

smooth, creamy nature. If the emulsion be perfect it will adhere to the surface of glass without oili-ness. As it cools it thickens into a jelly-like mass. This gives the stock emulsion, which, for a summer wash, must be diluted with nine times its measure of warm water before using on vegetation. The above quantity of three gallons of emulsion will make thirty gallons of wash.

For a winter wash, the quantity of the stock emulsion may be made with five times its quantity of water instead of nine.

RESIN WASH.

For summer :—
Resin..... 20 pounds.
Caustic soda (70 per cent. strength)..... 5 pounds.
Fish oil..... 2½ pints.
Water sufficient to make..... 100 gallons.

The resin and soda are broken up, and together with the fish oil are placed in a large kettle, sufficient water being added to cover them. The whole is then boiled for several hours, or "until the compound will mix properly in water without breaking up into yellowish flakes."

Winter wash :—The same ingredients in the following proportion :—

Resin..... 30 pounds.
Caustic soda..... 9 pounds.
Fish oil..... 4½ pints.
Water to make..... 100 gallons.

Mr. Howard states that of the two above, the kerosene emulsion is more lasting in its effects, as in a rainy season the resin wash is more apt to be washed away.

APIARY.

Annual Convention of Ontario Bee-Keepers.

The annual meeting of the Ontario Bee-Keepers' Association will be held at Stratford, Jan. 22, 23, 24th, commencing at 2 p. m. (22nd), in the Council Chambers. The Hon. John Dryden, Minister of Agriculture, will be present. A good programme has been arranged, and a large gathering of bee-keepers is expected.

Honey As a Food.

BY JOHN MYERS, STRATFORD.

Honey is one of the oldest food products of the world. What is it? A chemist would likely answer that it has so many parts of oxygen, so many of hydrogen and so many of carbon, combined in such proportions as to form a mixture of grape sugar, manna, gum mucilage, extractive, a little wax, polon, acid, and odoriferous substances.

Honey, the saccharine (sugary) juices of plants, is collected by bees from flowers, and deposited by them in the waxen cells of the comb. These juices undergo some modification in the honey bag of the bee, but though their chemical character is somewhat changed, they still retain the flavor, and to some extent the peculiar properties of the plants from which they were collected. Besides the changes undergone in the bee-bag, other changes take place in the comb, known as ripening, rendering it one of the most delicious and healthful foods for mankind. But, says someone, that can't be so, because if I eat a teaspoonful it makes me sick. I would like to ask such a one, did you ever try to eat it by degrees until you accustomed your digestion to it? There is no doubt if those to whom the use of honey causes sickness, would judiciously continue to use it in small quantities, the majority of them would find themselves enabled to partake of considerable quantities without any danger of sickness, within a very short period. I am thoroughly convinced of this by having so many instances of it come under my notice. I will relate one or two of a great many which I could give, if necessary. When first I commenced to keep bees, my wife, a rather delicate person, could not use honey in any considerable quantity without resulting sickness. She fairly detested the sight of it about the house, but continued to taste it occasionally, with the result that within a few months she could eat it without the least inconvenience, and at the present time feels lost if the honey supply for table use runs out for a few days. We, as a rule, always have it on our table, and Mrs. Myers uses as much as any member of the family. A young lady came to visit us for a few weeks, who at first, and for some time, could not use honey without resulting nausea, but by using it carefully at first, and gradually increasing the quantity eaten, she was enabled to eat it plentifully, with relish, within a very few weeks. I know that I am perfectly justified in saying it is one of the most healthful foods that can be eaten. I occasionally find even bee-keepers who do not use honey as part of their diet. Just here there is a great mistake being made in allowing a health-giving delicacy to pass out of their hands without participating in its benefits.

In my own family there are just five persons, yet we annually consume about 300 pounds, and we have not had to pay \$2 in doctor bills in ten years for sickness. It has another important redeeming feature in its cheapness, when compared with fruit. If you go to your grocer and purchase an ordinary half-gallon jar of preserved fruit, or, if you like, buy the fruit and let your wife preserve it, the cost will be quite 50 cents. Now, the same jar full of honey will not cost any more than 50 cents, and perhaps less, and it will go twice as far as the fruit, because it is so much richer.

I would not have any one consider me so foolish as to want to disparage the use of fruit, but I would like to impress the wisdom of using both fruit and honey as dessert dishes, as then you will be more healthy and have less doctor's bills to pay.

