

Professor Blair is not advocating that growers persist in the use of lime-sulphur, he is not convinced that apples are sprayed off with it when the work is properly executed.

J. Howe Cox, one of the vice-presidents of the Nova Scotia Fruit Growers' Association, is still loyal to lime-sulphur as a spray. He is careful to see that the nozzle or spray gun is not held too close to the tree, and that a mist rather than a stream of the spray material reaches the foliage and the twigs. He is of the opinion that apples have been sprayed off by high-power sprayers, and that the drop would have resulted even had pure water been used as a spray material. Other growers, interviewed by the writer, are still clinging to the lime-sulphur, but are using it in a very much diluted form. Some have even been using, for a summer spray, one gallon of lime-sulphur to ninety of water, but they are increasing the arsenate of lead because it, too, has a high fungicidal value.

THE SPRAY CALENDAR.

The Spray Calendar prepared for Nova Scotia by George E. Sanders and W. H. Brittain, Provincial Entomologist, recommends the following mixture:

First Spray.—When leaves are about one-quarter of an inch in diameter, use 3-10-40 Bordeaux, and one pound of arsenate of lime to forty gallons.

Second Spray.—When the blossom buds are showing pink at the tip, use 2-10-40 Bordeaux and one pound arsenate of lime to forty gallons.

Third Spray.—When blossom petals have fallen, use one pound soluble sulphur, five pounds hydrated lime, and one-half pound arsenate of lime to forty gallons of water.

Fourth Spray.—Two weeks after the third spray, use 2-10-40 Bordeaux and one pound arsenate of lime to forty gallons of water.

It will be noticed from these recommendations and from the list of materials distributed by the United Fruit Companies that arsenate of lime is rapidly taking the place of arsenate of lead. It is somewhat cheaper and gives good results. Some burning has resulted from arsenate of lime in the past, but not enough to curb the increasing use of it.

MATERIALS USED AS DUST.

The dust in most common use this spring was the copper-lime-arsenate dust, which is a mechanical mixture composed of 10 lbs. dehydrated copper sulphate, 85 lbs. hydrated lime, and 5 lbs. arsenate of lime. When this material strikes the leaf it turns to Bordeaux mixture and assumes the characteristic color of Bordeaux, which it does not have prior to contact with moisture. In this case the Bordeaux is made on the tree, rather than in the tank or in the mixer. It was recommended by Mr. Sanders, who originated and has patented the mixture, that it be applied at the rate of about 50 lbs. per acre each application, for 25-foot trees. Like other dust material, it should be put on in the morning or evening when the air is still and the foliage of the trees is damp.

Good results are also obtained from the sulphur-lead-arsenate dust, or 90-10, as it is usually called. A great deal of this came into the Valley already mixed last year, but the United Fruit Companies are obtaining their sulphur in the States this year and the lead powder in Canada, and mixing in their own plant. The cleanest orchard in the Annapolis Valley last year was dusted according to the following program: Second dust, 90-10 sulphur-lead-arsenate; third dust, 85-15 sulphur-lead-arsenate; fourth dust, 90-10 sulphur-lead-arsenate. The dusted Gravensteins in this orchard showed only 9.64 per cent. of scab, while the untreated showed 97.5 per cent. Many growers used the Sanders dust this season for all except the application just after the petals had fallen. For this they used the 90-10 or sulphur dust to prevent russeting. The sulphur dust is not so pleasant to handle as the other, and growers are gradually eliminating it on that account.

DUSTING VS. SPRAYING.

The one big advantage the dusting method has over spraying is that as much orchard can be dusted in one hour as can be sprayed in a day. The dusting is done in the morning and evening when the air is still and the foliage damp. This leaves the best part of the day for other work, such as cultivation or ordinary farm work. Many are dusting because their orchards are so large that they cannot spray them properly and at the right time. In regard to expense, an orchard can be treated with the copper-lime-arsenate dust more cheaply than the four applications recommended in the Spray Calendar can be put on. The sulphur dust will cost five or six dollars more than the liquid spray. This, of course, takes time and labor into consideration, for the dust itself costs more than the spray materials. The great saving is in labor.

