

# THE ENGLISH HISTORICAL REVIEW

EDITED BY  
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VOLUME XXXVI

1921



LONGMANS, GREEN AND CO.

39 PATERNOSTER ROW, LONDON  
NEW YORK, BOMBAY AND CALCUTTA

1921

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### The 'De Arte Venandi cum Avibus' of the Emperor Frederick II

THE reign of the Emperor Frederick II holds an important place in the transition from medieval to modern culture. Much has been written of the cosmopolitan intellectual life of his court, of its school of poetry as the cradle of Italian vernacular literature, of the philosophers and translators who linked it with the older world. To many it has seemed that it is under Frederick, 'the first modern man upon a throne',<sup>1</sup> rather than in the days of Petrarch, that the real beginning of the Italian Renaissance is to be sought. In any such discussion much depends upon our judgement of the personality of the emperor, that *stupor mundi* of learning whose *superstitiones et curiositates* scandalized contemporaries.<sup>2</sup> All agree as to the extraordinary activity and extraordinary interest of his mind, yet its principal literary product, his *De Arte Venandi cum Avibus*, has been strangely neglected. Mentioned in rather perfunctory fashion by other historians,<sup>3</sup> its significance has been more fully seen by Karl Hampe, who declares that this book must be studied by all 'who wish to learn to know Frederick's method of thinking and working scientifically';<sup>4</sup> yet Hampe devotes but two pages to the treatise, the greater part of which he has not read. The solid volume required for a complete text would need careful examination by the zoologist and the falconer, in relation both to its antecedents and to its additions to the store of theoretical and practical birdlore, and our knowledge of medieval zoology and of

<sup>1</sup> J. Burckhardt, *Die Kultur der Renaissance in Italien* (ed. Geiger, Leipzig, 1899), I, 4.

<sup>2</sup> Salimbene, in *Memorie Germanice Historie, Scriptores*, xxiii, 351.

<sup>3</sup> Baumert, *Geschichte der Hohenstaufen* (Leipzig, 1857), iii, 296 f.; Huillard-Breholles, *Historie diplomatique Frédéric Secundi* (Paris, 1829), introduction, pp. lxxxv-l; Ranke, *Weltgeschichte*, viii, 269; Böhmer, *Kaiser Friedrich II* (Berlin, 1912), p. 273; L. Althaus, *Stupor Mundi* (London, 1912), p. 118. The very brief treatment of the *De arte venandi* in a serious gap in the suggestive article of H. Niese, 'Zur Geschichte des geistigen Lebens am Hofe Kaiser Friedrichs II', in *Historische Zeitschrift*, cviii, 473-540 (1912). For recent materials for the study of the reign, see Hampe, *Deutsche Kaisergeschichte* (Leipzig, 1919), pp. 219 f.

<sup>4</sup> *Historische Zeitschrift*, lxxxiii, 19 (1899).

the earlier literature on falconry<sup>1</sup> is still insufficient to permit these specialists to assign the treatise to its final place. Still, a beginning must sooner or later be made, and the fresh use of manuscript material may enable even a layman to draw certain provisional conclusions concerning the sources and composition of the *De Arte* and the light it throws on the workings of the emperor's mind.

The chief obstacle to a study of the *De Arte Venandi cum Avibus* is the lack of a complete edition. The treatise contains six books, yet only two have been printed, from an incomplete manuscript then in possession of Joachim Camerarius of Nürnberg, and since supposed lost, but now clearly identifiable with MS. Pal. Lat. 1071 of the Vatican. The *editio princeps* of Velsler (Augsburg, 1596), reprinted with a valuable zoological commentary by J. G. Schneider (Leipzig, 1788-9),<sup>2</sup> not only has *lacunae* which correspond to the considerable *lacunae* and the faint and illegible portions of this codex, but it is in places quite careless, so that it does not furnish a satisfactory edition even of this mutilated copy of the first two books. It became the basis of two translations into German,<sup>3</sup> yet, with all the learning lavished on Frederick II by German writers, no one has published a comparison of the different manuscripts or edited a complete and critical text. There are two principal classes of manuscripts:

#### I. Containing the first two books only, with Manfred's additions:

M. Vatican, MS. Pal. Lat. 1071. Parchment, 111 folios, 360 x 250 mm., written not long after the middle of the thirteenth century, with valuable illustrations in a contemporary hand. The chapters are rubricated but not numbered. The first page, as well as many later pages, has been partly defaced by moisture, and has two holes in the parchment, hence the *lacunae* in the first two pages of the editions. The text breaks off in c. 80 of bk. ii, shortly before the end of the book. As this text contains the additions made by Manfred as king, it falls between his coronation in 1258 and his death in 1266. The considerable *lacuna* between fols. 16 and 17 (bk. i, c. 23), which fills pp. 47-72 of MS. B, existed already in the thirteenth century, since it is found likewise in MS. m. (fo. 28). The conclusion of bk. ii was probably also missing when the version of m was made, for m carries the text no further than the last folio of M and rounds out the sentence with a general phrase. On the other hand, the *lacuna* of

<sup>1</sup> The principal study of this material is by Werth, 'Altfranzösische Jagdliteratur', in *Zeitschrift für romanische Philologie*, xii, 146-91, 381-415, xiii, 1-34 (1888-9), who reviews the important medieval works on falconry without throwing any new light on the work of Frederick II. He overlooks the Vatican MS., mentioned by Seroux d'Agincourt in 1823, by Huillard-Breholles in 1859, and by Bethmann in 1874 (*Perts, Archiv*, xii, 350), and makes no advance in relation to the six-book text, first indicated by Jérôme Pichon in 1913 (*Bulletin de Bibliophilie*, xvi, 885-900).

<sup>2</sup> In the citations below I have referred to Schneider's text as the more accessible, but all such passages have been collated with the Vatican MS.

<sup>3</sup> By Johann Erhard Paeus, Osnabrück, 1706; and by H. Schöpfler, Berlin, 1806.

one folio after fo. 38 (ii. 33), not found in *m*, must have been made between c. 1300 and 1596. On the miniatures, see Seroux d'Agincourt, *L'Histoire de l'Art* (Paris, 1823), v, pl. 73 and text; Venturi, *Storia dell'Arte Italiana*, ii. nos. 277 f., iii. nos. 689-98; Graf zu Erbach-Fürstenau, *Die Manfredbilder* (Leipzig, 1910), c. 2. Those on the second page, one of which is reproduced in the Augsburg edition, evidently represent Frederick II on his throne; that on fo. 5<sup>v</sup>, on the margin of Manfred's first addition, is plausibly conjectured by Erbach to represent Manfred. The administration of the Vatican library plans a publication of the whole manuscript in facsimile edition. For this and other information and assistance I am specially indebted to Monsignor A. Pelzer.

M.1. Vienna, Nationalbibliothek, MS. 10948. A sixteenth-century copy, apparently from *M*, omitting the preface and introduction.