A point or two on the manner of eating honey will not be out of place. Fruit is usually and properly eaten directly from the dish to the mouth. Honey should not be so eaten, as it is too rich and strong for the palate to be thus relished. A better plan is to add it to bread at intervals between the bites.

Several of my patrons buy honey to use solely as a medicine, in cases of colds, etc. My advice is to use it as a food, and there will be very little occasion for the use of medicine. This is a matter well worth testing. I am persuaded that any one who uses honey as a regular portion of their diet for six months, will agree with me in saying that honey is a healthful, delicious and cheap food.

GARDEN AND ORCHARD.

Ontario Fruit-Growers' Annual Meeting.

The annual and winter meeting of the Ontario "Fruit-Growers' Association," held in Orillia, Dec. 4th to 7th, was by all odds the most enthusiastic and instructive ever held by that association. The capabilities of the Province as a fruit-growing country have been revealed more and more each year, for a considerable time, until now its position is realized as in the very front rank of horticultural countries, which fact induced the association to procure for their meeting such men as Professors Beach, of Geneva Experiment Station, N. Y.; Craig and Fletcher, of Ottawa Experimental Farm; Pantton and Hutt, of Guelph Experimental Station, and many other first-class authorities. The papers read—many of which will appear summarized or in their entirety in the FARMER'S ADVOCATE—dealt with important phases of horticulture, and provoked sufficient discussion to bring out the ideas and experiences of different members in clearing up very many hard problems.

To readers in many parts of the Province a point so far north as Orillia may seem outside the fruit-producing area, but to those attending the meeting the display of local fruits was a marvel. The perfection of the apples in size, flavor, texture and color is conclusive evidence that the location of the meeting was by no means a mistake, but, rather, one of the most suitable to be found. It is true that all apples do not find the most suitable conditions in the Orillia district, but it is also a fact that the many varieties that are peculiarly suited to that locality may safely be planted in any apple-growing part of the Province. There were apples brought from many locations in Ontario, but the exhibit made at the autumn Orillia exhibition, which was kept for the Fruit-Growers' meeting, excelled all others in appearance, and lost nothing by a comparison with those brought from a distance in texture and flavor. The grape display made by Murray Pettit, Winona; L. Wolverton, Grimsby, and a few others, was indeed very fine for this season of the year, as many fine bunches of some of the early varieties were in an almost perfect state of preservation.

The first paper given was by Prof. J. H. Pantton, of the Ontario Agricultural College, on

THE SUBJECT OF FUNGI.

The Professor has found in his dealing with students that knowledge can be most readily imparted through the eye, in conjunction with an explanatory talk. Charts were therefore used, showing the nature, kinds, modes of development and destruction of the various fungus troubles with which fruit-growers have to battle. Some general principles were given to be observed in a successful war against these most subtle enemies of horticulturists. The first was that of prevention, which we long since learned was better than cure. In this the importance of destroying all effected material was dwelt upon, such as the destroying of old dried plums, which may be left hanging in trees, bearing millions of spores to perpetuate plum disease the following season. In this connection the importance was emphasized of burning all black knots on plum or cherry trees before the 1st of February, as the winter spores, which carry the trouble from one season to another, mature and spread from the month of February onward. Cultivation was dwelt upon as an important remedy for fungus diseases, as by it the tree or bush is kept in first-class, vigorous tone, enabling it to withstand ravages of disease with much less disastrous results than if in a weakly condition. Under this head were mentioned drainage, the addition of fertilizers, etc. The application of fungicides was the last and most directly effectual method of overcoming fungoid trouble. Bordeaux mixture was decided by the practical audience to be the great panacea for all fruit diseases, as it not only destroys the disease, but materially invigorates the foliage. A lively discussion on this subject brought out the points that Bordeaux mixture acts farther than the point of contact, as the good effects are seen over the entire tree, whereas when other applications are used, such as potassium sulphate, and copper carbonate, many spots that escape a touch of the mixture seem to have received no benefit. Several growers testified to the lasting benefit of Bordeaux mixture, as the greatest effect was often seen the second year of application, resulting largely from prevention of attacks by having done away with the disease.

IT PAYS TO SPRAY.

