THE TOXIC CHEMICALS AND WILDLIFE DIVISION

Monks Wood Experimental Station (The Nature Conservancy),
Abbots Ripton, Huntingdon (Tel: Abbots Ripton 381)

INFORMATION LEAFLET 1969

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Duties and advisory channels

The Toxic Chemicals and Wildlife Division of Monks Wood was formed in 1960. It is part of the Research Branch of the Nature Conservancy, which is a component body of the Natural Environment Research Council. The Nature Conservancy is 'concerned with the establishment and management of nature reserves ... and with the provision of advice and dissemination of knowledge concerning nature conservation and for carrying out and supporting such research as the Conservancy consider appropriate having regard to those activities'.

The duty of the Division is to study the effects of agricultural practices on wild animals and plants so that it can advise on the conservation of wildlife on farmland, in particular to give guidance on ways of reducing hazards from pesticides and other pollutants. The principal channel of advice is through the Pesticide Safety Precaution Scheme, which is operated by the Advisory Committee on Pesticides and Other Toxic Chemicals. The Division is represented on the Advisory Committee's Scientific Sub-committee and Wildlife Panel. It is also represented on various working parties of the Research Committee on Toxic Chemicals, the Research Group on Pesticides and the Aquatic Environment, and the Technical Committee on Aquatic Weeds and their Control.

/Liaison

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Liaison with the Chemical Industry is through the British Crop Protection Council and through the Joint Association of British Manufacturers of Agricultural Chemicals (JABLC/Wildlife Research and Wildlife Education and Communications Committees). In addition the Division frequently advises individual firms on the design of field trials to assess the effects on wildlife of new compounds before they are marketed.

Like other teams in the Conservancy, the Division gives specialist advice to the Conservancy's Conservation Branch on subjects related to its work, for example on the use of herbicides as management tools in National Nature Reserves.

The Division's research work also provides a scientific basis for giving advice to numerous other official and non-official organisations at home and overseas. Among the various national bodies on which the Division is represented are the Royal Society Marine Pollution Study Group, the Game Research Association, the Conservation Corps Management Committee, and the Milton Keynes Research Committee which is investigating the ecological effects of building a large new town on agricultural land.

The main international links are with the International Union for the Conservation of Nature and Natural Resources (IUCN) and the Council of Europe: the Head of the Division is Secretary of the IUCN's Committee on the Ecological Effects of Chemical Controls and is a member of the Council of Europe's Ad Hoc Study Group on Pesticides.

Research Programme

A. STUDIES ON WILDLIFE IN AGRICULTURAL LAND

1. Studies on hedges

   (a) Classification and distribution of hedge types (MDH, MWM)
   (b) Development and disappearance of hedges in England (MDH)
   (c) Relationship between shrub flora and management, soil type and age of hedges (MDH)
   (d) Relationship between fauna and hedge management (MWM, JLFP, EP)
   (e) Development of flora and fauna of newly planted hedges (MWM, EP, JMW)
   (f) The invertebrates of hedges and the relationships between woodland, hedge and crop faunas (EP)

2. Studies on ponds

   (a) Classification and distribution of farm ponds (MDH, DJJ)
   (b) Development of flora and fauna of recently dug ponds (MWM)

3. Some ecological effects of building a small new town on agricultural land (MWM)

4. Minimal areas of suitable habitat required to support selected wildlife species on farmland (MWM, MDH)

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B. POPULATION SURVEYS AND OTHER BACKGROUND STUDIES

1. Recent changes in the Sparrow-Hawk with particular reference to breeding failure (IP) - (Associated studies on Peregrines and Golden Eagles are being made by D. A. Ratcliffe, Scientific Assessor of Reserve Acquisition and Management Review.)

2. Five-year survey of the distribution of British reptiles and amphibians on a 10 km square basis (in co-operation with the Biological Records Centre) (IP)

3. Post-mortem examination of predatory birds (IP)

4. Methods of assessing changes of status of selected insect species (NWM)

5. Population studies on the butterfly Lycaena phlaeas and the moth Hypocrita jacobaeae (JPD)

6. Studies on weed flora of cultivated land and possible sources of infestation from boundaries and neighbouring uncultivated land (JLW)

7. Studies on the conservation value and management of roadside verges (JMW)

8. The importance of field boundaries and road verges in the dispersal of plants and insects (MDH, BWKD)

9. Studies on the foods and feeding habits of birds in different agricultural crops (BWKD)

10. Studies on the survival of grasshoppers (Acrididae) over winter (PM)

C. FIELD STUDIES ON THE EFFECT OF INSECTICIDES

1. Monitoring: annual changes in levels of organochlorine insecticide residues in the eggs of seabirds and in bodies and eggs of certain birds of prey (NWM, IP)

2. The effects of controlling Pieris rapae with DDT on its natural enemies and on other species inhabiting the crop (JPD)

3. The effects on an ecosystem of eliminating a key species by dieldrin (BWKD, NWM, MCF, JMW)

4. The effects of dieldrin on soil animal communities (BWKD)

5. Possible effects of dieldrin and pp'-DDE on the numbers and breeding success of the Heron in eastern England (IP)

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6. The accumulation of organochlorine insecticides in food chains and their effects:
   (a) In litter, insects and insectivorous birds following an aerial application of DDT on coniferous woodlands (MCF, MAM)
   (b) On Badgers and other British mammals (DJJ)
   (c) A study of the organochlorine contamination of the river Witham (Lincolnshire) and its tributaries (IP)
   (d) Experimental study on Carrion Crows (IP)

D. LABORATORY STUDIES ON THE EFFECTS OF PESTICIDES

1. The uptake of dieldrin by small mammals and their bird predators (DJJ, MCF)

2. Physiological studies on birds fed with dieldrin and BHC (MCF, DJJ)

3. Effects of sublethal doses on the reproduction and behaviour of Bengalese Finches (DJJ, MCF)

4. The uptake of dieldrin and DDT in worms and slugs (BNKD, MCF)

5. The effects of sublethal doses of insecticides on the butterfly Aglais urticae, the grasshopper Chorthippus brunneus and the cockroach Periplaneta americana (PM)

6. Studies on the toxicity of PCB, DDT and DDE to birds (DJJ)

7. Effects of organochlorine compounds on avian thyroid activity (DJJ, MCF)

8. Effects of sublethal doses of op'-DDT on birds (ASC)

9. Effects of insecticides on bats (DJJ)

10. Effects of pesticides on tadpoles of the Common Frog Rana temporaria (ASC)

E. FIELD EXPERIMENTS ON THE EFFECTS OF HERBICIDES

1. The effects of mechanical and chemical treatments on roadside verge vegetation and its associated fauna (JMM, BNKD, EP)

2. The effects of various weed control measures on the crop fauna (JPD)

3. Studies on the toxicity of the auxin herbicides to butterflies (JPD)

F. GENETIC EFFECTS

Effects of pesticides on chromosome structure and movement in mitosis and meiosis (MDH)

G. CHEMICAL STUDIES

1. Changes in organochlorine insecticides prior to analysis (MCF, DJJ ASC)

2. Studies of the metabolites of the isomers of DDT (MCF, DJJ)

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