

# EXPERIMENTAL AGRICULTURE

*Editor*

PROFESSOR J. P. HUDSON

*Editorial Board*

PROFESSOR SIR J. B. HUTCHINSON (CHAIRMAN)

PROFESSOR D. K. BRITTON

D. RHIND

DR. E. E. CHEESMAN

PROFESSOR E. W. RUSSELL

PROFESSOR J. D. IVINS

DR. G. WATTS PADWICK

SIR G. W. NYE

DR. C. C. WEBSTER



CAMBRIDGE UNIVERSITY PRESS

Bentley House, 200 Euston Road, London, N.W. 1

American Branch: 32 East 57th Street, New York, N.Y. 10022

*Annual Subscription £5 net (U.S.A. \$16.50)*

*Single parts 35s. net (U.S.A. \$5.00)*

*Expl Agric.*

## OVERSEAS ADVISORS

DR. J. A. ANDERSON (*Canada*)

DR. M. A. A. ANSARI (*Pakistan*)

DR. M. F. CHANDRARATNE (*Ceylon*)

DR. K. B. LAL (*F.A.O.*)

DR. J. MELVILLE (*Australia*)

DR. A. H. MOSEMAN (*United States*)

PROFESSOR M. A. NOUR (*Sudan*)

DR. B. P. PAL (*India*)

DR. S. J. DU PLESSIS (*South Africa*)

**Experimental Agriculture** publishes the results of research on crop production and animal husbandry, with the main emphasis on field experiments carried out in the warmer climates of the world. It also includes accounts of new experimental techniques, discussions of specific problems met in countries where agricultural production is developing rapidly, review articles on new developments in scientific agriculture, and occasional papers on technical, economic and sociological aspects of farming systems. The journal is the successor to *The Empire Journal of Experimental Agriculture*.

**Experimental Agriculture** is published quarterly. Four parts form a volume.

**Subscriptions** may be sent to any bookseller or subscription agent or direct to Cambridge University Press, P.O. Box 92, London, N.W. 1. Subscriptions in the U.S.A. and Canada should be sent to the American branch of the Press, 32 East 57th Street, New York, N.Y. 10022. The subscription price is £5 net (including postage) for an annual volume (\$16.50 in the U.S.A.), payable in advance; separate parts cost 35s. net or \$5.00 each (plus postage).

Second class postage paid at New York, N.Y.

**Back Volumes.** Inquiries for Vols. 1-32 of *The Empire Journal of Experimental Agriculture* should be addressed to Wm Dawson & Sons Ltd, Cannon House, Folkestone, Kent. Previously published parts of *Experimental Agriculture* are available from the London or New York offices of Cambridge University Press.

## NOTES FOR CONTRIBUTORS

**Contributions** will be welcomed from scientists of all nationalities, particularly those working in tropical and sub-tropical countries where up-to-date techniques of agricultural experimentation are helping in the rapid development of more modern methods of farm production. Contributions, which must be written in English, should be sent to the Editor, Professor J. P. Hudson, The Spinney, Wrington, Bristol.

**Conditions of acceptance.** Submission of a paper will be taken to imply that the material has not previously been published, and is not being considered for publication elsewhere. Papers published in *Experimental Agriculture* may not be reprinted or published in translation without permission from the Editor, given on behalf of the Editorial Board.

**General lay-out.** Before having their manuscripts typed contributors are asked to look carefully at the lay-out of other papers published in this journal, to ensure that their own papers, as submitted, conform as closely as possible to

the accepted pattern. This very much facilitates the work of the Editor and may often result in a paper being published earlier than if it requires a great deal of detailed editorial attention. Numerical data, which should only be included if they are essential to the argument, can be presented either in the form of tables or diagrams, but should never be shown in both ways. It is not the normal custom of the Journal to publish notes shorter than about 2000 words (4 pages) or longer than about 6000 words (12 pages including illustrations).

**Typescripts.** A top copy and one carbon copy of the script should be submitted, typed with double spacing, on one side of the paper only and with margins of about 1½ inches at the left-hand side and head of each sheet. Quarto size is preferred to foolscap.