*m*. Paris, Bibliothèque Nationale, MS. Fr. 12400. Parchment, 186 folios, c. 1300, with illustrations. A French translation, made for Jean de Dampierre and his daughter Isabel, probably c. 1290-1300. See *Notices et Extraits des MSS.*, vi. 404; Pichon, in *Bulletin du Bibliophile*, xvi. 894-7 (1863). The text is that of *M*, including the additions of Manfred; probably the version is based on *M* itself, for the illustrations of *M* are followed as well as may be and the same lacuna occurs in i. 23; but the text of *M* had not yet been injured by moisture or by the holes in the first folio. On the miniatures see Vitzthum, *Die Pariser Miniaturmalerei des XIII. Jahrhunderts*, pp. 228 f. (Leipzig, 1907).

*m* 1. Geneva, MS. Fr. 170. Parchment, fifteenth century, with illustrations. Saine translation as *m*. See Senebier, *Catalogue Raisonné des MSS.*, pp. 426 f.; Aubert, in *Bibliothèque de l'École des Chartes*, lxxii. 307-9.

*m* 2. Bibliothèque Nationale, MS. Fr. 1296. A different French translation of the second book only. See Pichon, pp. 898 f.

## II. Containing the whole six books,<sup>1</sup> without Manfred's additions:

B. Paris, Bibliothèque Mazarine, MS. 3716. Parchment, 589 pages, early fifteenth century, with remnants of a coat of arms of Anjou-Sicily. P. 589: 'Explicit liber falconum cum quibus venantur.' See Pichon, pp. 888-91. I have a complete photograph of this manuscript. The illuminations, save for the first page, are confined to a few initials and have nothing in common with those of *M* and its derivatives. In bk. i B contains (pp. 32-7) after c. 15 a passage on the feeding of birds of prey which is lacking in *M*, and in c. 23 it enables us (pp. 47-72) to fill the important lacuna in the *M* group. At the close of this book (pp. 139 f.) it repeats c. 54 which it has already on p. 120. In bk. ii it omits the last sentence of the prologue and cc. 1-30, resuming with c. 31 on p. 90 of the edition; it fills (pp. 146-9) the lacuna in c. 33; inserts (pp. 256 f.) eight lines at the end of c. 76; and finishes (pp. 277-81) the treatment of hooding in c. 80 left incomplete by the break in *M*.

<sup>1</sup> The Bodleian MS. Digby 162 (sec. xiv) contains, fos. 42-54<sup>v</sup>, a loose body of extracts comprising a large part of the first half of bk. iii, incorporated as bk. iv of a treatise of which the last third book dealt with the subject of Frederick's second, even taking over Frederick's reference to his own second book (fo. 42<sup>v</sup> = MS. B, p. 282). As this manuscript begins with the fourth book of the treatise and breaks off in the middle (= MS. B, p. 323), further comparison is impossible.

C. University of Valencia, MS. 402. Parchment, 238 folios, fifteenth century, with the arms of Aragon-Sicily. Attributed in a hand of the eighteenth century to Thomas of Capua (?). See Marcelino Gutiérrez del Caño, *Catálogo de los Manuscritos existentes en la Biblioteca Universitaria de Valencia* (Valencia [1915]), i. 154 f., with a facsimile of the first page which shows a text identical with B.

D. Rennes, MS. 237, paper, 404 folios, fifteenth century: 'Liber falconum cum quibus venantur.' With chapter headings throughout and a table of contents at the close, fos. 389-404; text as in B.

E. Bologna, University Library, MS. Lat. 419 (717). See *Studi Italiani di Filologia Classica*, xvi. 254.

F. MS. formerly in possession of Baron Pichon, from whose library it passed in 1869 to M. Giraud de Savine. See *Bulletin du Bibliophile*, xvi. 891-3. Closely related to B. Copy executed for Astorre Manfredi of Faenza, probably Astorre II (†1468).

The two families of manuscripts thus correspond to two editions. The first or two-book family is Manfred's edition, with the additional matter which he discovered as well as with notes of his own. The second or six-book family was not thus revised and supplemented, but it fills the lacunae in books i and ii. Whether Manfred revised the last four books also is a question which cannot be answered from the manuscripts so far examined. The fact that the French versions likewise contain but two books shows that a two-book text was in circulation in the thirteenth century, and lends probability to Pichon's hypothesis<sup>1</sup> that Manfred's revision did not extend to the later books.

So far as they can be identified, Manfred's additions are of two sorts. One group, consisting of his own practical observations, is brief and relatively unimportant,<sup>2</sup> their brevity not appearing in the edition, where their beginning is marked by 'Rex', 'Rex Manfredus', or 'addidit Rex', but the end of the passage is not indicated. Collation with the text of the second family shows that these are ordinarily but a few lines in length.<sup>3</sup> A good example runs as follows:

Sunt et alie rationes quas Manfredus rex Sicilie, quondam divi Augusti imperatoris huius libri auctoris filius, addendas providit cum librum ipsum coram se legi mandavit. Cum aves omnes tam aquaticae et medie

<sup>1</sup> *Bulletin du Bibliophile*, xvi. 887.

<sup>2</sup> They are less important than is supposed by Helene M. Amot, *Studien zur inneren Regimentsgeschichte Manfreds* (Heidelberg, 1911), pp. 152 f.

<sup>3</sup> Besides those given above in the text, Manfred's glosses are in the edition as follows: i. 4 'Causa . . . rationabiliter' (26 lines); i. 53 'Inter modos . . . semper in aquis' (18 lines); i. 54 'Preterea aves . . . ut dicit Philosophus in libro celi et mundi' (8 lines); ii. 15 'Necessitas . . . parantur' (6 lines); ii. 53 'Amplius . . . falconum' (19 lines); ii. 59 'Et si in hoc . . . inquietas se' (18 lines); ii. 69 'Dimittens falconum . . . portandus' (3 lines). The following also appears in the Vatican text (fo. 40<sup>v</sup>), but not in the edition: 'REX. Nam tunc . . . motu' (i. c. 54, ed. Schneider, p. 60).

quam terrestres tantum laborent pro acquirendo cibo, eundo redeundo et stando super pedes fatigantur valde, sed, nocte veniente qua quiescere consueverunt, cum stando pedes quiescere volunt vicissim aliquando super uno pede aliquando super alio quiescunt, sicut accidit fixis animalibus ambulabilibus dum quiescere volunt stando super pedes, quandoque super uno pede quandoque super altero quiescunt.<sup>1</sup>

A more important class of additions is found in two passages where Manfred uses indications or material left by his father. One of these is c. 60 of book ii, a long chapter which, beginning as follows, shows that the original contained marginal directions for later additions:

REX: Cum non contineretur in hoc libro qualiter falco deciliatus poni debeat ad sedendum in pertica et levare ab ea et de diverberationibus et levis que possent in ea contingere, sed esset in margine eius scriptum quod addi deberet proreus capitulum, tanquam necessarium prelibatis documentis de falconibus editis, prout melius expedire vidimus duximus inserendum.<sup>2</sup>

A longer passage in ii. 18, explaining the insertion of ii. 1-30, shows that the original codex left spaces blank, and that loose notes and drafts were also left by the author:

