the low-est) for night messages.

A NEW PAPER BOARD .- A new method of manufacturing pa manufacturing paper ovard, to in the that a ti-cle more generally useful and dur ble, is de scribed as follows: When a sheet of paper is immersed in an ammonical solution of copper. immersed in an ammonical solution of copper, and then dried, it is stid to be quite impregna-ble to water, and does not lose this quality even though the water be boiling. Two sheets of paper thus, prepared, and passed through a cylinder, adhere to each other so completely as to be quite ins-parable. If a large number of sheets so prepared be cylindered together, boards of great thickness are obtained, the resistance and cohesion of which may be increased by interposing fibrous matters or clothes. Th substance so prepared is quite as hard as the closest grained wood of the same thickness. The ammonical solution of copper is prepared by treating plates of copper with ammonia of the density of 0,880 in contact with the armosphere.

Guns Discharged Without Caps.

It seems almost impossible that a gun should be discharged without the presence of either cap or flint; yet a well authenticated case of the kind seems to have occurred, recently, near Napa, as narrated by the *Register* of that place. It seems that Benj min Bergrin, being out with some companions duck shooting, had just fired one barrel, and hearing the shot loose in the other, turned up the gun into his left hand to pour out the charge, taking the precaution to first remove the cap. Notwithstanding the ab-sence of the cap, the gun went off and made a bad wound in his left hand. It seems almost incredible that a gun could be discharged after the cap is removed, but the phenomena is ac-counted for by experies on the hypothesis that the percussive quality of the cap had—the counted for by experis on the hypothesis that the percussive quality of the cap had—the weather being damp—adhered to the nipple of the gun and been sufficient to explode it on being jarred incident to shaking th—charge out, the hammer baing down. That this theory is a correct one, is confirmed by a similar acci-dent which occurred a few days previous to one of the Asylum apprentices, who had been shooting, and having both charges left in his gun, thought to save them by leaving them in till next day, when he would go cut again. To this end he removed both caps, let one hammer down carefully, and was lowering the other. when it slipped from his thumb on to the nip-ple, and discharged the barrel. The other bar-rel want off at the same instant, as is supposed, by the shock of the first one—both discharging their contents up through the root. The youth by the shock of the first one-both discharging their contents up through the roof. The youth had a narrow escape, and the two accidents confirm the theory of the total depravity of guns, "dangerous without either lock, stock or barrel, because a man once whipped his wife to death with a ramrod."

GUM ARABIC.—This useful product come from Morocco, instead of Arabia, as its name would imply. About the middle of November, from Morocco, instead of Arabia, as its name would imply. About the middle of November, that is, after the rainy season, a gummy juice exudes spontaneously from the trunk and branches of a species of the acacia in that country. It gradually thickens in the furrow down which it runs, and assumes the form of oval and round drops, about the size of pigeons' eggs, of different colors, as it comes from the red or white gum tree. About the middle of December the Moors encamp on the corders of the forest, and the harvest lasts a full month The gum is packed in large leather sacks, and transported on the backs of camels and bul-locks to the seaports for shipem nt. The hartransported on the backs of camels and but locks to the seaports for shipem nt. The har-vest occasion is made one of great rejoicing, and the people for the time being shoot live on gum, which is nutritious and fattening. Such is the commercial story of this simple article.

How TO USE A GRINDSTONE.—Common grind-stone spindles, with a crank at one end, are open to the great objection that the stone will never keep round, because every person is in-clined, more or less, to follow the motion of his foot with his hand, which causes the pres-sure on the same to be unsqual. The harder pressure is always applied to the very same part of the stone, and will soon make it un-even, so that it is impossible to grind a tool true. To avoid this, put in place of the crank a small cog wheel of 13 cogs, to work into the former. The stone will make about 07 of a rerelation more than the crank, and the harder pressure of the tool on the stone will change to another place at every turn, and the stone will keep perfectly round if it is a good one. This is a very simple contrivance, but it will be new to many of our readers.—Cabinet Maker. How TO USE & GRINDSTONE. -Com Bon grind-

"The Cow Theory."