Special emphasis in this article has been placed on dusting, for the reason that it appears to be the coming practice in the Annapolis Valley. One-half or more of the growers are still spraying, and many will, no doubt, continue to spray for years. The size of the orchards will compel more growers, from time to time, to adopt the dust even if they still believe that spraying materials properly applied are more effective.

FARM BULLETIN.

The Premier of Quebec Resigns.

Sir Lomer Gouin, for fifteen years Premier of Quebec, tendered his resignation on July 8, and Honorable L. A. Tachereau, for many years a member of Sir Lomer Gouin's Cabinet, succeeded him.

The New Prime Minister.

On Saturday morning, July 10, Rt. Hon. Sir Robert Borden tendered his resignation to the Governor-General, and Hon. Arthur Meighen was sworn into office as Canada's Prime Minister. When a Premier resigns the whole Cabinet automatically goes out of office, and it will be necessary for Hon. Mr. Meighen to select a new ministry or re-establish the old one under his leadership. It is expected that the number of portfolios in the new administration will be considerably reduced, and that the new Cabinet will be chosen largely from the old one. It is altogether likely that Hon. N. W. Rowell will resign, and it is said that Hon. Martin Burrell has been comfortably placed. At time of going to press the Prime Minister has not announced the personnel of his Cabinet, but it is thought that an announcement will be made on Tuesday.

Honorable Arthur Meighen was born at Anderson, in Perth County, Ontario, on June 16, 1874, and is thus in his forty-seventh year. He was educated at St. Mary's Collegiate Institute and Toronto University. As a young man he began the practice of law at Portage la Prairie, and it is that constituency which he now represents in the House of Commons. He was first elected to Parliament in 1908, and was returned at the general elections of 1911 and 1917. On June 26, 1913, he was appointed Solicitor-General; August 28, 1917, Secretary of State and Minister of Mines; and on October 2, 1917, changed to the Ministry of the Interior and Superintendent General of Indian Affairs. In religion he is a Presbyterian.



Hon. Arthur Meighen.

The new Prime Minister.

Tenth Conference of Agricultural Representatives.

The tenth conference of the Agricultural Representatives of the Ontario Department of Agriculture was held at the O. A. C., Guelph, during the whole week of July 5. These conferences serve a very useful purpose in bringing all the Agricultural Representatives together for a discussion of matters relative to the work carried on in the various Counties of the Province. Some fifty men convene at Guelph every year and discuss with various persons interested in the agricultural industry of Ontario, the outstanding problems of the time. On Tuesday the question of securing adequate supplies of commercial seed stocks was discussed, and in summing up the provincial situation the opinion of Professor W. J. Squirrell was that production of commercial grades in satisfactory quantities is the outstanding requirement of the seed situation in Ontario. Ontario can produce seed of excellent quality, but seed growers are at a disadvantage in marketing because the quantity is low. There was a fairly general opinion that some other avenue of sale than that now afforded by the commercial seed houses must be provided. At least an alternative market must be secured, and this in all probability would mean facilities such as storage houses and power cleaners for the use of farmers' clubs, etc. F. C. Hart, Director Co-operation and Markets Branch, Toronto, has recently inspected some warehouses in the State of Michigan, and he pointed out that under the terms of a recent Provincial enactment in Ontario, any co-operative society may borrow up to a total of \$3,000 for the erection or repair of storages or warehouses for farm products. Production is unprofitable unless provision can be made for safe storage. It was also suggested that the United Farmers' Co-operative Company provides assurance of a central selling agency for the farm products of the Province.

The scrub-bull campaign and other live stock matters occupied the forenoon session on Wednesday. It was pointed out by several speakers that the scrub sire is directly responsible for losses amounting to millions of dollars annually. Education, it was thought, would eliminate the majority of these undesirable sires, but eventually legislation may be necessary in order to compel the few who refuse to use the better sire to do