REX: Cum sepe legeremus et relegeremus hunc librum ut fructum scientie caperemus et ne vitio scriptoris aliquid remanserit corrigendum, finito probemus invenimus quod dominus pater noster subsequenter ordinaverat capitulum istud primo inter alia capitula, videlicet de modis quibus habentur falcones; tamen inter capitulum istud et prohemium erant carte non scripte, quibus repertis existimavimus aliquid aliud capitulum obmissum fuisse quod scribi debebat in eis. Post spatium vero temporis, dum quereremus quatenus et notulas libri istius, eo quod videbamus ipsum ratione scriptoris correctione egere, invenimus in quibusdam cartulis quoddam capitulum intitulum de plumagio falconum, quo capitulo docebantur differentie falconum per membra et plumagia ipsorum. Nos autem rememorantes dubietatis quam habuimus cum perlegendo librum pervenimus ad capitulum predictum quod prohemium sequebatur, ubi credebamus aliquem fuisse defectum propterea quod cartas non scriptas videramus ibidem, visum fuit nobis quod capitulum de forma membrorum et plumagio falconum illic locari debebat, eo quod capitulum de cognoscendis falconibus capitulum de habendis ipsis precedere debet et quod ignota et incognita, si querantur, reperiri non possunt (quia quod est incognitum qualiter reperitur?), et si accidit inveniri, non est ratione scientie sed fortune. Propter quod, ut inventoris intentio non frustretur et avem unius speciei loco alterius non acquirat, vidimus preponendum esse capitulum quo docetur qualiter cognoscantur falcones et in quibus convenient et differant ratione plumagii et membrorum, capitulo quo docetur qualiter habeantur.<sup>3</sup>

<sup>1</sup> MS. M, fo. 8<sup>v</sup>; Schneider, p. 13.

<sup>2</sup> MS. M, fo. 90<sup>v</sup>; Schneider, p. 140.

<sup>3</sup> MS. M, fo. 52<sup>v</sup>; Schneider, p. 82; translated by Fiehon, p. 896, who (p. 898) also gives the text of *m* and *n* 2.

Another important addition to the text of the *De Arte* may be due to Manfred, namely the remarkable illustrations found in the two-book family, but absent from all manuscripts of the second family so far examined. This attribution is perhaps strengthened if we accept Erbach's identification of Manfred with a figure in the Vatican codex, and the close parallelism which he finds with the illuminations of the Manfred Bible.<sup>1</sup> Nevertheless, while the figures in their present form date, like the earliest manuscript, from Manfred's time, I do not believe that he first introduced them into the margin of the text, which it appears from his own words he scrupulously respected as his father's work. We know from Richard of San Germano that Frederick could draw, designing with his own hands the towers of Capua,<sup>2</sup> and it is probable that he at least gave the directions for these illustrations which are almost a part of the text. Probably they were omitted from the unrevised archetype of the six-book family. Whether due to Frederick or to Manfred, these illustrations constitute a document of the very first importance for the scientific observation and the artistic skill of their age. They must be studied in the Vatican codex,<sup>3</sup> save where others of the same family supply missing or injured figures,<sup>4</sup> and few pages lack such embellishments. The figures of the seated emperor and of one who is probably Manfred are Byzantine in pose and treatment, and the background of architecture and landscape shows little advance on the art of the *Exultet* rolls; but while the grouping is conventional and quite lacking in perspective, the drawing of birds is extraordinarily lifelike. There are in all more than nine hundred figures of individual birds, not only falcons in various positions, with their attendants and the instruments of the art, but a great variety of other birds to illustrate the general matter of the first book. Brilliant in colouring, the work is accurate and minute, even to details of plumage, while the representation of birds in flight has an almost photographic quality which suggests similar subjects in modern Japanese art. Whatever degree of Saracen influence the treatment may show,<sup>5</sup>

<sup>1</sup> *Die Manfredbibel*, c. 2.

<sup>2</sup> Quod ipse manu propria consignavit: *Monumenta Germaniae Historica, Scriptores*, xix. 372; cf. E. Bertaux, *L'Art dans l'Italie Méridionale*, i. 717; H. W. Schulz, *Denkmäler der Kunst in Unteritalien* (Dresden, 1880), ii. 167.

<sup>3</sup> For references to reproductions, without colours, see p. 336 above. Venturi, *Storia dell'Arte Italiana*, iii. 758-68, gives some account of the colouring.

<sup>4</sup> As in fo. 96 of *m*, which corresponds to the lacuna between ff. 58 and 59 of *M*.

<sup>5</sup> Venturi suggests the influence not only of Saracen art but of the Vienna MS. of Dioscorides (facsimile edition, Leyden, 1866), but its drawings of birds (fos. 474-83<sup>v</sup>) show no close resemblance to those in the Vatican codex. Erbach, *Die Manfredbibel*, pp. 1, 47-52, finds parallels with the illuminations of the Manfred Bible. In the face of the close agreement of the illustrations in *M* and *m*, the difference of treatment

these illustrations rest upon a close and faithful study of bird life, and thus form an essential part of the work which they accompany.

Whatever the occasion for the separate preservation of the first two books, the six books of the *De Arte* form a unit. After an introductory chapter on falconry as the noblest of arts, a subject for elaborate debate on the part of later writers,<sup>1</sup> the first book is a general treatise on the habits and structure of birds. Book ii then deals with birds of prey, their capture and training. The third book explains the different kinds of lures and their uses. The three remaining books describe, in parallel fashion, the practice of hunting cranes with gervaleons (iv), herons with the sacred falcon (v), and water birds with smaller types of falcons (vi). The style and manner of treatment are the same throughout. There are also several cross references. Thus the first book refers to the second and others,<sup>2</sup> the second to those which follow.<sup>3</sup> The preface to the second gives the plan of the later books.<sup>4</sup> Book ii. 71 refers forward to the book on gervaleons.<sup>5</sup> The opening of the third book refers to the preface.<sup>6</sup> Book iv refers back to book i,<sup>7</sup> and repeats an interesting observation already made in the earlier book.<sup>8</sup> Book v refers also to book i.<sup>9</sup>

Nevertheless it is also apparent that we have not the complete work as the author planned it, probably not even as he executed it. Besides the subjects actually treated in the following books, the preface to book ii promises an account of the care of birds during moulting and of the treatment of their diseases.<sup>10</sup> None

noted by Erbach in his figures 14 and 15 does not seem to me sufficient to indicate the derivation of us from another original than M.

<sup>1</sup> Cf. Werth, *Zeitschrift für Romanische Philologie*, xii. 391 f.

<sup>2</sup> 'De heron autem falconum et accipitrum modis plenas et evidentes manifestatur in secundo tractatu et aliis in quibus nostra intentio per se super eos descendit,' MS. B, pp. 34 f.

<sup>3</sup> 'In hoc tractatu secundo et in ceteris accedemus,' MS. M, fo. 45<sup>v</sup>; MS. B, p. 140; the edition (Schneider, p. 69) omits 'et in ceteris'. Liber is regularly used of the work as a whole, and tractatus of the individual books which compose it; but MS. B, p. 282, has 'et in 2<sup>o</sup> libro huius operis diximus'.

<sup>4</sup> MS. M, fo. 46<sup>v</sup>; MS. B, pp. 142 f., ed. Schneider, p. 70.

<sup>5</sup> 'Dicitur plane in tractatu de venatione gervaleonis ad grues,' MS. M, fo. 98; MS. B, p. 241, ed. Schneider, p. 152. Note that this remains in the two-book text.