Speaking of the cow theory-that is, that a man with five acres of land can maintain himself, his family and his cow-a writer in the Farmers' Magazine for last month, has the following:

lowing: "On Sir Baldwin Leighton's estate in Shrop-shire, Eng., pauperism is almost exterminated by means of the cow, it being the rule rather than the exception for a laborer to have sums varying from £20 to £80 put by in the savings bank. out of the proceeds of the sale of butter. I have seen the books with the sums entered to their cr. dit. Most cottages have two or three small fields attached to the holding, mostly laid down in grass. The cow, however, is only a second string to the laborer's bow, and does not in any way interfere with his giving efficient ser-vice to the farmer, as the cow can be looked after by the wife who makes the butter and

ends it to market by the carrier. We have frequently called attention to the

Deaths from Lamp Explosions. DOMESTIC ECONOMY.

There are so many circumstances under which accidents, more or less severe and often fatal, occur from lamp explosions, that people cannot be too studious in informing themselves fatal, cocur from lamp explosions, that people cannot be too studious in informing themselves with regard to such ascidents, or too careful in seeking to avoid them. But a few days since the following case occurred at the house of a friend on Perry street, in this city. A gentle-man entered a room late at night in which a k-rosene lamp had been burning low through the evening, stepped towards it and was in the act of extending his hand to tarn it down, and out; but just b fore his fingers reached the thumb-sorew the lamp expleded with a lond re-port which sent it in fragments to every part of the room. Fortunately there was no fire set and no person injured. The next morning a around examination of the fragments to learn the cuse of the explosion led to the theory that the tube, which was rather a large one, had been fitted with a very small wick, thus leaving a large air space by means of which, in all probability, the movement of the air in the room, caused by the opening of the door, forced the small, flickering flame down into the true far enough to communicate with and ex-plode the gas which would naturally, under the curcumstances, have accumulated therein. In this connection it may be interesting, as w-ll as u-eful, to call to mind the fact that Prof. Chandler, of New York city, says: "The total result for the year 1869, for the oity of New York, which I myself have cut from news-papers, is fity-two iatal accidents from daw-papers, is fity-two iatal accidents from daw-papers, is news and eight persons, to my It ought to be taken for granted that all chin It ought to be taken for granted that all china and glass-ware is well tempered; yet a little careful attention may not be misplue.d, even on that point; for though ornamental china or glass-ware is not exposed to the action of bot water in common domestic use, yet it may be injudiciously immersed in it for the purpose of cleaning; and as articles intended solely for or-nament may not be so highly annealed as oth-ers, without frandulent negligence on the part of the manufacturers it will be proper never to apply water to when beyond a tepid temperaof the manufacturers it will be proper never to apply water to when beyond a tepid tempera-ture. But when fractures take place, the best cement, both for strength and invisibility, is that made from mastic. The process, indeed, may be thought tedious; but a sufficient quan-tity can be made at once to last a life-time. To an onnce of mastic add as much highly recti-fied spirits of wine as will dissolve it. Soak an encode of is incluse in water until online soft: ned spirits of whe as which solve it. Sock an ounce of isinglass in water until quite soft; then dissolve it in pure rum or brandy until it forms a strong glue, to which add about a quar-ter of an ounce of gum ammoniac. well d rub-bed and mized. Put the the two mixtures tobed and mixed. Put the the two mixtures to-gether in an earthen vessel over a gentle heat; when well united the mixture may be put into a phial and kept well stopped. When wasted for use the bottle must be set in warm water and the articles to be mended must also be warmed before the cement is applied. The-broken surfaces when carefully joined should be kept in close contact for at least twelve hours, after which the fracture will be scarcely percep-tible and the adhesion p-rfect. The broken portion will also be as strong as the unbrok-n. The same cement may be applied to marble and even to metals.—English Exchange.

papers, is hity-two inta account from usa-gerous kerosene, fifty severe and six alight—in all one hundred and eight persons, to my knowledge, from my own reading, have been injured by kerosene in one year."

