

purpose and God eventually made woman. In this version man is nowhere given dominion over the animals.

Black suggests that the existence of these opposing views of man's relationship to animals may be evidence of an ambivalence extending at least as far back as the compilation of *Genesis* and persisting today. It manifests itself as a dualism in attitude towards the totality of other living organisms: the drive to control and dominate against a sense of the majesty and mystery of nature.

Subjugation of nature may have seemed to the Hebrew tribes the only means of permanent survival in their hard semi-arid environment. It is not surprising that God's injunction to them to control and dominate became an emphatically recurrent theme in their literature and part of their enduring contribution to the western world-view. But unrestrained exploitation of nature leads to disaster, especially in environments as fragile as that of the Hebrews. There was need therefore for an effective system of checks on over-exploitation. This was provided among the Hebrews by the concept of man's responsibility to God for the proper management of the Earth so as to avoid any diminution of its productivity. It may be supposed that the idea of stewardship would have found favour amongst those holding that other view of man's relationship to nature implicit in the Jahvist version of the creation story. And, in so far as the opposing views reflect a persisting dualism in human reactions to nature, it is intelligible that the compromise-concept of stewardship and accountability to God should have retained a place in orthodox Christian thought. "The end of man's creation," wrote Chief Justice Sir Mathew Hale in 1677, "was that he should be the vice-roy of the great God of Heaven and Earth; his Steward, Villicus, bayliff or farmer of this goodly farm . . . and hereby Man was invested with power, authority, right, dominion, trust and care . . . to preserve the face of the Earth in beauty, usefulness, and fruitfulness."

Man's present situation is that he has retained the basic presupposition that his role is to dominate and exploit the world of nature but is rapidly losing any effective sense of accountability to God for its proper management. At the same time, to be fruitful and multiply continues to be thought by many a right if no longer a duty. The result is that the ancient moral checks on over-exploitation are becoming lamentably ineffective. They might by now have been replaced by new checks securely based on increased ecological understanding and on rational population planning, but short-term economic and nationalistic considerations too often gain the upper hand in any conflict over planning the utilization of natural resources. Black can offer us no certain prospect of reaching a stable relationship between man and nature within the framework of our existing society. So far, western civilization has failed because we have been unable to "engender a feeling of responsibility for the use to which we put our control over nature". This book should make all its readers ponder on the likely consequences of continued failure. A. R. CLAPHAM

GEOGRAPHICAL ENQUIRY

Explanation in Geography

By David Harvey. Pp. xx+521. (Arnold: London, November 1969.) 65s.

DR HARVEY's book appears thirty years after Hartshorne's *The Nature of Geography* sought to define the purposes and scope of geographical enquiry and the place of geography among the sciences. There has been growing dissatisfaction in recent years with Hartshorne's analysis, derived from the writings of Kant and Hettner, of geography as the study of the areal differentiation of the Earth's surface. At least in part this dissatisfaction has resulted from the growing popularity of quantitative

methods in a subject in which their use had previously been uncommon: William Bunge's *Theoretical Geography* (1962) was the first, rather erratic, indication of the changes in purposes and methods resulting from the quantitative revolution.

Explanation in Geography is thus a timely and important book. Harvey seeks to bring order out of the diversity of both traditional and recent geographical work by concentrating on the logical structure of explanation. In so doing he looks for guidance not to the work of geographers themselves, as did Hartshorne, so much as to the work of philosophers of science and of students in neighbouring disciplines. He takes the deductive model of Hempel and Nagel as his point of departure, and in a wide-ranging survey considers the nature of theories, laws and models; the use in theory-construction of mathematical, geometric and probability languages; problems of observation, measurement, classification and data collection; and, finally, alternative models of explanation, including causal, temporal, functional and systemic models.

Unlike *The Nature of Geography*, this book is not directly concerned either with the objects or objectives of geographic study, nor with the place of geography among the sciences. Harvey draws a sharp distinction between the philosophy and the methodology of the subject, and confines his treatment to the latter. The resulting lack of a philosophical framework leads to difficulties: the concluding discussion of alternative modes of explanation, for example, seems eclectic and indiscriminating, and no clear prescription for geographical enquiry emerges. Harvey is more concerned with exploring alternatives and their implications, rather than with defining the structure and bounds of the subject itself. The absence of such a structure is most apparent when he discusses the possibility of indigenous theory in geography. He suggests that such indigenous theory may be largely geometrical in origin and to do with spatial form, in contrast to the process or temporal theories derived from other disciplines such as economics or geology. But his own terms of reference prevent him from adequately discussing how far such indigenous theory is intrinsically geographical, and to what extent it must be further defined in terms of object and scale.

This book is, without doubt, one of the two or three most important to have appeared in geography since Hartshorne's in 1939. It does not claim to be definitive, but it clarifies the problems which have developed in recent years and suggests a variety of solutions. New problems also emerge. Kuhn's views on paradigm change, with their implications for the history of geography itself and for the way in which geography as a discipline functions, are perhaps too lightly accepted, by Harvey and by others. Harvey's book is, in fact, important because the problems it raises extend to all fields of geographical enquiry. Harvey himself likens his aim to establishing the rules of cartography before beginning to create a map: he has now made it possible to go back and reconsider the problem which Hartshorne hoped to solve, that of the extent and nature of the territory to be mapped. D. R. STODDART

PALESTINE AND ITS PEOPLE

Atlas of Israel

Cartography, Physical Geography, Human and Economic Geography, History. Pp. 296. (Survey of Israel, Ministry of Labour: Jerusalem; Elsevier: Amsterdam, 1970.) 1,092s.

HAD it consisted merely of a set of maps, this book, for all the splendour of its production, could hardly have qualified for review in a scientific journal. But the Elsevier definition of an atlas has always been generous