<sup>6</sup> 'Intentio nostra ita ut in principio diximus est docere venationes quas faciunt homines cum avibus rapacibus ad predandum non rapaces,' MS. B, p. 281.

<sup>7</sup> 'Ut diximus est in capitulo de robore avium,' MS. B, p. 339. Cf. the reference to bk. iv on cranes in l. 55 (MS. M, fo. 42, ed. Schneider, p. 64).

<sup>8</sup> MS. B, pp. 54 f., repeated p. 361. See the passage below, p. 342.

<sup>9</sup> 'Nidificant autem in castris paludem et in arboribus prope aquas ut in primo tractatu diximus est,' MS. B, p. 440, where the reference is to the treatment of nesting on pp. 40 ff., where there is a lacuna in M and the edition.

<sup>10</sup> 'Quidam in conservando sanas etiam quando iam tentant pennas, ut domuscula que dicitur muta, et plenas et multe medicinarum, quodam in curando opretas ut ipse medicina et vasa necessaria ad dandum ipsas medicinas; de singulis horum instrumentorum dicitur ubi convenit,' MS. M, fo. 46<sup>v</sup>; MS. B, p. 142, ed. Schneider, p. 70.

of this is found in the six-book text, although it was common in works on falconry. There are also specific references in the text<sup>1</sup> to a subsequent discussion of moulting which does not appear. Moreover the author three times promises a book on hawks, which was evidently to be a separate work.<sup>2</sup> Now Albertus Magnus cites the *experta Frederici imperatoris* on the care of hawks,<sup>3</sup> as well as a passage on black falcons<sup>4</sup> which cannot be found in the present text, and in each case he refers at the same time to the *dicta* of King Roger's falconer, William, of whom we shall have more to say. Possibly there are still discoveries of Frederician material to be made in these directions. In view of Manfred's statement about blank pages and loose notes, it is quite probable that the emperor's work did not reach a final official form, a conclusion which would agree with the troubled character of Frederick's later years and the suddenness of his death. A separate treatise on other forms of hunting which he promised after the completion of this<sup>5</sup> was probably not written, if indeed it was ever begun.

That Frederick himself was the author can no longer be doubted. Apart from the citations by Albertus Magnus<sup>6</sup> and the specific mention by Nicholas of Iamsilla,<sup>7</sup> we have the explicit words of Manfred mentioning *dominus pater noster* as the author, as well as the reference to himself in the third person as *imperatoris Avius libri auctoris filius*.<sup>8</sup> Furthermore, Frederick appears as the author in the preface, as printed below, and in the further prefatory matter.<sup>9</sup> If he did not actually write the book with his own hand, he at least directed its composition and dictated the greater part of its substance.

<sup>1</sup> MS. M, fo. 45; MS. B, p. 138, ed. Schneider, p. 68. Also the following from bk. iii: 'dicimus infra quando dicemus de muta et de omni eo quod convenit mutationi,' MS. B, p. 324.

<sup>2</sup> MS. M, fos. 40, 57, 58<sup>v</sup>, ed. Schneider, pp. 75, 89, 92.

<sup>3</sup> *De Animalibus*, xxiii, c. 40, par. 20 (Opera, ed. Paris, 1891, xii. 477). Stadler's new edition of the *De Animalibus* from the original Cologne MS. (*Beiträge zur Geschichte der Philosophie des Mittelalters*, xv, Münster, 1916 ff.) has now reached this point (p. 1481).

<sup>4</sup> *Ibid.* par. 10, ed. Stadler, p. 1465.

<sup>5</sup> 'De reliquis vero venationibus precipue de illis in quibus nobiles delectantur vita comite post complementum huius operis dicitur a nobis,' MS. M, fo. 3, ed. Schneider, p. 4.

<sup>6</sup> *De Animalibus*, xxiii, c. 40, pars. 10, 20, ed. Stadler, pp. 1465, 1478, 1481.

<sup>7</sup> 'Ipse quoque imperator de ingenti cui perspicacitate, que precipue circa scientiam naturalem vigeat, librum composuit de natura et cura avium in quo manifeste patet in quantum ipse imperator studiosus fuerit philosophi,' Muratori, *Scriptores*, viii. 496.

<sup>8</sup> *Supra*, pp. 337 f.

<sup>9</sup> 'Auctor est vir inquisitor et sapientie amator divus Augustus Fredericus secundus Romanorum imperator Ierusalem et Sicilie rex. . . . Libri titulus talis est, Liber divi Augusti Frederici secundi Romanorum imperatoris Ierusalem et Sicilie regis de arte venandi cum avibus,' MS. M, fo. IV, ed. Schneider, p. 2.

That the *De Arte* belongs to the later years of Frederick's reign is also clear. He tells us in the preface that he had had it in mind for about thirty years, and had completed it at the urgent request of Manfred, to whom it is dedicated.<sup>1</sup> Manfred, born in 1232,<sup>2</sup> could hardly have been much interested in such a book before the age of, say, twelve, which would bring us to 1244, even if we allow that Frederick's own precocity<sup>3</sup> might have started the idea of the book in his own mind some years before 1214, when he reached the age of twenty. In 1241 the author was still gathering material, as we see from the translation in that year, under his supervision, of the Arabic treatise of the falconer Moamyn rendered into Latin by Theodore the interpreter.<sup>4</sup> The *De Arte* can safely be assigned to the period c. 1244-50, with a preference for the later years, because of its unfinished character at certain points and the revision which Manfred found necessary after his father's death. Either 1247 or 1248 has been suggested,<sup>5</sup> because of the troubles of the following years, but I incline to 1248 or the subsequent years, when Manfred was fully grown and the emperor sojourned in the neighbourhood of Apulia, to which the treatise especially relates.

The local allusions refer almost wholly to Apulia, where the emperor's correspondence shows that many of his falcons were kept.<sup>6</sup> It must be said that such allusions are rare: the form of the treatise is general and scientific, with little illustrative detail and no hunting stories. Only twice does he mention his experiences in the East, once in connexion with the flight of Syrian doves,<sup>7</sup> and again apropos of the Arabian methods of hooding falcons which he introduced into the West under the guidance of oriental falconers.<sup>8</sup> When he wants to test the incubation of ostrich eggs by the sun's heat, he has experts brought from Egypt to Apulia:

Et hoc vidimus et fieri fecimus in Apulia, vocavimus namque ad nos de Egipto peritos et expertos in hac re.<sup>9</sup>

<sup>1</sup> See the preface printed below, p. 343.

<sup>2</sup> On Manfred's youth see Böhmer-Ficker, *Regesta Imperii*, nos. 4632 b-b, and A. Kaser, *Geographie Manfreds* (Berlin, 1897), p. 1, who discusses the question of his legitimacy. If his formal legitimization could be established and dated, it might perhaps furnish a *terminus post quem* for the dedication.

<sup>3</sup> See the letter describing him as a youth c. 1207 published by Hampe, *Mitteilungen des Instituts für Österreichische Geschichtsforschung*, xxii. 597.

<sup>4</sup> See below, p. 348.

<sup>5</sup> Pichon, *op. cit.*, p. 895.

<sup>6</sup> Böhmer-Ficker, *Regesta*, nos. 2539, 2668, 2760, 2749, 2804, 2807, 2814. See below, p. 354.