EFFECT OF WARMTH IN PREVENTING DEATH FROM CHLOBAL. - Dr. Brunton (who, by the way, has successed the lamented Analie as editor of that excellent medical journal, The Pracitioner) confirms the observations of Lie-breich and others, and finds that the subouta-neous injection of a solution of chloral induces -leep, which is light and easily broken if the dose be small, but passes into come if the dose be large. In dogs, considerable restlessness was observed before sleep came on, and the respiration was at first rendered rapid but sub-sequently became slow. A remarkable dimirespiration was at first rendered rapid but sub-sequently became slow. A remarkable dimi-nution of temperature was observed, which sppears to be partly due to greater loss from the surface, caused by the vessels of the skin becoming much dilated under the influence of the drug, and allowing the blood to be cooled more readily by a low external temper-sture. It is partly due also to the diminished production of heat, which cessation of muscu-lar action always induces. Dr. Brunton found that an animal wrapped in cotton wool may recover perficuly from a dose of chloral which is sufficient to kill it when exposed to the cool-ing action of the air, and that recovery from the narcotic action is much quicker when the the narcotic action is much quicker when the temperature is maintained in this way, and still more rapid when the animal is placed in a warm bath, providing this is not excessive.

A Paradise for Bees.

A correspondent of the S. F. Balletin write-"The Shasta woods are full of wild bees, and their honey is exactly delicious. At least such was the quality of my samples, and no wonder, inasmuch as it was in great part derived from the nectar bells of a huckleberry bog by been

that were let alone to follow their own sweet ways. The hive was a living pine tree, and the distance to the honey bells was only a moment's buzz. Bees themselves could hardly hold the conception of a more honeyful placehoney-bog to left of them; honey-bog to right of them; blooming willows for springtime; golden-rods for autumn; and beside a'that and a'that, miles of acres of buttercops and columbines and rosy chaparral. Regarding Mount Shasta from a bee point of view and beginning at the summit, the first 5,000 feet is clothed in at the summit, the first 5,000 rest is clothed in summer with glaciers and rags of snow, and is, of course, almost entirely honeyless. The next 1,000 feet of elevation is a brown zone tufted and matted with bush penstemon and bryan-thus. next comes the silver-fir zone, about 2,500 feet in hight, containing few sweet flow-ers, but rich in honey-dew and pollen. Next the zone of honey bearing chaparral or Shasta heather, forming the smooth, sunny slopes of the base. This last is six or seven miles wide, and has a circumference of more than 70 miles. Companies of spruce and pine break across it

THE VINEYARD.

3

Grape Culture.

[From the Pacific RuralPress.] Eprrons Passs :--- This branch of business is every year becoming of more importance to the people of California, and hundreds of men are now looking to raisin grape culture as being the best business for them to engage in. Many of these, having no experience with the grap, every naturally look to the agricultural books and papers of the present day for information on that subject. Agricultural books are mainly written by scientific men, who have gained their information more by reading than by actual experience, consequently their modes of doing things are so expensive that

men of small means cannot follow their advice. This leads me to speak of the RUBAL PARSS, whose pages are filled with the experience of the practical men of this State, and from the reading of which farmers may obtain more practical ideas in one year than can be found in all the books in existence. I do not say this to fistter the editors, but because I have never found book nor paper so filled with common sense ideas as is the BURAL . PARS. Farmers, try it for one year, and my word for it, you will no longer do without it.