A paper given by Professor Craig, of the Central Experimental Farm, on the effect of fungicides in carefully conducted experiments, showed conclusively that the difference between the effects of spraying and not spraying might easily result in failure or a very successful yield. The Professor, after reading a very interesting and instructive paper, referred to a prepared chart, which showed exactly the result of spraying and not spraying. The chart was prepared from the returns of several reports of experimenters in different parts of the Province:

		1st quality.	2nd quality.	3rd quality.
A. G. Russet.....	Sprayed.....	38 pr cent.	35 pr cent.	27 pr cent.
	Unsprayed.....	15 "	55 "	30 "
Baldwins.....	Sprayed.....	75 "	20 "	5 "
	Unsprayed.....	25 "	75 "	0 "
Greenings.....	Sprayed.....	61 "	25 "	11 "
	Unsprayed.....	8 "	35 "	57 "
N. Spy.....	Sprayed.....	53 "	40 "	7 "
	Unsprayed.....	12 "	42 "	46 "
Average.....	Sprayed.....	41 "	36 "	20 "
	Unsprayed.....	22 "	40 "	38 "

Prof. C. C. James, Deputy Minister of Agriculture, in a talk on the benefits of the proper care of orchards, showed that if one cent a tree could be added to the present returns of the orchards throughout the Province, \$10,000 would be the gain produced. Now, when we notice the teaching of Prof. Craig's table, surely an increase of ten or twenty cents per tree is not too much to expect as a difference between the present returns of the apple crop and what might be obtained from a proper care, or, indeed, a very slightly improved care of our trees.

The question of the most suitable sprayers was dealt with to some extent by Professors Pantton, Fletcher and others, which brought out the statement that up till the present time the most serviceable and suitable machines have been brought from the United States, but on examining a sprayer there on exhibition, which is manufactured by Holmes & Holliday, Clarksburg, Ont., those present understanding the requirements of a sprayer, pronounced it the most perfect they had ever seen. It has an automatic agitator, which keeps the solutions in constant motion, thus insuring an even strength and equal distribution of the chemicals. Prof. Fletcher, on being asked, could only suggest one improvement, which is being adopted by the manufacturers.

Bordeaux mixture has the preference as a fungicide, as it not only destroys the trouble, but invigorates the foliage. Paris green can be added to the fungicide at the usual strength of 1 lb. to 250 gallons. Experiments have shown that Paris green mixed with the fungicide is just as effective in destroying insects as when mixed with water alone.

Reports of local associations show that much good is being done from year to year in discussing the many knotty problems of fruit culture, etc. A marked improvement is seen at the autumn exhibitions of fruit. It was suggested that such premiums as rare flowers, such as perpetual roses, etc., be offered to new members, in order to increase the membership. The effects have been very satisfactory wherever the plan has been tried. An address on

ROADS AND ROAD-MAKING

was given by Mr. Andrew Patullo, of Woodstock. The necessity for good roads to fruit-growers is evident, as ripe fruit has only to be bruised to be spoiled, and, as Mr. Patullo put it, one may be near a market ten miles away when a good road stretches between the points, or very far away if a bad road of five miles separates the farm and market or station. The speaker referred to the fact that the country has made rapid strides in almost everything but the improvements of roads, which are allowed to be made and mended in the old methods in very many parts of the country. Speaking of the statute labor system, it was noticed that it was quite in order half a century ago to have the work done, as it is now, in one or two weeks of the year by the farmers, directed by one of their number in each beat, but the time for such a course had passed. Many know, to their sorrow, what it means to travel over the newly-made or repaired road in June or July, when much of the rough gravel has been dumped down in heaps without even being spread, which necessitates driving on the sides, until a rainy spell forces the traveller on the highway to avoid being mired. Under the present system repairs are only made once a year, except in extreme cases, which require much more work than if depressions and bumps were attended to as soon as noticed. Much of the repairing is done by indifferent or incompetent persons, who often leave a road worse than they found it, or perhaps a good man will be followed by one who undoes what may have been previously accomplished. Great care should be exercised in selecting a Pathmaster. Too often a man is chosen for some political reason, and not because he has the requisite knowledge. In order to have a good road, proper drainage is absolutely necessary. If the soil is clay, the road should be macadamized, but in lighter land gravelling is all that is required. The material should be screened down to what will pass through a two-inch ring. Every section should have access to a stone crusher, which may be used by quite an extent of country, and do all their work well. Where this is not used, horses and vehicles cost much more because of the wear and tear from the unnecessary