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Insect pests and their control - Pasture Cockchafers

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INSECT *Pests*

AND THEIR CONTROL

By C. F. H. JENKINS, M.A., Government Entomologist

PASTURE COCKCHAFERS

PASTURE damage due to cockchafer beetles has been recorded in parts of the South-West and Great Southern for the past 50 years, but it is only in the last few seasons that the pest has assumed serious proportions. The first really disturbing reports of pasture cockchafer activity came from the Kojonup district in the winter of 1955, and inspections showed that the insect was common from Boyup Brook to Kataning and down as far as Mt. Barker.

The first sign of cockchafer damage is revealed by the discolouration and final

death of the crop or pasture. An inspection of affected areas will show that the ground is quite spongy and that the turf can easily be turned over, due to the root injury caused by a cockchafer grubs. In many instances, magpies and crows take advantage of this condition and congregate in large numbers to dig over the grub-infested ground.

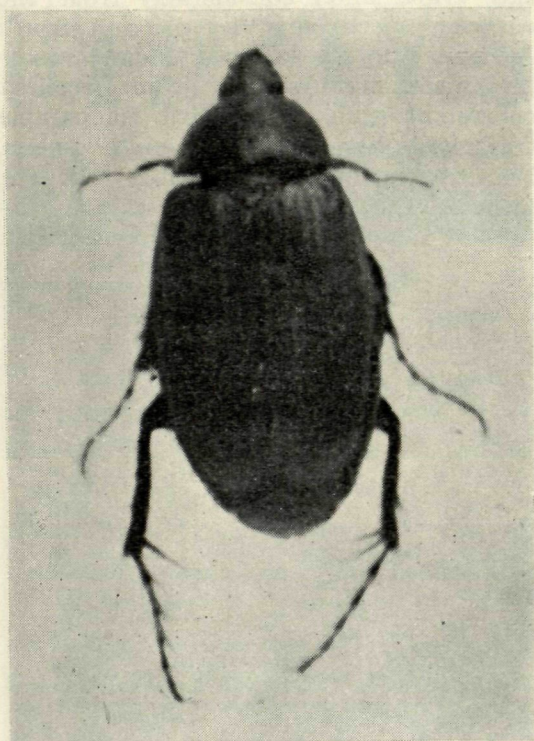


Fig. 1.—Typical cockchafer beetle

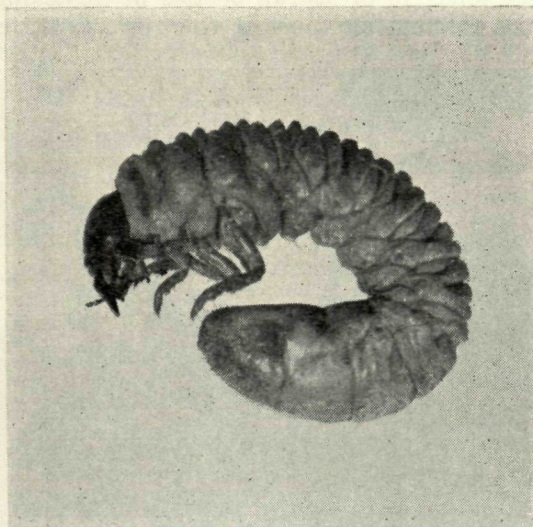


Fig. 2.—Cockchafer grub



Fig. 3.—Cockchafer grubs revealed by digging

It is the immature stage of the cockchafer which causes all the damage and the grubs are variously referred to as pasture grubs, curl grubs and white grubs.

There are many different species of cockchafer or scarab beetles in Australia but fortunately most of them are of little

or no economic importance. The majority are moderate-sized rather robust beetles and they often fly clumsily around the lights on summer evenings.

Since 1955 the pasture grub problem has been given considerable attention but unfortunately no satisfactory solution to the trouble has been found.

Two, and possibly three, species of cockchafer may be involved, and as they have different breeding habits and overlap in their distribution, only the most detailed study can clarify the situation. What we may refer to as the Kojonup cockchafer is a large brown beetle which was flying, and presumably egg-laying in the winter of 1956, a few days after phenomenal snow-falls were recorded in the South-West.

A smaller but otherwise comparable cockchafer was noted flying in mid-summer as far apart as Albany and Bolgart. The small species has so far proved less troublesome than the larger variety but does the same type of damage.

It is worthy of note that the local pasture grubs differ considerably from the common species in Victoria and South Australia. In the latter a lindane-superphosphate mixture has given excellent control of grub damage but comparable treatments here have been quite useless. This is explained by the fact that the Eastern States insects come to the surface at night and so make contact with



Fig. 4.—Dark patches on the hill slope indicate oat crop destroyed by cockchafer grubs

any insecticide which may be present. The local varieties are completely subterranean and have so far defied chemical applications. Dressings of up to 4 lb. of dieldrin and 16 lb. of DDT per acre have only killed a few grubs and even if effective would of course be quite uneconomic at such high dosages.

The larger and most important of the two pest cockchafer has a two-year life-cycle and this accounts for the occurrence of damage in alternative years in some situations.

With arrival of summer, the grubs gradually descend as the soil dries out and finally remain dormant perhaps 15 or more inches down in hard dry soil.

So far, insecticides have only been applied to well-developed grubs and this may account for the poor results. Experiments are planned for the current autumn which will involve the application of insecticides to clover paddocks

either just before or just after the beetles commence egg-laying.

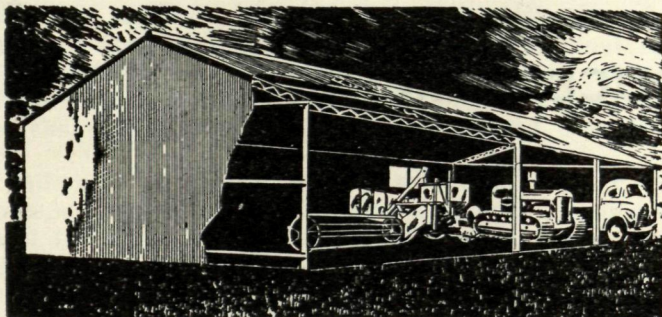
Newly-hatched grubs may be much more vulnerable to insecticides than the older individuals and may succumb to dosages which would be economic to apply.

Clean summer fallow is the only cultural method which is known to have any controlling effect on the beetles, but in many areas the loss of feed resulting from such a practice would be more serious than that caused by the insects themselves.

In view of the very spasmodic occurrence of cockchafer damage and the scattered nature of the outbreaks it may be some time before the factors influencing the beetle activity can be clearly defined. In the meantime farmers will be rendering a service if they report the occurrence of the pest, and where possible forward specimens to the Department of Agriculture.

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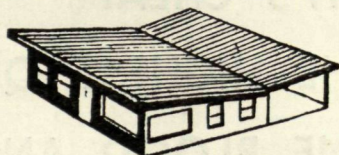
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