There are certain natural laws governing the growth of trees and vines which should be nnlerstood by all fruit growers. One of which is, that all things being equal, the roots and branches will grow in the same proportion. Wide-spreading tops will s e wide-spreading roots. A tall, slender tree, with but few branches, will have a deep tap-root with but few side roots. Out off the top of this tree and it will soon make a spreading top, and you will invariably find that its roots will grow corwill invariably find that its roots will grow cor-respondingly. Then again, take a well bal-anced tree, and out off the greater portion of its top and branches, and it will make a tre-mendous growth the following year; and this simply to gain an equilibrium or an equal bal-ance between the roots and its branches; but as soon as this is done the tree is checked in its growth, and then grows more moderately. This is the main cause of well cultivated fruits being better than those in a natural state. Froit trees in a natural state do just what na-Fruit trees in a natural state do just what na-ture intended them to do; that is, produce seeds after their kind. But when trees are ju-diciously pruned and thinned out, this gives

diciously pruned and thinned out, this gives their roots an over supply of sap in the pro-portion to their branches, so that when they commence to grow, there being a less number of fruits, they receive a greater share of sap, and consequently grow larger and better. I have been led to make the foregoing and following remarks by reading a letter on this subject in the RURAL PARSS of December 16th, 1874, written by W. S. Sanders. He seems to think that in plauting cuttings the more vine is buried in the ground the more roots it will produce. Now, Messars Editors, judging from my own experience, I think be was never more my own experience, I think he was never more mistaken. A cutting is not a rooted vine, and one planted twelve inches deep, perpendicular, will produce as many roots as ten feet of vine buried in a trench, simply because the roots and the branches must grow in the same proportion.

Mr. Sanders says of pruning: " Prane so as to leave three or four primary buds on each bunch," etc. In following this advice there is no provision made for a renewal of wood for no provision made for a renewal of wood for next year's crop. Not only that, but it will so spread the tops of the vines that in a few years they will meet between the rows. To avoid this cut half of the branches to two buds each, and the remainder to five or six buds each, or as many of them as are required to procure a full crop of fruit. At the next pruning time cut off the long stems of the previous year close up to the main stalk or vine. At this time there will be found two branches on each of the short spurs; of these cut half to two buds and the remainder to long stems or spurs, as before, and so on from year to year By this plan of pruning the vine is k-pt within due bounds, and still has plenty of the best buds left to produce bountiful crops of

the best baus rear. fruit each year. Mr. Sanders says of planting the vine: "Make each cutting at losst three feet long. All of this, except one bud, should be buried and Fach vine so buried will under the ground. Each vine so buried will throw out a sprangle of roots, thereby giving the vine a much greater growth than by the old way of using short cuttings, only half buried in the earth." etc. Now, Messrs. Editors, this plan of cutting the vine is as "old as the hills," and has been practiced by European vinegrow-ers for centuries. But the Americans are a pro-gressive people and have long since learned under the ground. Each vine so buried will

that all housekeepers, and esnecially all en-gaged in furnishing meat for the table should be impressed with the undoubted fact that aube impressed with the undoubted fact that ani-mals ought not to become excited before they are butchered, because their flesh is injured thereby, and it will spoil quickly. It is fre-quently the case that some mishap occurs when a hog or a fat steer is to be butchered, or when a hurt is given of great or less moment which puts the animal in deadly fear, and he is likely to break away; in which case met, how and door cive object by the state matis likely to break away; in which case men, boys, and dogs give chase, which makes mat-ters decidedly worse, and if, finally, life is taken, it is under pitiable circumstances. There is no doubt that much of the butchers' meat of the largecit's is iojur'd by reason of long journeys, inducing a condition of fear and tremoling or a high state of nervous excitement which can but affect the flesh. There ought to be special regulations to guard against this in all shaghter-bouwes, and on farms the utmost care and deliberation should be taken so that butchering may be quickly and successfully performed.—Dr. Cross. ROLLED HERBING. - Herrings having hurd

roes appear larger and finer fish than those with soft roes; nevertheles, the latter are to be preferred, as they r-ally have more flesh and are more delicate. Having scraped the fish, out off the heads, split open, cleanse and take out the roes. Take the berring in the left hand, and with the thumb and finger of the right press the back bone to loosen it, then lay the fish flat on the board and draw out the bone; it will come out whole, leaving none behind. Sprinkle the herring with pepper, salt and a little chopped green patsley; lay on the soft roe, roll up tightly, leaving the fin and tail outwards, and bind round with a piece of tape to keep it in shape. Have ready some water well seasoned with pepper, salt and vinegar, and when it boils put in the herring and let it simmer for ten minutes, or until cooked. Serve it with butter, parsley or egg sauce poured over. forred, as they r-ally have more flesh and are more delicate. Having scraped the fish, out of