**Title.** The development of automatic bibliographic methods, based on single-word indexing of the significant words in the title, makes it essential that the title of each paper should contain the maximum of relevant informa-

# Azodrin

## does its job inside out-outside in

... and that means double trouble for cotton pests, because Shell's powerful new organo-phosphorus insecticide Azodrin works *two* ways.

By contact, immediately destroying insects on the plant surface. And systemically, by penetrating foliage rapidly where it kills sucking and chewing pests as they try to eat.

This sophisticated dual action makes Azodrin by far the most wide-ranging insecticide yet devised giving *continuing* control over *more* pests *more* effectively.

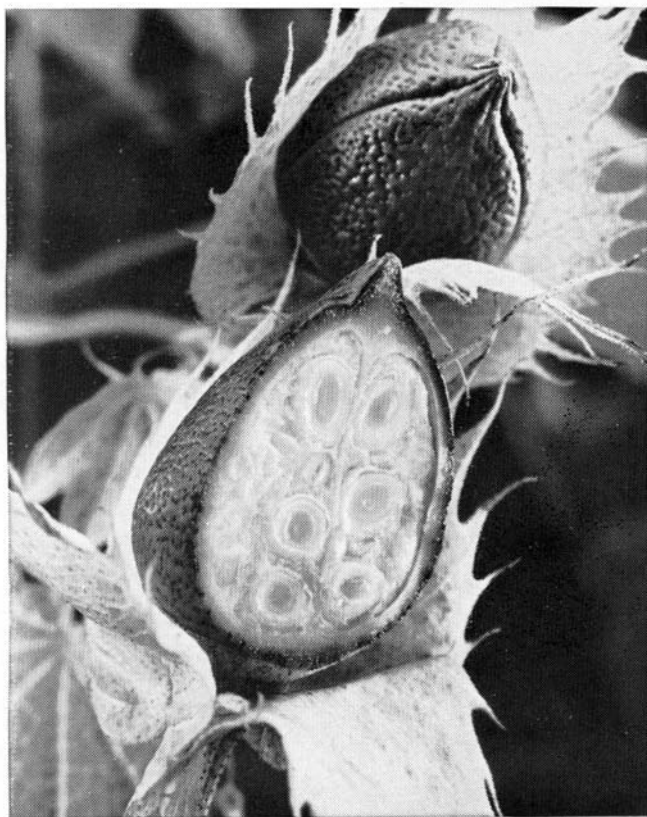
Azodrin has already been employed with outstanding success in the United States and

Central America, and is now proving world-wide to be one of the cotton grower's most powerful allies.

Suddenly pests that took a bite out of profits are losing their appetite.

For further information or supplies of Azodrin contact your Shell company or Shell chemicals distributor. Shell works today for your more profitable tomorrow.

Shell Chemicals



  
 from the  
 University  
 of Michigan  
 Press



JUST PUBLISHED  
 A Fascinating and Controversial  
 Study of the Human Factor in  
 Farming by the Author of  
*BLOSSOMS IN THE DUST*

KUSUM NAIR

## The Lonely Furrow

Farming in the United States, Japan, and India

Is American farming efficiency a myth? Is the Japanese farmer the most efficient in the world? Kusum Nair sought the answers to these questions in scores of interviews and in extensive scholarly research. The vital human portraits of individual farmers, and the revolutionary conclusions regarding agricultural development in a country such as India, make Kusum Nair's latest work a most rewarding and significant study.