<sup>7</sup> MS. M, fo. 39; MS. B, p. 124, ed. Schneider, p. 60. It is not expressly stated that the emperor saw these in the East, but this seems probable.

<sup>8</sup> MS. M, fo. 104<sup>v</sup>; MS. B, p. 258, ed. Schneider, pp. 162 f.; *op. cit.*, p. 350.

<sup>9</sup> MS. B, p. 67; lacking in M and the editions.

Pelicans are called *cofani* in Apulia.<sup>1</sup> Young birds should be protected especially against the south winds,<sup>2</sup> a precaution necessary in Frederick's dominions only in the land of the sirocco. One passage brings us more specifically to that region of the Capitanata where Frederick's favourite castles lay:

In quadam regione Apulie plane que dicitur Capitanata in tempore reditus gruum capte sunt iam grues cum girafaleis, falconibus et aliis avibus rapacibus, que erant sanguinolente in plumis et pennis sub alis et in lateribus et erant adeo debiles quod vix poterant volare et aliquae de talibus iam fuerant capte manibus hominum, cuius rei simile non audivimus in aliis regionibus visum fuisse.<sup>3</sup>

The purpose and method of the treatise can best be seen from the preface, where, planning the first comprehensive and finished work on the subject, he declares his independence of Aristotle on the ground that the philosopher had little or no practice in falconry, and indicates his own reliance on experience and the results of long inquiry among experts brought from a distance. Fragmentary and corrupt in the edition, the preface reads as follows:<sup>4</sup>

*Liber divi Augusti Frederici secundi Romanorum imperatoris, Ierusalem et Sicilie regis, de arte venandi cum avibus.*<sup>5</sup>

Præsens opus aggre[n]di<sup>6</sup> nos induxit et<sup>7</sup> insta[n]s tua pe[n]sio, fili karissime Man[fr]ide,<sup>8</sup> et ut removeremus errorem plurimum circa presens negotium qui sine arte huius<sup>9</sup> que artis erant in eodem negotio abutebantur imitando<sup>10</sup> quorundam libros mendaces et insufficienter compositos de ipso, et ut relinqueremus posteris artificiosam traditionem de materia huius libri. Nos tamen, licet proposuissimus ex multo tem[p]ore ante componere presens [opus, di]tulus fere per triginta annos propositum in scripto redigere, quoniam non putabamus nos extunc sufficere neque

<sup>1</sup> 'Pellicani qui ab Apulensibus dicuntur cofani,' MS. M, fo. 2<sup>v</sup>, ed. Schneider, p. 6. 'Pellicani quos quidam in Italia dicunt cofanos,' MS. M, fo. 6, ed. Schneider, p. 9.

<sup>2</sup> MS. M, fo. 58<sup>v</sup>, ed. Schneider, p. 92. Cf. Moamyn (MS. Corpus 287, fo. 48<sup>v</sup>).

<sup>3</sup> Domus non sit aperta a parte austri.

<sup>4</sup> MS. B, p. 301; repeated from pp. 34 f.

<sup>5</sup> The text is based on MS. M, with the portions in brackets filled in from B, C, and D. I have not included the introductory matter which follows, since it appears sufficiently in the editions.

<sup>6</sup> There is no heading in the manuscript, but the title is given in the introductory matter which follows the preface proper: 'Libri titulus talis est, Liber divi Augusti Frederici secundi Romanorum imperatoris, Ierusalem et Sicilie regis, de arte venandi cum avibus divisus et inquisitivus ad manifestationem operationum nature in venatione que fit per aves.' So M, fo. 1<sup>v</sup>. The edition omits all after 'avibus'. B and D omit 'de arte venandi cum avibus'. C has further at the end of f. c. 1 'Liber Augusti Frederici secundi Romanorum imperatoris, Ierusalem et Sicilie regis, super librum de avibus et aucupando prologus explicit'.

<sup>7</sup> agredi, B C D.

<sup>8</sup> *carissime M.S.*, R C D, the last letter blotted in C. m has *Tres chiers filz Manfroi*. The edition omits everything to this point.

<sup>9</sup> *Aschelus*, ed.

<sup>10</sup> *in imitando*, C.

[I]egeramus unquam aliquem precesisse qui huius libri materiam complete tractasset,<sup>1</sup> particule vero aliquot ab aliquibus per solum viam scite<sup>2</sup> erant et inartificialiter tradite. Ideo<sup>3</sup> multis temporibus cum sollicitudine<sup>4</sup> diligenter<sup>5</sup> inquisivimus ea que huius artis erant, exercitantes nos mente<sup>6</sup> et opere in [eodem] ut tandem sufficeremus redigere in librum] quicquid nostra [experientia aut aliorum] didicerat,<sup>7</sup> [quosque<sup>8</sup> erant ex]p[er]ti circa[praticam huius artis] non sine magnis dispendiis ad nos vocavimus<sup>9</sup> de longinquo vocatosque [undecumque] nobiscum habuimus, deflorando<sup>10</sup> quicquid melius noverant<sup>11</sup> eorumque dicta [et facta] memorie commendando. Qui quamvis arduis et inexplicabilibus fere negociis per se preediti essemus circa regnorum et imperii regimina, tamen hanc nostram intencionem [predictis<sup>12</sup> negociis non postposuimus. [In scribendo etiam<sup>13</sup> Aristotilem<sup>14</sup> [ubi oportuit] secuti sumus, in<sup>15</sup> pluribus enim sicut experientia didicimus maxime<sup>17</sup> in naturis a[vium quarundam] discrepare a veritate [videtur. Propter hoc] non sequimur principem philosophorum in omnibus, raro namque aut nunquam] venationes avium exercuit, sed nos semper [dileximus] et exercuimus. De multis vero que narrat in libro animalium dicit quosdam sic dixisse, sed id quod quidam sic dixerunt nec ipse forsitan vidit nec dicentes viderunt, fides enim<sup>19</sup> certa non proven[it] ex auditu. Quod vero multi multos [libros] scripserunt et non nisi [quendam de arte], signum est artem ipsam plurimum esse difficilem et<sup>20</sup> ad[huc diffusam]. Et dicimus quod aliqui nobiles minus negocii nobis si huic arti attente operam exhibebunt cum adiutorio huius libri [poterunt meliorem com]ponere, assidue siquidem nova et difficilia emergunt circa negocia huius artis. Rogamus autem unumquemque nobilem huic libro ex sola sua<sup>21</sup> nobilitate intendere debentem<sup>22</sup> quod<sup>23</sup> ab aliquo scientiarum perito ipsum legi faciat et exponi, minus benedictis indulgent. Nam cum ars habeat sua vocabula<sup>24</sup> propria quemadmodum et cetera artium et nos non inveniremus in gramatica Latinorum verba convenientia in omnibus, [app]osuimus illa que magis videbantur esse propinqua<sup>25</sup> per que intelligi possit<sup>26</sup> intentio nostra.

For the composition of the *De Arte* three kinds of sources were available: systematic works on natural history and related fields of science, notably Aristotle's *De Animalibus Historia*; practical treatises on falconry; and the direct observation and personal inquiries of the author. Let us examine them in this order:

1. Aristotle, says the preface, is followed where required (*ubi oportuit*). He is frequently cited in the first or general

<sup>1</sup> *completo tractasset*, ed.

