(continued from previous page)

SOS demanded a speeding up in natural processes, for in this country, fortunately, canvas won't mildew and rot unless it's exposed for months. And results were needed much quicker than that. Once more spores had to be isolated and cultivated. Pieces of canvas treated with colonies of spores were placed in special incubators where heat and humidity reproduced the quick-rotting tropical conditions. Finding a chemical which would stop the growth of the fungus and at the same time remain effective when exposed to tropical weather was a headache, but one was finally discovered and as a result of this work thousands of American soldiers in the South-west Pacific bivouacked more comfortably and healthily than they might have done.

But often such investigations have to wait the slow turn of the seasons before the efficiency of remedies can be proved. A slow-motion battle of this kind was carried out during the years 1936-38, when disease almost wiped out the passionfruit orchards of the North. The organism which caused all the trouble was one peculiar to New Zealand and the research workers had no fund of overseas experience to draw upon. But by 1943 they had found a copper spray which reduced the percentage of infected fruit from over 90 (at which point the entire crop could be written off) to less than five, which, on the other hand, could be regarded almost as normal wear and tear. And so we can still get passionfruit to put the finishing touch to the Christmas fruit salad.

You Put This in Your Pipe

But in spite of the heartening news of successful skirmishes with blights and bacteria, some of the statistics we gathered plunged us in the deepest melancholy. Take the virus diseases, for example, which are caused by tiny, submicroscopic forms of life—in fact, they seem so close to pure chemical compounds as to make no difference. Outside of a few experimental plots, there is probably not a virus-free potato in the Dominion and virus alone takes an annual toll of the potato and tomato crops which is probably as high as 20 per cent.

Or are you finding it hard to get tobacco? You can blame the mosaic virus. It keeps the local crop about 25 per cent lower than it would be if this trouble could be controlled—and a 25 per cent increase in the local supplies would go a long way to meeting the demand. But mosaic virus, which can be transmitted by the juice of infected plants, is universal in its scope. It can stand a temperature of about 90 degrees Centigrade and it will therefore survive most curing processes. In fact, you are continually putting it in your pipe and smoking it.

The only way to fight the virus diseases seems to be to develop resistant strains of tomatoes, potatoes and tobacco, and so on. Good work has been done by the Agronomy Division at Lincoln in cultivating resistant strains of green peas for the growers at Blenheim, where there is a fair export trade to Australia in seed, but where there is also a lot of pea mosaic virus. The "Greenfeast" pea, which is most favoured by the Australian buyers, is unfortunately susceptible to the mosaic but collaboration between the Agronomy Division and the Plant Diseases Division has resulted in the cultivation of numerous strains of "Greenfeast" pea which look as if they will be fully resistant.

The same thing is being done in the much more important field of swedes and turnips, also the victims of a mosaic. Unfortunately the varieties which have proved resistant to mosaic, club-root and dry-rot are also resistant to stock, and a more palatable variety will have to be evolved.

Busy Little Borers

It was a relief to drop into the timber preservation section, where the job is the straightforward one of fighting borer. It happened to be the busiest time of the year for the workers there, for our visit coincided with the flight season of the adult borer-beetle and at that time of the year about 20,000 beetles are handled, sexed and mated to provide the new season's stock of eggs. In the decent privacy of small thimble-like shelters, the broody females lay their eggs on a square of white gauze stuck on to a small square of wood and, since the life-cycle of the borer is three years in white pine and four in matai or rimu, every care is taken to give them a good start in life. The Plunket Society couldn't do it any better.

Borer control research proceeds along two distinct lines. The control of the pest—in existing buildings it is the most serious enemy of building timber in this country—is one half of the work. It is almost impossible to eradicate the larvae but it can be prevented from spreading by chemical means. The current research aims at finding a contact poison which will remain toxic on wood at least as long as the life-cycle of the insect.

The other line of investigation is to devise some way of treating timber before it is used by impregnation of the wood fibres. In a vacuum, solutions can be driven right through timber but the wood is left very wet and at present experiments are being carried out in which air pressure is used to impregnate the wood. When pressure is released, the air driven into the wood expands and blows out the surplus moisture. Complete treatment, right through the wood, has not yet been achieved with this method due to air originally in the wood building up in the centre under the high pressure.

But by the time most of us get round to pulling down our old barns (or houses) and building new ones we should at least have the consolation of knowing that, though moth and rust may still corrupt, at least the borer will no longer be able to cut the floor from under our feet.

"Red Streak" is heard from 3ZB at 6.30 p.m. on Mondays and 7.45 p.m. on Tuesdays.

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Sunday morning band programmes by leading Canterbury bands, relayed from the Civic Theatre, Christchurch, may be heard from 3ZB at 9.15.