away with the inferior animals. In discussing the case for the good beef bull, Professor Wade Toole, O. A. C., said: "We used two steers in one of our experiments here for the purpose of finding out the superiority of the pure-bred sire. One animal was of scrub character; the other was from a good grade cow, mated to a pure-bred bull. The scrub at three years old was valued at \$110 by a local butcher, while the same man offered us over \$225 for the grade steer when one and a half years of age." Professor Toole expressed himself strongly in opposition to the crossing of beef and dairy breeds for any purpose. H. S. Arkell, Federal Live Stock Commissioner, stated that the beef trade is rapidly going back to pre-war standards, and we must prepare for normal prices again. Feed prices prohibit beef production at low prices, but the Commissioner looked forward to an easier feed situation before long. In beef growing, Canadian live stock men must prepare for stiff competition with South America; and Argentina and neighboring countries are fast gaining control of the British beef market. The hog situation is much more encouraging for the reason that Holland and Denmark, which formerly supplied a large part of the bacon going to the United Kingdom, have a much lower hog population than formerly. The feed situation there is very severe and it seems quite probable, according to the Commissioner, that we can hold the bacon trade in Great Britain for many years because our product is very much appreciated there. The whole live stock situation, said Mr. Arkell, is in a state of confusion, and we must have faith in the future and hold the markets that we now have. S. E. Todd, Secretary of the Industrial and Development Council of Canadian Meat Packers, explained that the highest prices received for bacon for export last winter was about 35 cents, and that this allowed but little profit to the men supporting the packing industry. Mr. Todd said that although farmers were losing money on hogs, the packers were losing even more because of the state of the market.

On Thursday forenoon, F. S. Fulthorpe, of the Live Stock Commission Department of the United Farmers' Co-operative Company, Toronto, discussed the manner in which co-operative shipments of live stock are handled at the Union Stock Yards. He stated at the outset that figures indicate considerable merit in the system of co-operative marketing of live stock. About thirty per cent. of the live stock marketed at Detroit, thirty-three and a third per cent. of the live stock marketed at Chicago, and seventy per cent. of that marketed at South St. Paul, reaches the market on the same basis as the co-operative shipment of live stock in Ontario and Western Canada. It is believed, said Mr. Fulthorpe, that the man who produces good stock should benefit to the fullest extent and to the last cent of profit. The office of the U. F. O. at the Union Stock Yards, Toronto, was opened on February 17, 1919, and has since had a wonderful growth.

A. A. Powers, President of the United Farmers' Co-operative Association; J. M. McNaughton, Manager of the Orangeville Co-operative Marketing Company, Orangeville; R. H. Ashton, Manager the Egg and Poultry Department, United Farmers' Co-operative Company, Toronto; and W. A. Brown, Chief of the Poultry Division, Live Stock Branch, Ottawa, each contributed materially to the discussion at this session on the co-operative marketing of farm products.

On Friday morning an address was delivered by the Hon. Manning W. Doherty, Minister of Agriculture. The Minister was very emphatic in his statement that there is more hope in the work of the Agricultural Representative than from any other branch of the work carried on by the Ontario Department of Agriculture. He believed this work to be the most important point of articulation between the teaching staff of the College and the practical farmer. The Representative can provide proper and adequate distribution of the information secured by the investigator and teacher. The great work ahead of the Agricultural Representative is to bring the average farmer to the point where he will seek the information that is available for his benefit from the Agricultural College. The speaker believed that no greater opportunity for initiative existed in any part of the Departmental service than in Agricultural Representative work. He emphasized the necessity for more farm accounting, and urged the Representatives to encourage farmers to keep closer track of their business. He also thought it possible that more effective work could be done if some system of local control were adopted. He also greatly pleased the Representatives by stating that the increases in salary which have been announced carried no maximum. He did not care how much a man got, so long as he earned it by good and efficient public service.

Several resolutions were passed at the conference, one of which suggested that consideration be given to the appointment of advisory agricultural boards in the various counties to confer with the Agricultural Representative with reference to the work being carried on, or with reference to future work in that county. A standing committee of Representatives was appointed to give this matter consideration. At a suggestion that a public school inspector might be included in the membership of these boards, there was considerable objection in as much as many of these men were declared to be out of sympathy with agriculture. A second resolution referred to the advisability of a committee visiting the States of New York and Michigan, regarding farm bureau work as conducted in the United States. Another resolution asked for permanent assistants in a larger county, and that Representatives should have training as assistants before being appointed to a county. A fourth resolution was passed asking that legislation be passed at the earliest possible date to prevent the keeping of unregistered sires for public service.