

REVIEWS

The Order of Nature in Aristotle's Physics: Place and the Elements. By HELEN S. LANG. Pp. xii + 324. Cambridge University Press: Cambridge, New York. 1998. £ 40.00/\$ 64.95. ISBN: 0-521-62453-3.

THE concepts of place and element are central for an understanding of Aristotelian philosophy of nature. Helen Lang's book examines the underlying presuppositions and the meanings of these fundamental terms. The author begins with the topical contexts in which Aristotle formulates his basic concepts. She argues that in his *Physics*, one can find various contexts that differ from one another with regard to their respective topics and to the problems considered. It is only by taking into account Aristotle's context-relative argumentation that one could reconstruct the impressive consistency of his philosophy of nature. Lang expressly demarcates her method from other approaches, which are either primarily based on aspects of the genesis of the Aristotelian corpus (generic method of, for example, W. Jaeger, T. Irwin, D.W. Graham or J. M. Rist) or develop an interpretation independent from the concrete context of the argumentation (the acontextual method of S. Waterlow and E. Hussey among others).

Whereas Aristotle develops the concept of place mainly in Book IV of his work *Physica (Physics)*, his physical definition of the concept of element can be found primarily in Books III and IV of *De Caelo (On the heavens)*. Lang demonstrates very precisely how Aristotle starts from the concept of nature in *Physics*, then defines the concept of movement and, using this as a basis, introduces the concept of place. As the first unmoved limit of that which surrounds, place is a general and universal principle of order in the cosmos and a cause of natural motion. But how should one grasp the natural movement of the elements? This question has long been controversial (cf. M.L. Gill and J.G. Lennox (eds.), *Self-motion: from Aristotle to Newton*, Princeton 1994). In contrast to organisms, which are composed of elements, the elements themselves do not possess a soul as an intrinsic principle of movement and resting. Are they thus no self-movers? According to Lang, the answer to this question can be found not so much in *Physics*, but rather in *On the heavens*, which is thematically different but also concerned with physics. Here, Aristotle directly addresses the problem of the body and treats the elements as parts of the cosmic whole. In this context, he attributes inclination to the elements as an intrinsic principle of movement and resting. Inclination orients the elements towards their natural place and thus also fits the material basis of all things into the all-encompassing cosmic order, in which everything has its place.

Lang situates Aristotle in a broad historical setting. According to her, the cultural dependence of his philosophical system of nature resembles the contextual relativity of his individual arguments. She devotes an extensive chapter to Aristotle's rigorous rejection of a void, as it had been postulated by the philosophical systems of previous epochs. Furthermore, she emphatically points out that his natural philosophy also stands in contradiction to modern physics. Since the latter for example, also posits the existence of a void, it assumes – in contrast to Aristotle – that nature contains an element of chaos or chance. But no matter how correct it is to emphasize the dissimilarities between the different approaches, it would be a serious error to forget the points where they do indubitably intersect.

Lang's book is suitable not only for the experts but also for a wider

audience. Although it treats interesting issues of translation and interpretation in great detail, it maintains its orientation towards the fundamental questions and offers an excellent and stimulating introduction to one of the crucial themes in Aristotelian natural philosophy. However, the author adheres so strictly to her subject that some imposing questions are neglected. For example, she often mentions hindrances that disrupt the teleology of nature, but never discusses them. If 'nature is everywhere a cause of order,' as Lang quotes Aristotle repeatedly, the question arises whether hindrances are part of this order or whether they are against it. Moreover, she does not deal with the issue of the number of elements. Among other things, the reader finds no argument concerning the question of why there are two middle elements, water and air, instead of one. In *De Generatione et Corruptione*, Aristotle gives an answer when he demonstrates that there must be four elements on earth. He derives this number from the combinations of the two pairs of the polar sense qualities cold/warm and dry/wet, which are characteristic for touchable things.

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A Dictionary of Alchemical Imagery. By LYNDY ABRAHAM. Pp. xxii + 249. Cambridge University Press: Cambridge. 1998, pb.ed 2001. £16.95/\$24.95. ISBN 0-521-00000-9.

LIKE Bishop Wilberforce uneasy about an ape for an ancestor, so chemists not so long ago were embarrassed by their science's descent from alchemy. Charlatans and the deluded seemed to comprise the alchemical community, characterised by secrecy and mumbo-jumbo: and the best one could say was that like the sons in the story digging for gold in the field they inherited, they prepared it for a good crop of more useful substances. In recent years, we have had to take alchemy more seriously: not least because Robert Boyle and Isaac Newton did.

Although 'catalyst,' 'chain reaction' and 'quantum jump' have entered ordinary language, chemists since Lavoisier have sought a language free from metaphor and resonances, expressing facts concisely without misleading or anthropomorphic overtones. Similarly, chemical illustrations have become more like diagrams, where we would not expect to find powerful symbols applicable to the perplexities of ordinary life and death. It was not so with alchemy, with its rich visual and verbal language now being explored, and indeed becoming a fashionable topic.

This dictionary will be useful to anybody working on the history of chemistry up through the eighteenth century, with its entries on alembic, matrass, sand baths, volatile and vitriol. But its primary focus is literary; and literary historians have found more and more alchemical imagery in drama, poetry and prose from the Renaissance onwards – indeed there are quotations here from the late twentieth century. We find entries for example on dragons, eggs, kings, flowers, melancholia, Proteus, serpents, and unicorns. This helps us to understand the attraction of alchemy: one should note that some of the most attractive quotations are used several times, but of course most users will not read the dictionary right through. Sometimes the supposed alchemical allusion seems far-fetched; and some Biblical references seem to have been missed, as with the 'crown and purple robe' on p.159 and the illustration on p.112 which looks more to do with the raising of Lazarus than the resurrection