<sup>2</sup> So B C D. *Sicut*, M. <sup>3</sup> So B C D. *Invenit*, M. *Et post ea*, m.

<sup>4</sup> *et studio*, insert B C D. <sup>5</sup> *diligenti*, B C D. <sup>6</sup> *in ea*, ed.

<sup>7</sup> *didicit*, B D. <sup>8</sup> *quos quod*, ed. <sup>9</sup> *venientes*, ed.

<sup>10</sup> *deflorando*, ed. <sup>11</sup> *noverant*, ed. <sup>12</sup> *venientes*, ed.

<sup>13</sup> *predicta*, M. *presentis negotii*, B C D. <sup>14</sup> *venies*, B C D.

<sup>15</sup> *artem*, ed. <sup>16</sup> *om.* ed. <sup>17</sup> *maximorum*, ed.

<sup>18</sup> *quarundam avium*, B C D. <sup>19</sup> *est*, B C D.

<sup>20</sup> *om.* C. <sup>21</sup> *ex sola*, C. <sup>22</sup> *Here the facsimile of C reads*.

<sup>23</sup> *qui*, ed. <sup>24</sup> *om.* D. <sup>25</sup> *propinqua* *can.*, B D. <sup>26</sup> *possit*, B D.

book, sometimes by name only,<sup>1</sup> sometimes specifically as the author of the *Liber Animalium*.<sup>2</sup> Once the reference is merely to a *Liber Animalium* which seems to be Avicenna's commentary on Aristotle.<sup>3</sup> In the Arabic tradition of the middle ages the *Liber Animalium* comprised the three Aristotelian treatises, *De Animalibus Historia*, *De Partibus Animalium*, and *De Generatione Animalium*, in all nineteen books. Translations of the Arabic text and of Avicenna's commentary had been made for Frederick II by Michael Scot,<sup>4</sup> and it is probably in this form that the emperor was acquainted with Aristotle's writings on natural history, for while his references can ordinarily be identified in the *De Animalibus Historia*,<sup>5</sup> not all of them can be made to square with the Greek text.<sup>6</sup> Doubtless Aristotle was used in other places where he is not cited, but Frederick's treatment is independent, and is much fuller than it could be made by the amplest use of ancient authorities, including Pliny, who is mentioned by name but once.<sup>7</sup> Thus one may compare the brief treatment of migration by Aristotle<sup>8</sup> with the account in the first book of the *De Arte*,<sup>9</sup> which uses Aristotle but treats the subject far more amply with the aid of personal observation. Schneider, the learned commentator of Aristotle and Frederick II, declares that the emperor's description of down and feathers is

<sup>1</sup> Ed. Schneider, pp. 51, 8, 13, 16, 24, 25, 31, 72 f.; *infra*, p. 346.

<sup>2</sup> *Ibid.* pp. 5, 6, 8, 43.

<sup>3</sup> 'Oculi sunt instrumenta visus, de quibus quare sint duo, quare in prona capitis locati, et quare alius instrumentis aliorum sensuum, et quomodo constant ex tribus humoribus septem tunicis, dictum est in libro animalium,' MS. M, fo. 19, ed. Schneider, p. 29, who points out (l. p. xvi; ll. 17) that this is not found in Aristotle. A long passage deals with these matters in Michael Scot's translation of Avicenna, *De Animalibus*, xiii, c. 8, fo. 32<sup>r</sup> of the printed text (Hain 2220<sup>r</sup>; copy in the Library of the University of Michigan); cf. the Canon of Avicenna, iii, 3, 1, 1, whence the passage is taken by Albertus Magnus, *De Animalibus*, i, 2, 7 (ed. Stadler, i, 72). In general the *De Arte* has little in common with Michael Scot's version of Avicenna.

<sup>4</sup> A. Jourdain, *Recherches Critiques sur les Traductions Latines d'Aristote* (Paris, 1863), pp. 129-34, 327-49; M. Steinschneider, *Die hebräischen Uebersetzungen des Mittelalters* (Berlin, 1869), pp. 478-83; J. Wood Brown, *Michael Scot* (Edinburgh, 1907), c. 3; Dittmeyer, preface to Teubner edition of the *De Animalibus* (1907), pp. xix-xxi; G. Rullberg, in *Erasm.*, viii, 151-60, ix, 92-128; H. Stadler, *Albertus Magnus de Animalibus*, p. xli; M. Grabmann, 'Forschungen über die lateinischen Aristotelesübersetzungen des XIII. Jahrhunderts', in *Beiträge zur Geschichte der Philosophie des Mittelalters*, xvii, 185 ff. (Münster, 1916).

<sup>5</sup> Thus p. 5 in Schneider's edition - B. A. viii, 2; p. 6 - viii, 12; p. 12 - i, 1; p. 16 - ix, 24; p. 24 - viii, 12; p. 25 - ix, 10.

<sup>6</sup> Thus in the passage printed below, p. 351, Aristotle is made to say that no one has seen a vulture's nest (*Hist. Animal.* ix, 11); but he elsewhere says specifically that nests have been seen (vi, 5). Nor does Aristotle say (ix, 10) that the leader of cranes is permanent, as the *De Arte* asserts (p. 25). I have not been able to compare the text of Michael Scot's translation.

<sup>7</sup> Schneider, p. 73.

<sup>8</sup> *Hist. Animal.* viii, 12.

<sup>9</sup> *op.* 16-23, ed. Schneider, pp. 19-26, with the following lacuna filled in from MS. B, pp. 47-56.

the most careful he knows,<sup>1</sup> and one has only to read the first book to see that much of it rests upon minute and varied observation. As a matter of fact, Aristotle is cited mainly where the author disagrees with him and seeks to correct him from personal experience: *non sic se habet*.<sup>2</sup> The Stagyrite is evidently viewed as a man of books, to whom the reader may be referred for learned detail,<sup>3</sup> but who has little or no practical knowledge of falcons and relies too much on hearsay.<sup>4</sup> To the author he is plainly not 'the master of them that know' birds. Nowhere does Frederick's emancipation from tradition and authority stand out more clearly than in his attitude towards Aristotle.<sup>5</sup>

With the exception of Aristotle there are few specific citations, and an examination of the literary sources would require a wide range of reading, especially in the scientific literature of the Arabs. As regards general scientific knowledge, the author follows the traditional division into climates, the third, fourth, fifth, and sixth climates being called *nostra regiones*.<sup>6</sup> Outside the Mediterranean he mentions *Britannia que vocatur Anglia*,<sup>7</sup> and Iceland, the home of the gersfalcon, between Norway and Greenland.<sup>8</sup> The *Aphorisms* of Hippocrates are cited in one passage.<sup>9</sup> In mathematics he is acquainted with the nature of tangents<sup>10</sup> and the *figura quam geometre dicunt pyramidalem*.<sup>11</sup> He fixes his seasons specifically by the progress of the sun through the zodiac.<sup>12</sup> His terminology and arrangement, as in the introductory matter and the prologue to the second book,<sup>13</sup> show

<sup>1</sup> *Reliqui Libereus Frederici II*, II, 41.

