

a motor-car from a site near the River Chiumbe. But it does appear from Canon Paterson's evidence and now from the Lunda examples that the modern folk make elaborate paintings either on drawing paper or on the clay walls of their houses without having been taught by Europeans. The human beings sometimes appear in a very stylized manner, recalling those found in rock-shelters in southern Spain and dating there to the Copper Age. But there is no need to try to suggest any connexion because such conventionalizations of the human form occur in many places and are of many different dates; they occur, too, on the walls of rock-shelters in the New World.

The Diamond Company of Angola is to be congratulated on the time, trouble and money it devotes to archaeological and ethnological research. The present volume is a notable contribution to knowledge and, incidentally, is a delightful picture-book for one's study.

M. C. BURKITT

DISPERSAL PROCESSES IN FUNGI

Dispersal in Fungi

By C. T. Ingold. Pp. viii + 197 + 8 plates. (London: Oxford University Press, 1953.) 18s. net.

THE enormous fecundity of the fungi has long been known by those whose business it is to protect crops from attack by pathogenic fungi, or to prevent spoilage of stored materials by moulds and decay of timber by wood-rotting fungi. It is evident, too, to those who grow micro-organisms in pure culture on a laboratory or industrial scale. More recently its importance has been appreciated for another reason, for air-borne fungus spores have been identified as respiratory allergens, and in Great Britain the bulk of the microscopic dust particles suspended in outdoor air in summer seems to be either fungus spores or pollens. Bacteria also occur in outdoor air; but, as Pierre Miquel found seventy years ago, they are usually much less numerous than fungus spores—mainly because, unlike bacteria, the fungi have evolved a weird variety of mechanisms which propel their spores into the air. Other adaptations serve to aid their dispersal by animals, especially insects, and by water.

In this little book, which is addressed "to all those concerned with fungi as living organisms", Prof. Ingold lucidly describes the processes of fungus dispersal. It will be valued not only by the more academic biologists and by students with examinations to pass, but also will be a mine of information to those with a practical interest in the way fungi get into places where they are not wanted.

After a brief introductory survey, the remainder of the first half of the book is taken up with a full account of spore liberation. Some of this material has been used in the author's well-known book on "Spore Discharge in Land Plants", and about a fifth of the excellent text-figures are from the same source. The new book, however, is in no sense a second edition of the earlier one. Dispersal processes after liberation are surveyed in the light of the rapid developments of the past dozen years. The processes of liberation accomplish only part of the dispersal process, and when discharged from its parent fungus body, the spore is transported to a greater or, more commonly, shorter distance by external agencies.

These are considered in the last half of the book in separate chapters on spores in the air, dispersal by insects, dispersal by larger animals; and there is a short chapter on seed-borne fungi. Not only is the literature surveyed in a stimulating manner, but also Prof. Ingold contributes original observations on nearly all these topics, especially in the final chapter on water as an agent in the dispersal of spores. Much still remains to be done, and, as he reminds us, many of the dispersal processes are still obscure. There are a bibliography of about 140 references and eight beautiful plates.

P. H. GREGORY

A SCIENTIST IN THE WORLD OF ART

Aesthetics and the Gestalt

A Collection of Essays and Other Writings. By Ian Rawlins. Pp. xi + 228 + 10 plates. (Edinburgh and London: Thomas Nelson and Sons, Ltd., 1953.) 18s. net.

THERE is nowadays a considerable number of scientists who are deeply interested in some or other of the arts, although the epoch of distinguished practitioners in both sides of the intellectual world is long past, perhaps since Leonardo da Vinci. Mr. Ian Rawlins is one of the far smaller minority who, officially trained in science, are able to indulge artistic interests to the extent of actual employment therein. He would not claim to be a creative artist, but he must allow us to recognize that he has a very weighty influence upon the arts; this influence he has exerted in two distinct ways, first as scientific adviser to the National Gallery and consultant on all questions of the safe keeping and material investigation of pictures, and secondly as a thinker and writer in the borderlines of general philosophy and aesthetics.

It is in this latter capacity that the reader meets him in this pleasant and often profound collection of essays. The principal adverse criticism might well be that the title is stupidly repellent: only a narrow range of British readers in science or art will be attracted by the word 'aesthetic', still fewer by 'gestalt'. Continental philosophical jargon causes English-speaking readers, even those concerned in the topics, to bristle like a dog, and it would be well to erase 'gestalt' from the dictionary as ruthlessly as most of us would erase 'existentialism'.

The little essays themselves belie that suggestion of self-conscious intellectualism. They are neat in thought and eminently readable, and even scientists who have thought the arts closed to them will find much to enjoy here. The pages range from a quantitative account of the atmospheric pollution of art galleries, through topics such as geometric theories of aesthetic appreciation, to historical problems from ancient Greece to modern Cambridge. Many are reviews which have appeared in *Nature*. After some cases, recently, of rather Victorian anti-religion in some scientific quarters, it is worth noticing how many of Mr. Rawlins's essays reveal a mind devoutly aware that there are aspects of experience needing other than scientific categories for their description. This is to be expected from someone who has escaped the narrowness of literary and material culture by opening a receptive mind to both.

MARTIN JOHNSON