

salts mentioned are worth five times the value of ashes, and as a commercial article the former are usually a more economical source of potash than the ashes.
 Grey Co., Ont., Canada. G. FRED MARSH.

Sod versus Cultivated Orchard.

There is a great deal more in this question than appears at first sight. I do not think it can be answered in terms of "yes" or "no," because that would intimate a general rule, and I do not believe any rule will cover the question. In the first place, I think we ought to consider just for a moment what we have in an apple; what an apple is; how an apple lives and grows; what is its life cycle; what are the conditions which bring it to maturity slowly; what are the conditions which close up its life cycle quickly, and in this way cause it to decay. An apple is as much a living organism as any other part of the tree, and there is no time in the life of that apple from the period at which the blossom falls until the period the apple has decayed and rotted, when it is perfectly at rest, unless it be in absolute cold storage. Consequently, the apple is moving on from greenness to maturity, to old age and decay.

Now, then, what connection has that statement with Sod vs. Cultivated Orchards? It is my opinion that any condition which will tend to mature an apple quickly on the tree will, therefore, tend to make it short-lived. As a general rule, our highly cultivated lands will develop apples quicker, make them grow larger, push them through their life history more speedily than orchards in sod; but not all. I have seen tilled orchards on soils so poor in plant food and physical condition that they did not produce as large growth, or as quick growth as other orchards not far distant in sod. The difference was in soil conditions. In one case there was good soil conditions; in the other case poor soil conditions. If we reverse the case by putting the orchard which was cultivated down in sod, and cultivate the other orchard, we would have a very different result; so that this whole question must be considered in terms of conditions. If one has land in such good condition, with such an amount of available plant food that he can afford to lay it down in sod and feel sure of getting apples of good size and color, and apples that will keep as well, it is all right, let him do it; but he must first prove his land. I do not think because Mr. Smith or Mr. Jones, or anybody else, is successful with tillage or non-tillage on his land, and under his conditions, that you can take it for granted you can carry into practice on your soil the same system. In the first place know your ground, what it will do; then apply those methods which will bring about the best result. In short, I think one must study conditions.

I think it is safe to lay down this general principle: An environment that causes the fruit to grow with unusual rapidity or to abnormal size, appears to cause it to pass through the remainder of its life history after it is picked, whether stored in common or cold storage, relatively faster than the same sort grown more slowly. If either system produces this type of growth it probably cuts down the keeping quality of the fruit. Orchards under tillage, and cover crops, on thoroughly well-drained and rather high land, are likely to produce fruit of long-keeping quality. On lower land, the keeping quality would probably be poorer. If the orchard is in sod in rich bottom land, a rapid growing tendency may be induced in the fruit, and the keeping quality is likely to be cut down. On the other hand, if the sod orchard is on thinner or higher land, the fruit grows more slowly and the keeping quality is thereby lengthened. So we might have a cultivated orchard in one case which will bring about that condition more rapidly than sod orchard, or vice versa.—[Prof. John Craig, before the Western N. Y. Hort. Society.]

Weighing Small Articles.

Many farmers having a large farm scale with a capacity of from twelve to sixty hundred pounds, have no means of weighing accurately any article weighing less than, at the very least, half a pound. When it is necessary to weigh less than this, and the usual farm scales are at hand, the following method will be found quite simple, and, what is often more important, it is very accurate if ordinary care be taken. In the ordinary farm scale a one-pound weight must be put on the counterpoise to weigh articles over one hundred pounds. In other words, gone pound on the end of beam balances one hundred pounds on the platform. If, then, it is desired to find the weight of a small article, it is only necessary to attach it to the counterpoise at the end of the beam and place weight enough on the platform to exactly balance it; then weigh what you have placed on platform in the usual way, and divide its weight by 100 to find the weight of the small article. Thus, it will take twenty-five pounds on the platform to balance one-quarter pound on the counterpoise, or six and one-quarter pounds on the platform to balance one ounce on the counterpoise.