ARTIFICIAL CHEESE .- As a successor to arti-

ficial butter we have now an article of artificial cheese. The experiment of its manufacture

has been made in Tompkins county, New York, it is said with great success; and the theory is simply that skim milk cheese, a food material

simply that skim muk cheese, a lood material of little value, may be so improved by the ad-dition of foreign enriching material as to be much more valuable. The cream is therefore taken from milk and made into butter, and the skimmed material is made into cheese by the addition of a pure and wholesome, but cheap ail

oil.

POISONED BOTCHERS' MEAT -It is well

INDIA-BUBBER TIRES. -Mesars. Bird & Co., of London, have lately brought into notice a new and improved wheel, with India-rubber tire, which is claimed to be capable of wearing as long as, or longer than an iron tire, and to as long as, or longer than an iron tire, and to have the great advantage of perfect noiseless-ness and absence of injurious jsr. The draft of the carriage is said to be reduced by the use of this tire nearly one-third. It appears to be simply a tire of solid rubber, fastened on the exterior of an ordinary wheel by bolts, such as are used with iron tires, and it may b thinner than the usual kind, merely serving the pur-pose of a band to hold the wood work firmly together.

To REMOVE NITRIC ACID SPOTS.—The yellow spots produced by nitric acid may be removed from brown or black woolen goods, while iresh, by repeatedly dipping them into a concentrat-d solution of permangate of potassa and then washing them with water. The yellow spots on the hands may be removed in the same way, the brown stain produced by the permangate being removed by an aqueous solution of sul-phurous acid.

THE United States is now paying over \$100,-000,000 per anoum for freight and passage on foreign ships, to be carried abroad and expend-ed in the employment and support of other peoples beyond a fair percentage of what shoully go to foreign vessels, estimating on the tonnage and travel of each resp-stirely.

CLEANING OUT-Doon STATUARY, ETC.-It is recommended, in cleaning moss-covered stat-uary in gardens, etc., first to kill the vegetation by the application of petroleum or benzine, which will not injure the stone, and to remove it when dry by brushing, finally rubbing with

great boon a cow is to the poor man, and the large profits of a good dairy. This especially the case where only a few cows are kept and are well careff for. A friend of ours, with three grade short-

horn cows, has realized no less than \$90 from the product of each cow in a single season be-sides the milk and butter used in the family. sides the milk and butter used in the family. But these favocable results depend upon two conditions, on or both of which we frequently see overlooked or diaregarded, to wit: First, That we have a good cow—good in form—that a profitable disposition may be made of the carcase for bed, when the cow is no longer wanted for the dairy, and a liberal and steady milker; it is incomprehensible that poor cows should ever be used, when good ones can be obtained at so small an advance on the common price. And this is especially true where feed is high and the animal i. kept with a view of sup-plying milk and butter for the family or market. Indeed, inferior cows should not be kept for any purpose, but should be slaughtered for beef as soon as their inferiority is discovered. To keep an ill-formed cow or a poor milker, for a he soon as their interiority is discovered. To keep an ill-formed cow or a poor milker, for a breeder, is even worse economy than for the dairy, as in this way we perpetuate and multiply unprofitable stock. The second condition for success with the

The second condition for success with the dairy cow, is that she have plenty to eat and the best and kindest treatment. All farmers understand the importance of crowding hoge designed for slaughter—that it takes as much to make an animal "hold its own," as to keep up the bighest degree of gain, and that, there-fore, if we only half feed, what is consumed is a dead low; so it is when we merely keep alive yong cittle or other stock. But in no instance does inil nesture or a proper supply of other young citize of other mode. But in ho instance does full patture or a proper supply of other food in winter, or when pasture is short, pay better than in the management of the duity cow —the more plentiful the feed, the greater will be, not only the yield, but the absolute profit.— T. C. J. in Live Stock Journal.

