Zoltán Kádár, Survivals of Greek Zoological Illuminations in Byzantine Manuscripts. Akadémiai Kiadó, Budapest 1978. 138 pages; 232 black and white, 10 colour plates.

This monograph is an ingenious attempt to exploit the methods of art history for the benefit of the history of science. The author's particular concern is with zoology, and using the methods developed and made famous by K. Weitzmann he has investigated the illuminations in the one surviving manuscript from late antiquity, the Vienna Dioscorides (MS. Med. gr. 1), and the handful of Byzantine manuscripts that have zoological miniatures, the most important being the Paris Nicander (Paris Supp. gr. 247), the Venice Oppian (Marc. gr. 479) and the Pierpont Morgan Dioscorides (Morgan 652). The aim is to suggest that since certain miniatures do not appear to illustrate the text to which they are attached, they must have been designed originally to accompany an earlier text.

The book is divided into four parts, of which the last is no more than a brief statement of the author's conclusions. It opens with an account of previous research into zoological illustrations. Early in the last century scholars began to consider the nature of the illustrations that Aristotle gave to some of his zoological writings. But it was Kondakov and his pupils who first seriously posed the question whether manuscripts of the Byzantine period can be taken to reflect faithfully an earlier stage in the history of illustration. Most scholars have limited themselves to considering the Hellenistic antecedents of medieval illuminations; a few have tried to trace the story further back, and Kádár expresses the hope that it will be possible to improve upon their findings. He also notes that the possibility of benefiting from the researches of art historians has not always been borne in mind by other scholars, such as D'Arcy Thompson in his handbooks of Greek birds and fishes.

K. next offers a brief account of ancient zoology and its transmission in Byzantium. There are a number of errors here which prove that he is out of his depth in philological and historical matters; he has clearly not been able to benefit from the advice of other scholars whom he claims to have consulted. Some of his mistakes are venial or at least do not affect his argument, others are more significant. Of the latter category I note in particular a statement which recurs later (p. 23; cf. p. 49), that Tertullian, Scorpiace 1.1, refers to an illustrated copy of Nicander's poems on snakes and antidotes. The words in question are *Nicander scribit et pingit*. K.'s lack of philological equipment leaves him unable to see that *pingit* can perfectly well mean 'embellish with poetical description' (cf. Oxford Latin Dictionary, s. v., section 5). The onus of proof is on him to show that Tertullian has in mind an illustrated copy of the poems. There are several other mistakes on p. 23. How can one possibly refer to George of Pisidia as 'an eminent scholar'? It is incredible that anyone should speak of 'the favour with which

iconoclast ideology looked on secular learning and the good opportunities which it offered for the practical application of natural science'. In the same paragraph it is suggested that Byzantine science in the Macedonian period drew on the results of Arab scholarship. That is very implausible as a generalisation, even if contacts did take place between Byzantium and the Arabs and occasionally led to the exchange of knowledge. Mistakes of this kind would not be allowed to pass unquestioned in an undergraduate essay, and there is no reason why they should appear in a publication issued under the auspices of an Academy of Sciences. Another small but important detail is the dating of MS. Corpus Christi College Oxford 108 to the 12th century (p. 24), when in fact it belongs to the middle of the 9th century. (A mistake about the date of the Venice Oppian codex on p. 25 is put right on p. 91.)

The brief third chapter which concludes Part One raises an interesting question. It is known that Aristotle added illustrations to some of his zoological writings. Although they are lost, we must ask ourselves whether any traces of them can be recovered from surviving illustrations that now accompany other texts but were not originally designed for them. Despite the claims suggested by the blurb on the dust jacket the author is cautious and does not often go so far as to infer an Aristotelian or Peripatetic archetype for a later illustration. His chief example is the classification of birds that accompanies the Ornithiaca of Dionysius and fits quite closely with Aristotle's exposition (pp. 77 ff.). In other cases he resists the temptation to jump to conclusions: although the sea-urchin is illustrated in a way that suggests derivation from Aristotle, there is no evidence that Aristotle's illustrations were anything more than monochrome diagrams, and so the illuminator's model may have been a revised illustration.

Part Two (pp. 37-109) is a discussion of the miniatures in Byzantine manuscripts that may lend support to K.'s theory. Part Three relates these miniatures to other forms of Byzantine art. It is perhaps not necessary to outline in detail the argument of the main section of the book. The fundamental problem raised by the application of the author's method is to estimate the degree of originality to be attributed to individual illuminators. The illustrations that we possess are separated from their originals by several, perhaps a large number of, intermediate copies. On the occasion of each transcription some alterations might be made. When text and miniature do not correspond, can we be sure that the divergence is due to the miniature having originally belonged to another text? One may venture to suppose that it was not so in all cases. I do not think I am being unfair to the author when I say that his method fails to allow for the probability that the scribes who copied the texts were not identical with the illuminators. The latter, though no doubt working as colleagues of the scribes in the same scriptorium, perhaps did not always attend fully to the nature of the text and copy precisely their illustrated model. Unfamiliarity with medieval practices of book production and the history of texts shows elsewhere in the author's handling of his material. It is a fundamental axiom that if one of a pair of manuscripts was copied from the other, the copy will have no value except in so far as it corrects mistakes in its original or fills gaps that have subsequently appeared in it. Yet on p. 53 K. speaks of a Bologna codex as deriving at one or more removes from the Vienna Dioscorides without drawing the necessary inference. Another instance of this type of misconception occurs on p. 91 in connection with the Venice Oppian. The book as a whole would have been improved by the inclusion of a summary description of each manuscript with a brief assessment of current opinion about its place in the tradition, both for its text and its illuminations. Then one would avoid the difficulty that arises on p. 60, where some importance is claimed for MS. Chigi 53 (F. VII. 159) without the reader having the information needed in order to assess K.'s judgement. A serious palaeographical error has crept in on p. 71 in relation to MS. Paris gr. 2179. The main part of this book is indeed of the ninth century, but folios 159v-163v, illustrated on plates 102-111, are evidently a later addition to the manuscript, and the handwriting can be dated with certainty to the middle of the fourteenth century.

Without wishing to appear unduly captious I feel obliged to state that in certain other respects this book is unsatisfactory. Apart from a large number of misprints there are obscurities in the text and frequent offences against English idiom. Despite the English name of the translator the style is so strange in places that I should never have imagined it to be the work of a native speaker. Sometimes one cannot tell whether an oddity is to be put down to the translator or treated as a misunderstanding on the part of the author.

The book is richly illustrated, mainly with plates in black and white. These are for the most part successful, the main exception being the reproductions from the Paris Nicander.

The reviewer's reservations about this book are substantial. It is a pity to have to dwell on shortcomings. Studies of manuscript illumination are often strangely vulnerable. But it would be wrong if the reader formed the

impression that the enterprise was not worth undertaking in the first place; the problem which the author set out to solve is an intriguing one, and there is a prospect of some more firmly based results if art historians can exploit facts and methods established in other disciplines.

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