In some large scales, the "100-pound" weight is marked "4-ounce." In that case, of course, four ounces on the counterpoise balances one hundred pounds on the platform, or one ounce balances 25 pounds.

APIARY.

Spraying Fruit Trees.

Spring, who so long delayed her coming, seems to have arrived at last, and fruit trees will soon be in bloom. The following timely resolution, with reference to spraying in full bloom, was passed by the Elgin Co. Beekeepers' Association at their spring meeting in St. Thomas recently:

"Resolved, that this convention condemn the spraying of fruit trees while in full bloom as an injurious practice, and a waste of time, labor and money, as well as a detriment to the honey-bee, an insect of value in assisting proper fertilization of the blossom, and likewise contrary to statute law."

The value of bees to blossoms is steadily becoming more generally known, but there are still many vague ideas concerning it abroad. Putting it plainly, plants as well as animals reproduce themselves by the union of opposite sexes. The parts of the flowers are, as it were, the sexual organs, the pistils being the female, the stamens being the male organs. The former contain ovules or embryo seeds, and the latter pollen, which must come in contact with the ovules before they develop into seed. Many blossoms contain both stamens and pistils, but for well-developed fruit, cross fertilization must take place; that is, pollen must come from other blossoms, preferably on other trees or plants. How can this pollen come? The wind does not carry it in the case of fruit trees or clover. It must be carried by insects. To attract insects, nature has provided blossoms with sweet nectar. Without insects blossoms are not fertilized, and there is no seed or fruit. Then to do anything to injure bees, which are the most persistent honey gatherers—and, therefore, pollen bearers—is very poor policy on the part of those who desire fruit and seed.

It has also been shown that spraying in full bloom not only does not accomplish the desired end, but is very injurious to the delicate organs of the blossoms. MORLEY PETTIT.

How to Spread Brood.

The time of year is now coming on when a good many beekeepers will begin, to their sorrow, to spread their brood, and in other ways try to force their colonies.

I wish to suggest a simple way by which this may be done without the loss so often attending the operation. This is by simply changing ends with one frame of brood out of three, the middle one of course; or, if a very strong colony, two out of five. By this means the honey in one end of the frame is removed by the bees, and eggs laid by the queen in its place, and in a few days the same thing is done on the two outside frames of brood; or, again, outside of the brood cluster may usually be found a frame of honey with the side nearest the bees filled with pollen. Reverse this, bringing the honey close to the patch of brood. This plan answers two purposes—stimulative feeding, in that the bees themselves remove the honey from close to the brood, and also stimulates the queen to lay in the whole sheet of comb rather than in small patches in several combs.

I have found it better, at this time of the year, where colonies are weak, and have two or three combs with small patches of brood, to remove the two outside combs and give them to a stronger colony, and, later, return them whole frames of hatching brood.—[H. Fitz Hart, in Bee Culture.]

Cleaning Bees Off Combs.

I will give you what I call a valuable kink in cleaning off the bees from extracting combs. It may be old, I haven't seen it in print. I go to the hive, take out two combs, set them down, then I move over the next one so I can get at each side with a Cogshall brush. I smoke a little, and rub the sides of the comb with the brush. The bees will tumble off and disappear in the lower part of the hive. Take out this comb, do the next the same, until all are cleaned off and taken out. Take out as fast as cleaned off. Then put the two combs first taken out back in, and brush. The combs in a ten-frame hive can be cleaned in two minutes, and not a bee outside of the hive to crawl round—no queen lost, or robbers to bother.—In "Cleanings in Bee Culture."

Shock Loaders.

A grain shock-loader has been devised at Fort Dodge, Iowa, weighing about 1,000 pounds, and drawn by two horses, and with about the same draft as a mower. An elevated carrier takes up the sheaves and drops them on the wagon driven alongside. Judged by engravings we have seen, it is a cumbersome-looking affair.

EVENTS OF THE WORLD.