RECIPROCITY WITH HAWAIL .- Dispatches from REGISTION any that if the negotiators act premptly in soltling up the details of the Hawatian reciprocity treaty upon such a gen-eral character as is understood to be contem-plated, there is no doubt of its prompt ratifica-tion by the Senate.

Scorr's Battmoab Bitt. -- Efforts are being made in Congress to have Tom Scort's bill amended so as to connect the Texas Pacific railroad with the Central Pacific railroad at at Fort Yuma, and thus leave the latter undis puted control of the great routs with Cali-fornia.

Tas Satro tannel is in 8,079 feet.

beat them well together; season the eggs with pepper and sait to taste. Have ready one dozen inne oysters, out them in half, pour the egg into a pan of hot butter, and drop the oysters over it as early as possible. Fry a light brown beat them and serve hot.

OYSTEB OMELET. - Whisk four eggs to a thick broth; then add by degrees one gill of cream;



Fatal Effects of Filth.

X. A. Willard in a late address before the Connecticut Farmers' Convention discoursed as follows :-- Many cases of fever have been traced to the consumption of swill milk; diseases have been traced to the milk drawn from cows by the attendants of sick persons; also to the impure water with which milk-pans were cows by the attendants of sick persons; also to the impure water with which milk-pans were washed. Cows that drink impure water give unwholesome milk. Milk becomes impure from particles of dust falling from the cow's udder, which has been gathered by passing through sloughs or mud-holes. Farmers do not as a rule appreciate this matter, but if they can dispose of their milk or butter before any great change is effected, they think all respon-sibility is off their shoulders. The fine charac-ter of English cheese may be attributed to great cars in all the operations, running from the conditions of the pasture, as to the cleanliness from slough-holes, through the stable, the spring-house, washing of pans, etc., to the production of the cheese. Cosspools or dead animals found upon the premises of English farmers are subjects for prosecution. Putrid water is oft in the only kind by which the cow can slake her thirst, and yet it is pro-

Putrid water is often the only kind by which the cow can slake her thirst, and yet it is pro-ductive of disease. We have a law to prevent watering milk, and yet a farmer is allowed to permit his cows to quench their thirst in the most flithy and poisonous water. Which is the most deserving of punishment? A case of diarrhes in a family was traced to the milk ob tained from a cow confued in a stable without propersyntilation. While the cow is under a violent excitoment, or in an exceedingly new I have often thought in bright, settled son weather, that I could tell the time of day by the comparative energy of bee movements. Gentle and moderate in the cool of the mora-Genile and moderate in the cool of the moru-ing, gradually increasing in fervor, and at high noon thilling and quivering in wild sun-costacy. Bees are as directly the outcome of bright light as flowers are. Bee death and flower death are also alike-merely a sun-withering and expanded.

and evaporation. Shaata bees appear to be better fed than any others I know of. They are dainty feeders and enormonsly cordial withal. Mint moths and humming-birds seldom set foot on a flower, but reach out and suck through long tubes as through straws; but bees bug and clasp and rub their blunt countenances upon them like round, awkward shildren upon their mothers." and evaporation.

propersentilation. While the cow is under a violent excitament, or in an exceedingly new vous condition, the milk b comes highly pol-sonous, as many cases have abundonly proved. A child fed from the milk of a cow that drank from water cozing out of a hog-pen was covered over with sores and pustules. Every factory for milk should have a schedule of questions for its patrons, covering the whole ground of cleanliness, treatment of the animal under all conditions, while in the pasture, at the stable, or in their passage from one to the other; con-dition of pasturage as regards grass, etc., and in every direction affecting the product of milk.