\$7.95

Through your bookseller or order direct



The UNIVERSITY OF MICHIGAN PRESS  
 ANN ARBOR

## ANIMAL PRODUCTION

Journal of the British Society of Animal Production

Contents of Volume 11, Part 3, August 1969 include the following:

- MONTEIRO. The relative size of calf and dam and the frequency of calving difficulties.
- WOOD. Factors affecting the shape of the lactation curve in cattle.
- OWEN and MORTON. The association of food conversion ratio, age at slaughter and carcass quality in pigs fed *ad libitum*.
- COLE, CLENT and LUSCOMBE. Single cereal diets for bacon pigs: The effects of diets based on barley, wheat, maize meal, flaked maize or sorghum on performance and carcass characteristics.
- BOURNE. Studies on colostral and milk whey proteins in the sow. 1. The transition of mammary secretion from colostrum to milk with natural suckling.
- BOURNE. Studies on colostral and milk whey proteins in the sow. 2. The effect of delayed suckling on colostrum and milk whey proteins.
- FAHMY, GALAL, SALAH, GHANEM and KHISHIN. Cross-breeding of sheep raised under semi-arid conditions.
- FAHMY GALAL, SALAH, GHANEM and KHISHIN. Genetic parameters of Barki sheep raised under semi-arid conditions.
- LANGLANDS. Studies on the nutritive value of the diet selected by grazing sheep. IV. Variation in the diet selected by sheep differing in age, breed, sex, strain and previous history
- LANGLANDS. Studies on the nutritive value of the diet selected by grazing sheep. V. Further studies of the relationship between digestibility estimated *in vitro* from oesophageal fistula samples and from faecal and dietary composition.
- FORBES and ROBINSON. A study of the energy requirements of weaned lambs.
- DRAPER, HAYNES, FALCONER and LAMMING. Thyroid function as measured by <sup>131</sup>I iodide release rate weight and RNA/DNA in growing lambs, and its relation to growth rate.
- JACKSON. A study of the relative weight changes in the tissues of the gigot joint as Blackface castrated male lambs develop from weaning to maturity and an analysis of the observed individual variation.
- MACDEARMID and PRESTON. A note of the implantation of intensively-fed beef cattle with hexoestrol.
- HESSEL DE HEER. A note of lactate dehydrogenase in the blood plasma of Pietrain and Large White pigs.
- SHARAFELDIN and RAMADAN. A note on the effect of weaning age on lamb production.
- FRAPE, WILKINSON and CHUBB. A note on the digestibility of hard and soft wheat offals in growing pigs.

OLIVER & BOYD LTD.

Tweeddale Court, 14 High Street, Edinburgh 1

# Gardona

## the spray-safe insecticide

Gardona is a new insecticide from Shell. And it's a spray-safe insecticide because it can be sprayed without the use of special protective clothing. What's new about Gardona is its low toxicity to man and animals.

Gardona is especially effective against caterpillars, flies and beetles. It protects apples and pears from Codling moth, citrus fruits from fruit flies, and vegetables from caterpillars and flea-beetles.

And Gardona's selective activity against these pests means most beneficial insects and organisms survive the spraying.

Although Gardona will control pests for up to fourteen days, depending on the dosage, its low-mammalian toxicity means crops may be safely harvested a very short time after treatment. In most cases the following day.

Spray-safe Gardona is also showing promising results in the control

of major pests in a variety of other crops such as cotton, rice and maize.

Gardona is another product of Shell's continuing research into the development of effective and safe insecticides. For further information or supplies of Gardona contact your Shell company or Shell Chemicals distributor.

Shell Chemicals



# Aldrin

## makes the earth a healthy place for crops to grow in

Aldrin is a highly effective Shell insecticide.

It works *underground* to destroy the full range of soil insect pests, which attack the vital root system of your crop. For the major groups of soil pests, wire-worms, cutworms, white grubs and mole-crickets, it is recognised as the most efficient insecticide there is. It can be applied to any type of soil in the world, and is harmless to beneficial organisms in the soil.

Used for row treatment, as an overall application, as a root dip, or as a seed-treatment, aldrin is especially suited for use with maize and other cereals, sugar cane, sugar beet, potatoes and tobacco.

Aldrin has excellent residual action. It is stable in the presence of other agricultural chemicals, does not affect germination, and has no taint. Used as directed, aldrin is harmless to both farmers and consumers. It is available as the technical material and high

concentrate dusts for further formulation, and also in forms suitable for the grower: emulsifiable concentrates, wettable powders, field strength dusts and granules.

For details of approved uses and advice on application of aldrin consult your Shell company or Shell chemicals distributor.

Shell Chemicals