The St. Louis Fair was formally opened on April 30th.

The caving in of a mine at Tocina, Seville, Spain, buried many miners. Fifty bodies have been recovered.

The West Indies trading schooner, Onoro, was wrecked on the Nova Scotia coast on April 29th. All on board perished.

All the Esquimaux living in the Mackenzie Basin, except ten families, have been killed by a virulent form of measles. The community consisted of forty families.

The Spanish company which is trying to raise the galleons laden with bullion which were sunk in Vigo Bay in 1702, has brought to the surface the Santa Cruz, recovering with her silver ingots to the value of \$500,000.

The Vossische Zeitung says that Emperor William has openly expressed dissatisfaction with the management of affairs in regard to the Hereros rebellion in Southwest Africa. It is expected that he will order large reinforcements to Africa immediately.

The announcement that Japan has already decided to throw open to the world's commerce the port of Antung, from which the Russians were driven on May 1st, is causing much favorable comment in Europe and the United States, as contrasted with Russia's closed-door policy.

A review of the French and Italian fleets in the Bay of Naples was the culminating event of the fete which has been held in Italy during the visit of President Loubet to King Victor Emmanuel. Naples was so crowded with sight-seers, who came from all parts of Italy to see the spectacle, that 20,000 people were obliged to sleep in the streets.

It is asserted that the Russians are about to enforce martial law west of the Liao River. The Chinese Government is determined to avert war, if possible; nevertheless, in preparation for such an emergency, the Dowager Empress has ordered the Provincial Governors to abandon her birthday celebration and use the money collected for that purpose to equip 72,000 troops.

On April 27th, the British House of Commons unanimously adopted a resolution affirming that the Government should encourage cotton-growing in various parts of the Empire. Encouraging reports were given of experiments in cotton-culture in Egypt, the Soudan, Rhodesia, Central Africa, West Africa and the West Indies. Important grants of money will be given to various associations for the purpose of pushing the industry in all favorable portions of the Empire.

The International Commission which for the past eighteen months has been delimiting the Anglo-German frontier in East Africa, has found that the boundary between the Uganda Protectorate and the Congo Free State ought to be further east than shown on the map. The result of changing the line deprives Great Britain of an important strip of territory, including the valuable salt deposits of Lake Albert Nyanza, which will henceforth be wholly in the Congo Free State. A part of the Kager River, which formerly belonged to Germany, falls to Great Britain.

The latest news from the Far East is that Port Arthur has been invested, both by sea and by land. On May the 5th, while Admiral Togo's fleet, in order to distract the attention of the Russians, made a demonstration in the harbor, sixty Japanese transports succeeded in landing a large body of troops at the village of Pitsewo, on the east coast of the Liao-Tung Peninsula, eighty miles north-east of Port Arthur, and one hundred south of New Chwang. At the same time, troops were also being landed at Cape Terminal, and at Port Adams, on the west coast of the peninsula. The Russians at these points, being outnumbered, made no resistance. Subsequent despatches state that these forces have already taken possession of the railway leading from Port Arthur to Mukden and Harbin, hence the sending of further supplies or men into Port Arthur cannot be accomplished by the Russians without a struggle. There is some speculation as to whether the Japanese will attempt simply to keep the town in a state of siege, or whether they will bombard it at an early date. The Russians, however, are by no means alarmed at the cutting off of Port Arthur. They were expecting the coup, and Admiral Alexieff and Grand Duke Boris had already left it in order to be with the active army on the Yalu. There are 23,000 men at Port Arthur, under General Stoessel, and the Russians state that they have plenty of provisions of all kinds to enable them to stand a siege for a year. There are graver fears regarding the fate of General Kouropatkin's army to the northward, which now has to oppose a total number of from 190,000 to 200,000 men. Heavy fighting has taken place at Feng-Wang-Cheng, which the Japanese have taken possession of. The Russians are also said to be evacuating New Chwang.