Fighting the Argentine ant

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FIGHTING THE ARGENTINE ANT


EXPERIMENTS carried out over the past ten years (Jenkins, 1948), (Pasfield & Greaves, 1951) and (Forte & Greaves, 1953) have shown that modern insecticides are very effective in controlling the Argentine ant (Iridomyrmex humilis Mayr). Large scale experiments with DDT, aldrin, dieldrin and chlordane showed that the last three materials were superior to DDT as barrier sprays and that the ant could be eradicated from quite large areas by the careful application of these chemicals. In an effort to test the possibility of successfully eradicating the ant from whole suburban districts and eventually from the entire State, a large section of South Perth and all the known infestations at Bunbury were sprayed during the summer of 1952-1953.

The South Perth site of approximately one square mile in extent was selected on account of the relatively uniform infestation and the natural water barrier which lessened the chance of rapid re-infestation after treatment. The Bunbury infestation of approximately 130 acres was sufficiently circumscribed to offer some chance of eradication, and the importance of the port as a possible distribution centre was further justification for the attempt.

The actual spraying was organised by the Department of Public Health, and technical supervision and ant surveys were the responsibility of Agricultural Department entomologists. The ready co-operation of the local authorities concerned, and also that of the individual householders, assisted greatly the efficient running of the scheme.

SPRAYING PROCEDURE

Built-up Areas.

Emulsions of 2% chlordane were applied to all street kerbs, house and building foundations, fence lines, garden path edges and the butts of all trees, shrubs, telegraph poles and similar objects. Special attention was also paid to the treatment of pot plants, hanging baskets, creepers and hedges. Lawns and bare ground surfaces were sprayed on a grid pattern of 10 feet squares. This distribution of spray
material ensured that either all nesting sites were sprayed or that foraging ants trailing to and from the nest would be forced to cross one or more bands of insecticide. The fumigatory action of the chlordane combined with its contact effects quickly reduced the ant numbers, and the lasting toxicity of the spray residue finally eliminated all ant activity.

The spraying commenced in December, 1952, and was completed in March, 1953. During this period two complete treatments were applied over the main trial areas in order to reduce the chance of ants persisting in spots accidentally missed during a single spray.

Zoological Gardens and South Perth Foreshore.

Special problems were presented by the Zoological Gardens and that portion of the South Perth foreshore previously occupied by Chinese market gardens. The hazard to mammals and birds, and especially to fish and reptiles, called for particular care in the case of the Zoological Gardens (which were sprayed by Zoo employees). In some instances ornamental ponds were emptied before spraying and in all cases particular care was exercised to minimise accidental drift. As a result of these precautions no fatalities occurred. On the foreshore much of the old market garden area was in a semi-swamp condition and overgrown with reeds and other thick undergrowth and also carrying a quantity of large paper bark trees (Melaleuca raphiophylla). Spraying was further complicated by the presence of extensive areas of bamboos and various neglected ornamental trees.

Owing to the tall reed growth and the opportunity afforded the ants to trail long distances through the interlacing boughs of trees or the
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contiguous reed stems, normal grid spraying was abandoned and an almost complete spray cover was given to all low growth. The tree butts and limbs were also sprayed as high as possible from the ground.

ASSESSMENT OF RESULTS

South Perth.
A detailed house-to-house survey was made before the first spray application in order to accurately determine the distribution and severity of the ant infestation. A further inspection of each household block was made following the first spray treatment, and surviving infestations were noted.

Following the second spray, the premises carrying ants after the first treatment were examined and a 10% random sample of properties throughout the area was also surveyed. About a month after the first treatment, ants were found persisting in 50 different situations, although there was evidence that the insecticide residue was still killing the insects. The second survey was made about four weeks after the last spray application, and no surviving ant colonies could be found. One small infestation on a previously clean block was discovered, however, and traced to recently-purchased firewood. The outbreak and the distribution centre were appropriately treated.

In the Zoological Gardens one colony was found in June when an old hollow tree was blown down, but this survival was dealt with and no further ant activity has been observed.

Random inspections have been made throughout the intervening period and so far no further Argentine ants have been discovered.

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Paperbark trees on foreshore receiving spray treatment.
Bunbury.

The area of ant infestation at Bunbury was delineated following a series of careful entomological surveys and the whole infested section and an adequate buffer were treated (under the immediate supervision of the Chief Health Inspector). Subsequent surveys revealed ants persisting in three situations. One of these survival areas comprised a timber-yard overgrown with kikuyu grass and another a condemned residence right by the water's edge occupied by a fisherman. The general results achieved in Bunbury were, therefore, very satisfactory and spot spraying should cope with the surviving ants.

EFFECT OF SPRAY ON GARDENS, DOMESTIC ANIMALS, ETC.

The spray had no serious effect upon lawns, shrubs and garden plants. Some temporary browning of lawns was noticed and the foliage and blooms of a few delicate plants were burned. Considering the fact that shadehouse plants and extensive garden areas were treated, the results as regards plant damage were very satisfactory.

Domestic pets and poultry survived the treatments satisfactorily. Special care was taken to prevent the contamination of food, drinking vessels and similar objects and with such precautions chlordane spraying should present no special hazard to household animals.

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Dense undergrowth on swampy foreshore being sprayed.

PRECAUTIONS TAKEN BY SPRAYING PERSONNEL

Special care was taken by those mixing the spray concentrate to prevent the material splashing on the skin. Barrier creams were applied to the hands, and long trousers and shirt sleeves were worn by the sprayers. Care was taken to avoid inhaling the spray mist, especially during windy weather.

EFFECT OF SPRAY ON OTHER INSECTS

General observations were made throughout the sprayed area on the abundance of house-flies, bees and other insects before and after spraying. There was a marked diminution in housefly numbers, and widespread reports were received concerning the reduced activity of mosquitoes and fleas. Native ants survived the treatment and are slowly recolonising areas previously occupied by the Argentine ant. No obvious diminution in honey-bee activity could be detected and such beneficial insects as ladybirds were still common following the campaign.

DISCUSSION

No final estimate of the spraying results at South Perth and Bunbury can be made until careful inspections have been carried out during the current spring and summer. Should any Argentine ant activity be found in the specially treated areas, it will be necessary to determine whether the ants are survivors from last season's spraying or fresh introductions. The co-operation of householders to prevent the latter and to report any ant activity will help greatly in interpreting the results of last year's trials and also in determining future policy against the ant.

Whatever the final outcome may be, sufficient evidence has already been gained to prove quite conclusively that the Argentine ant can be effectively controlled by chlordane spraying and that, where co-ordinated action is carried out, the ant menace can be removed from extensive areas.

REFERENCES

Anon, 1953, Agric. Gaz. N.S.W., Vol. 64, Pt. 3, pp. 138-139.
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