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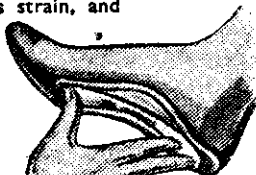
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CAN PENICILLIN HELP THE FARMER?

Pioneer Research Planned by N.Z. Scientists

NEW developments in the use of penicillin and similar preparations may arise out of research which is to begin early in the New Year at the Plant Diseases Division of the Department of Scientific and Industrial Research, in Auckland. Laboratory investigation will be directed at the isolation of good strains and when these are available they will be produced on a large scale at the Plant Chemistry station at Palmerston North. The aim is to discover if these extracts, known to science as anti-biotics, can be used to control or cure plant and animal disease. In the control of plant diseases, this is a new field and, as far as is known, has not been investigated overseas. What the farming industry may gain from the projected studies will not be known until long and complicated experiments are carried out, but at least New Zealand has got off to a good start.

THE cultivation of *Penicillium notatum* — the mould which produces penicillin — and the study of variations in its characteristics have already begun in the bacteriological and mycological departments of the Auckland plant research station, but once the necessary organisation has been completed the work will be shared between Auckland and Palmerston North. The necessary micro-biology will be done at Auckland and the Plant Chemistry branch will handle the chemical and the production sides. Large-scale production will not be difficult since, as one of the Auckland investigators pointed out to *The Listener*, the growing of penicillin and the brewing of beer have much in common.

At this stage it can't be said just how the field investigations will shape but the testing of anti-biotics on animal diseases will probably be done at the Government's experimental station at Ruakura, Hamilton. For the control of plant diseases, the possible value of building up concentrations of anti-biotics in the soil is likely to be investigated at Auckland. But that is only one of the many techniques which will be tried. In the initial stages the work in micro-biology will be of particular importance, since it will show which varieties of anti-biotic may safely be used. Some are as deadly to man as penicillin is to certain bacteria.

men and women do. For the Division is concerned with more than finding cures for the blights and bugs which plague the farmer and the market gardener and the orchardist. Its work ramifies into all sorts of unexpected corners and the experts are constantly being asked to solve problems, in the processing of plant products, which get further and further away from the plants themselves.

Back Room Brains Trust

Like the other Divisions of the Department of Scientific and Industrial Research, Plant Diseases has its own sub-sections and specialists — in entomology, mycology, bacteriology, virus diseases, plant physiology, horticulture, timber preservation and therapeutants (chemical treatments, such as sprays). And, in effect, the group is a full-time practical brains trust. You may read their names from time to time on the title pages of scientific publications but you won't see them very often in the daily papers, for while they form a brains trust they do not broadcast much. They are essentially back-room boys.

Occasionally their work behind the scenes reaches the public. There was the mould on the ceilings of some State houses which caused irritation to many housewives (and a lot of worry to the Housing Department) a year or two ago.

The mycology and timber preservation sections solved this problem, for the cause of the stains was a fungus organism. Of course, it wasn't solved just like that. First of all they had to isolate spores of the fungus which was causing the trouble — a difficult job in itself — then colonies of these had to be reared quickly in incubation chambers, and various chemicals tested to find one which would prevent the fungus growing without having any bad effect on the plaster-board on which it appeared. It was found that the fungus could not be eliminated during the manufacture of the board and both painter's size and wallpaper paste provided it with all the food it needed to thrive. A small amount of chemical, added to the paste and size, was the simple solution of the problem. When it was added in the proper way, the fungus was unable to grow and the Housing Department breathed freely again — or as freely as it usually breathes these days.

Speeding Up Nature

Another instance in which the Division did a quick job during the war years was in finding means for preventing the rotting of tent canvas in the tropics. Here again the urgency of the

(continued on next page)

Ships and Shoes and Sealing-Wax

Ships and shoes and sealing-wax would seem to have as much in common as army tents, breweries, passionfruit and penicillin. Such a string of mis-related subjects sounds more like the attempts of a viva-voce psychologist to probe a deep-seated and elusive neurosis than the course of an orderly conversation. But variety like that is quite logical and natural if you are talking to the Plant Diseases people. The four topics mentioned (exclude, of course, the Walrus' table talk) arose in the course of a brief conversation which *The Listener* had with the bacteriological and mycological experts, and the common denominator of the four was fungus, which is the subject a mycologist is interested in.

That same variety gives some indication of the complexity of the work these

RIGHT: *Penicillium notatum* mould being examined by a bacteriologist