<sup>2</sup> 'Quod ergo Aristoteles dicit in libro animalium, aves unorum unguum idem sunt quod aves rapaces, non sic se habet,' MS. M, fo. 28<sup>v</sup>, ed. Schneider, p. 43. 'Non est ergo verisimile quod scribitur ab Aristotele,' MS. M, fo. 16<sup>v</sup>, ed. Schneider, p. 25. 'Non . . . ut dicit Aristoteles,' MS. M, fo. 15, ed. Schneider, p. 24. 'Quamvis Aristoteles dicat contrarium,' MS. M, fo. 29, ed. Schneider, p. 31. 'Licet dixerit Aristoteles,' MS. M, fo. 47<sup>v</sup>, ed. Schneider, p. 72.

<sup>3</sup> 'Quomodo autem generatur pullus in ovo et que membra ipsius prius apparent et formantur et quod tempus est aptius cubationi et per quantum tempus cubant aves et reliqua constantia circa hoc pretermittimus, eo quod insufficienter dictum est in libro animalium (H. A. vi. 1-9) nec spectat ad nostrum propositum, quod est de perfectis avibus rapacibus qualiter docentur rapere aves non rapaces iam exarsas de ovibus et perfectas,' MS. B, p. 67. Cf. MS. M, fo. 3<sup>v</sup> (ed. Schneider, p. 5): 'Reliqua vero omnia que pretermittimus de natura avium in libro Aristotelis de animalibus requiruntur.'

<sup>4</sup> See the prologue, *supra*, p. 344.

<sup>5</sup> Yet Hiehringer (*Keiser Friedrich II*, p. 244) can speak of the emperor as 'ein bedingungsloser Bewunderer des Aristoteles'.

<sup>6</sup> 'In nostris regionibus, scilicet octo climata quinti quarti et tertii,' MS. B, p. 515.

<sup>7</sup> *Infra*, p. 353.

<sup>8</sup> 'In quodam insula que est inter Norvegiam et Gallandiam et vocatur thestonice Yslandia et latine interpretatur contraria seu regio glaci,' MS. M, fo. 49<sup>v</sup>, ed. Schneider, p. 75. 'Noanyn has' Nansen in partibus frigidis ut in Dacia et Norodia' (MS. Corpus 287, fo. 45<sup>v</sup>).

<sup>9</sup> MS. M, fo. 60, ed. Schneider, p. 94.

<sup>10</sup> MS. M, fo. 27, ed. Schneider, p. 42.

<sup>11</sup> MS. M, fo. 75, ed. Schneider, p. 117.

<sup>12</sup> MS. B, pp. 52, 440-3.

<sup>13</sup> Ed. Schneider, pp. 2, 69 f.

training in the philosophical methods of the age. *Legitur in pluribus libris philosophorum*, we read at the beginning of the chapter on the relative size of male and female birds (II, 2), but its discussions of humours and complexions shows the influence, not merely, as Niese says,<sup>1</sup> of the physiognomic writers, but of the whole physiological tradition of the period; certainly the physiognomic element is not sufficient to support Niese's conjecture of the collaboration of Michael Scot, who died probably before 1236,<sup>2</sup> and whose *Liber Phisionomie*, dedicated to the emperor,<sup>3</sup> shows no parallelisms with the *De Arte*. At one point<sup>4</sup> there is a citation of the pseudo-Aristotelian *Mechanics*, which has not hitherto been noted in a medieval version either Arabic or Latin.<sup>5</sup>

2. Existing works on the art of falconry, Frederick characterizes as incorrect and badly written (*mendaces et insufficienter compositos*), at best dealing in rude fashion with certain small portions of the subject (*particule aliquot*).<sup>6</sup> This earlier literature in Latin and the Romance vernaculars<sup>7</sup> is known to us only in fragmentary and confused form: the letters to Ptolemy and Theodosius, the book of the enigmatical King Dancus,<sup>8</sup> the puzzling references made by Frederick's contemporaries, Albertus Magnus and Daude de Pradas,<sup>9</sup> to King Roger's falconer, William,<sup>10</sup> and to the 'book of King Henry of England'.<sup>11</sup> Further study

<sup>1</sup> *Historische Zeitschrift*, cviii, 510 n.

<sup>2</sup> Henry d'Avanches, in *Forschungen zur deutschen Geschichte*, xviii, 482 ff.; R. Förster, *De Aristoteli quae feruntur Secreta Secretorum* (Kiel, 1888), p. 29.

<sup>3</sup> Various editions: I have used Hain 14546\*, in possession of Dr. E. C. Streeter of Boston, Mass. Cf. Förster, *loc. cit.*; Brown, *Michael Scot*, p. 30.

<sup>4</sup> 'Portiones circuli quas faciunt singule penne sunt de circumferentiis equidistantibus, et illa que facit portionem maioris ambitus et magis distat a corpore avis levat magis sublevari aut impelli et deportari, quod dicit Aristoteles in libro de ingenio levandi pondera dicens quod magis facit levare pondus maior circulus,' MS. M, fo. 23<sup>v</sup>-4; MS. B, p. 89, ed. Schneider, p. 39. See *Mechanics*, ed. Apelt (Leipzig, 1888), especially co. 1, 3, ed. Bekker, pp. 848-50.

<sup>5</sup> Steinachner, *Hebräische Uebersetzungen*, p. 220 f.; *id.*, in *Centralblatt für Bibliothekswesen*, Beih. 12, p. 74; Grabmann, *Aristoteles-Übersetzungen*, pp. 200-4, 248 f., does not mention this among the pseudo-Aristotelian works translated under Manfred.

<sup>6</sup> *Prologue, supra*.

<sup>7</sup> See in general Weith, in *Zeitschrift für romanische Philologie*, xii, 146-71. Which of the Romance languages are reflected in the vocabulary of the *De Arte* is a question that must be left to the philologists.

<sup>8</sup> For this I have used the Latin text in MS. Vat. Lat. 5306, fos. 34-40<sup>v</sup>.

<sup>9</sup> Since Werth wrote, a complete text of Daude de Pradas, *Le roman des oiseaux cassades*, has been edited from the Barberini MS. by Monaci, in *Studi romanici*, v, 65-192 (1901).

<sup>10</sup> *Supra*, p. 341; Werth, *ibid.* 157-9, xlii, 11. I hope to study this problem more particularly on the basis of the Latin text.

<sup>11</sup> 'En un libro del rei Enrie d'Anlaterra lo proe el ric, que amet plus ausels e cas que non fos ano null crestias.'

Daude de Pradas, ed. Monaci, II, 1930 ff.; cf. Sachs (Brandenburg, 1865), II, 1906 ff.

is required before we can venture with confidence into this field. For our present purpose it is sufficient to point out that Frederick draws little or nothing from the known works of these authors, all of them brief and confined to a summary account of the various species of hawks and falcons and to precepts respecting their training and diseases. Even King Roger's falconer, whom Albertus Magnus quotes specifically through the intermediary of Frederick, is not mentioned in the manuscripts of the *De Arte* thus far examined. All these writers would have been useful primarily in relation to the treatment of diseases, and this part of Frederick's work, if ever written, has yet to be discovered.

