

when it becomes economically necessary for our marginal lands to be resettled, but at present the population trend is still towards the town and away from the country.

One last point—Hart appears to accept without question that Britain's population will go on expanding rapidly. He does not realize, or will not acknowledge, that one of the best ways to become self-sufficient is to restrict our population growth. This may seem to be as much crying for the moon as is his vision of a well-managed vista of productive uplands, but in twenty years' time both may be well on the way to fulfilment, from necessity rather than choice. S. R. J. WOODLE

## LANGUAGE IN ACTION

### Words, Meanings, and Messages

Theory and Experiments in Psycholinguistics. By Ragnar Rommetveit. Pp. viii + 328. (Academic Press: New York and London; Universitetsforlaget: Oslo, 1968.) n.p.

"EXISTING fragments of psycholinguistic theory and data resemble bricks in a puzzle, the solution of which is as yet unknown. As a consequence, we are left with a multitude of fragmentary insights and with a challenge to bring such fragments together into a theoretically coherent picture of human language in action. This book is a response to such a challenge." Judged in terms of this—the author's avowed aim in writing it—Professor Rommetveit's book must be accounted a failure. But, then, given such terms, this is hardly surprising. "A theoretically coherent picture of human language in action" may, perhaps, serve as a general (in fact, a far too general) description of what psycholinguists hope one day to produce. Very few of them seriously believe that it is about to emerge. The trouble, as far as Rommetveit's summary of recent work in psycholinguistics is concerned, is that judged by this impossibly high standard much of its interest and significance tends to be obscured. This tendency is increased by the large amount of space Rommetveit gives up to very general discussions of areas of research which most psycholinguists are content for the moment to leave unexplored—in particular those covering the relationship between speech and context. It is, of course, perfectly true that nearly every time we speak what we actually say is to some extent influenced by factors in the situation in which we find ourselves. But no one, and this includes Rommetveit, has the first idea how to go about constructing a systematic account of these relationships. Nor is it the case, as Rommetveit sometimes seems to be implying, that most contemporary psycholinguists are unaware of the phenomenon. It is simply that in omitting consideration of these factors at this time they are deliberately following out a research programme which puts the study of what language is before the study of how we use it.

The reasons for concentrating linguistic studies on the discovery of the formal structure of language were clearly set out by Noam Chomsky in his review of B. F. Skinner's book *Verbal Behavior* (*Language*, 35; 1957), in which he also demonstrated that stimulus-response models were quite inadequate to account for linguistic behaviour in general and the structure of linguistic events in particular. In the same year, Chomsky published a formal description of language structure meeting reasonably strong conditions of adequacy (*Syntactic Structures* (Hague: Mouton, 1957)). Since that time considerable advances have been made by Chomsky and other linguists in refining and extending models of language structure. The speed of this advance has caused problems for psycholinguists who have found themselves constantly in danger of testing hypotheses which the linguists have already abandoned. At the same time it

is very easy to find structures that linguists have dealt with inadequately or not at all. Rommetveit makes both these points, but he also makes criticisms of this work of a fundamental nature. On page 43 in a discussion of the relationship between what he terms "message" and "utterance", he argues that the existence of synonymous utterances indicates that "The message is thus *not* of a linguistic nature". Again on page 83 he talks of "criteria of cognitive synonymy" as being "extra-linguistic considerations of a psychological nature". It is difficult to be sure what it is Rommetveit means by these and similar remarks scattered throughout the book, but it seems that he is claiming that no relationship exists between the linguist's abstract accounts of the meaning of a sentence and our understanding of it. If this is in fact what Rommetveit is claiming, then it is a very important claim indeed, because it amounts to saying that much of the psycholinguistic research done over the past ten years is groundless. It is all the more puzzling, therefore, that Rommetveit nowhere makes these points clearly and never tries to substantiate them. JAMES PETER THORNE

## ELUSIVE FLIES

### Ecology of Insect Vector Populations

By R. C. Muirhead-Thomson. Pp. vii + 174. (Academic Press: London and New York, October 1968.) 50s; \$9.50.

THIS book provides a useful review of the various trapping methods used in the study of the insect vectors of (mainly) human diseases. The words "ecology" and "populations" in the title are misleading because the body of the book concentrates almost entirely on a comparison between different methods of capturing or sampling the adult insects. There are chapters on tsetse flies which transmit trypanosomiasis, the anopheline mosquitoes implicated in malaria, the culicines concerned with filariasis, the simuliids which carry onchocercosis, and the fleas which are involved as vectors of plague from rodents to man and vectors of myxomatosis among rabbits. All these insect vectors have complex life histories, with larval stages whose environmental needs are quite different from the blood sucking adults. An account of the ecology of such insects should include a detailed consideration of these stages, which is lacking in this book. Although an assessment of the adult population of the vector is important, the author makes the defeatist assertion that it is "never possible in nature to refer trap figures to a known population". Yet methods which have largely overcome this difficulty for tsetse flies and other insects are discussed briefly in chapter eight. These methods are a refinement of the Lincoln Index method and involve marking and recapture. The basic difficulties are inherent in the use of traps which rely on visual or chemical attraction. This varies with the physiological state of the insect so that different sorts of trap capture different proportions in relation to age and sex. The area from which they come is hard to define.

In the last chapter, headed "Summary and Discussion", the author mentions a meeting held in Geneva in 1966 where mosquito ecology was discussed. There it was agreed that "there was still a serious lack of quantitative information about many aspects of mosquito ecology", and that "better methods for the measurement of numbers of mosquitoes would provide a better understanding of population dynamics".

Life-table studies, which form no part of this book, were also recommended. When they are available for the host, the parasite and the vector, we shall be in a position for the next big advance in the understanding of these complex interrelationships by the use of a population model based on measured values. Clearly there is a very long way to go before a satisfactory model can be made for even the best known interactions. The question needs to