well-watered sections; yet, upon the it is remarkably regular, and contains all the principal honey-grounds of the mountain. The formation of the Shasts bee lands is

easily understood. Shasta is a fire-mountain. casily understood. Shawa is a no-mountain, oreated by a succession of eruptions of ashes and molt-n lava, which, pouring over the lips of the craters, layer over layer, grew outward and upward like the trunk of an oxogenous and has been practiced by European vinegrow-ers for centuries. But the Americans are a pro-gressive people and have long since learned better and cheaper ways of planting the vine. In an experience of 16 years with the vine in California and having rooted and taken up thousands of vines. I have failed to see wherein long cuttings, buried in trenches, had any ad-vantage of short cuttings" properly planted. On the other hand, I have invariably found that cuttings planted perpendicular, from 12 to 16 inches deep, had better roots and more of them (because they stood upright) than when planted as Mr. Sander's advises in trenches. I have also failed to see roots produced from the bud of the vins. Cuttings of any kind, whether of grape or other wood, do not take root from their buds, but from the bottom end of the cutting. tree. During the glacial period the whole Shasta come was capped with ice, which by ero-sion degraded it to some excent and remodeled When at length the glacial period began to draw near a close the ice-cap was gradually melted off around the bottom, and in receding and breaking up into its pres-nt conrecenting and breaking up into its pres it con-dition, deposite i hose irregular heaps and rings of moraine matter upon which the Shasta forests are growing. The gladial crossion of most of the Shasta lavas gives rise to soli com-posed of rough bowlders of moderate size, and a great deal of light, porous, sandy debrilus, which yields very readily to the transporting which yields very readily to the transporting power of running water. An immense quantity of this finer material was sorted out and washed down from the upper slopes of the mount-in by an ancient fixed of extraordinary magnitude, and red-posited in smooth, delta-like beds around the base. These form the main honey-grounds. The peculiar vegetation for which they were planned was gradually acquired, huckleberry bogs were planted, the seasons be-came summer, the chapartal became sweeter, until honey distill like dew. In this glorious honey zone the Shasia bees rove and revel, clambering in bramble and buckle bloom, ring-ing and singing, now down among butterenpe, their buds, but from the bottom end of the outing. Mr. Banders' plan of p'anting the vine is tedious and expensive, not only in planting, but vines thus planted must be staked to in-duce them to grow upright, and must be kept tied to the stakes for four or five years. Their roots being all on one side, their tops have a tendency to fall over in the opposite direction unless tied to stakes. The better and cheaper way to plant vines is to take cuttings about 20 inches long, plant clambering in bramble and buckle bloom, ring-ing and singing, now down among buttercupe, now out of sight in the rosy blossoms of the buckthorn. They consider the lilies, and roll into them; and like lilies they toil not, for bees are run by sun-power, just as mill-wheels are by water-power, and when the one has plenty of water and the other plenty of sun they hum and oniver ality.

and quiver alike.

while the expenses will not be more than one-fourth as great. In the years 1865-6-7, I superintended the plauting of Lone Hill vineyard, of Santa Clars county, owned by D. M. Harwood, and they all were planted in the manner I am here de-scribing, and to-day, it has the name of being one of the finest vineyards in the Bists, and there never was a stake in it. At Riverside we have thousands of vines planted in this way, all doing well and yielding the second year from planting from four to six pounds of fruit to the vine. (variety muscat Alex andra.) We have plenty more land of the same sort, and plenty of water so that others may come and do likewise. Riverside, Jan. 7th, 1875.

The better and cheaper way to plast vines is to take cuttings about 20 inches long, plant them perpendicular, from 12 to 15 inches deep, leaving five or six inches above ground. The latter is to form the head of the vine; by this way of planting, there is no need of stakes. The vines being perpendicular will root even all around like a tree, and will stand alone much better than when buried in a trench, while the expenses will prote them con-

while the expenses will not be more than one-

Tux Sacramento sugarie has just crocted a large two story building for a distillery and potash factory.