Besides bringing skilled falconers from the East,<sup>1</sup> the emperor also had their writings translated for his own use. At least one such work has come down to us in numerous copies, the treatise of an Arab falconer, Moamyn, *De Scientia Venandi per Aves*, as turned into Latin by Frederick's interpreter Theodore and corrected by the emperor himself at the siege of Faenza (1240-1).<sup>2</sup> Master Theodore of Antioch, who here styles himself 'the last of the emperor's servants', is a characteristic figure of this cosmopolitan court.<sup>3</sup> In 1239 he casts the imperial horoscope at Padua;<sup>4</sup> in the register of the following year he drafts Frederick's Arabic letters to the king of Tunis, mixes his syrups of violets, and acts as his trusty messenger;<sup>5</sup> while he also appears in the mathematical correspondence of Leonardo Pisano, who addresses him as *imperialis aule summe philosophi*.<sup>6</sup> His preface, after an elaborate

The reference is apparently to a lost work in Provençal, whether prepared under the king's direction or merely dedicated to him does not appear. Werth, xii, 154 f., 166-71, thinks he can identify it as the source of other passages in *De arte*.

<sup>1</sup> Preface, *supra*; also MS. M, fo. 104<sup>r</sup> (ed. Schneider, p. 163): 'non negleximus ad nos vocare expertos huius rei tam de Arabia quam de regionibus undecunque, ab eo tempore scilicet in quo primitus proposuimus redigere in librum ea que sunt huius artis, et acceptimus ab eis quicquid melius noverant, sicut diximus in principio'.

<sup>2</sup> 'Incipit liber magistri Moamini falconarii translatus de arabico in latinum per magistrum Theodorum phisicum domini Frederici Romanorum imperatoris, et correctus est per ipsum imperatorem tempore obsidionis Faventie,' Rome, Bibliotheca Angelica, MS. 1461, fo. 72; see Narducci, *Catalogus Cod. MSS.*, p. 628. The mention of correction by Frederick at the siege of Faenza also appears in a manuscript in private hands and in the French translation mentioned below; see Werth, xii, 175-7. Other manuscripts not mentioned by Werth are: Vatican, Vat. Lat. 5366, fols. 1-37<sup>v</sup>, 68<sup>v</sup>-75<sup>v</sup> (sanc. xiii); Regina Lat. 1446, fols. 21-70 (c. 1300); University of Bologna, MS. Lat. 164 (153), fols. 33-49<sup>v</sup> (*Studi Italiani di Filologia Classica*, xvi, 169). This would seem to be the 'librum de animalibus tractatum a domino Theodoro' which is mentioned in the papal library in 1475: Moutz and Faler, *La Bibliothèque de l'Université de l'XV<sup>e</sup> Siècle* (Paris, 1887), p. 271.

<sup>3</sup> See, in general, Anselmi, *Storia dei Mussulmani di Sicilia*, iii, 692-5; Werth, xii, 177; Steinschneider, in Vienna *Sitzungsberichte*, cxlix, 4, p. 79; Langlois, *La Connaissance de la Nature et du Monde au Moyen Âge* (Paris, 1911), pp. 185 ff.; Sudhoff in *Archiv für Geschichte der Medizin*, ix, 1 (1915).

<sup>4</sup> Muratori, *Scriptores*, viii, 228.

<sup>5</sup> Böhmer-Picker, *Repetitio*, nos. 2617, 2605, 2616.

<sup>6</sup> Buoncompagni, *Scritti di Leonardo Pisano* (Rome, 1837), ii, 247, 279.

disquisition on the particular pleasure appropriate to every human act, in the course of which the *De Anima*, *Nicomachean Ethics*, and *Rhetoric* of Aristotle are cited,<sup>1</sup> concludes that hunting is the only distinctively royal amusement:

In quantum enim sunt reges non habent propriam delectationem nisi venationem. Considerans autem dominus noster serenissimus imperator Fredericus secundus semper augustus, Ierusalem et Sicilie rex, istius delectationis nobilitatem imperatoribus et regibus appropriandam duntaxat, et videns antecessores suos et contemporaneos reges in delectatione a naturali veritate appropriata sibi et exhibita non sollicitos esse sed potius sompulentos, servorum sui limitis minime imperavit presentem librum falconarii transferre de arabico in latinum, ut eorum sit recordatio que sapientium solertia advenit per experimentum et principium invenientur in posterum. Ego igitur cum obedientia et devotione debita domini mei dignum preoccupavi preceptum presens opus tractatu quaternario dividendo, primo in theoretam huius artis, secundo in medicinas ocularum infirmitatum, tertio in curas<sup>2</sup> manifestarum infirmitatum, quarto in medicamen rapidorum quadrupedum.<sup>3</sup>

Ordinarily the manuscripts have five books, the last two devoted to quadrupeds, so that only the first three concern us. Moreover of these the second and third are confined to diseases and remedies, and there is also much of this in the first book, after the preliminary classification of birds of prey, several of which have only their oriental names. It will thus be seen that the treatise, which is mainly a collection of prescriptions, has little in common with the subject-matter of the *De Arte*, and there is no indication that the emperor drew upon it.<sup>4</sup> Its popularity is attested by the numerous surviving manuscripts of the Latin text and by the French translation made by Daniel of Cremona for the use of Frederick's son Enzo, which must antedate Enzo's imprisonment in 1249.<sup>5</sup>

<sup>1</sup> 'Operationes quarum principium est per naturam et perfectio per voluntatem et cetera operationes et uniusque istarum coniungitur delectationi et tendit ad finem proprium, ut in libro de anima et Nychomachia et rhetorica declaratum est,' MS. Reg. Lat. 1446, fo. 31<sup>v</sup>. The *De Anima* was then current, but the known versions of the *Nicomachean Ethics* and *Rhetoric*, made in the thirteenth century, have not hitherto been connected with Sicily; see Grahmann, *Aristotelesstudien*, pp. 204-37, 242 f., 251-6.

<sup>2</sup> MS. 'culus'.

<sup>3</sup> Vatican, MS. Reg. Lat. 1446, fo. 32; cf. Periz, *Archiv*, xii, 320. This preface begins: 'Sollicitudo nature gubernans. . .'. Other manuscripts have a different preface, beginning, 'Reges pluribus delectationibus gaudent', and mentioning Theodore by name: e.g. Corpus Christi College, Oxford, MS. 287, fo. 45. The treatise itself begins: 'Genera autem volucrum rapifarum quibus sapius vultur gens ascupando sunt quatuor et xliii species.' There are important differences between the Corpus and the Vatican texts.

<sup>4</sup> There are some notes, possibly added at the time of Frederick's revision, e.g. at the end of bk. i: 'Sed qualiter debeat teneri pagillus secundum diversitatem avium tacuit auctor' (Corpus MS. 287, fo. 50<sup>v</sup>).

<sup>5</sup> Ciampoli, *I Codici Francesi della R. Biblioteca di S. Marco* (Venice, 1897), pp. 112-14; Paul Meyer, in *Actes of International Congress of History*, Rome, iv, 78 (1904).

After Moamyn, Daniel of Cremona dedicated to Enzo<sup>1</sup> the French version of another oriental work, the book of Yatrib, Gatriph, or Tarif, in seventy-five chapters, which he declared had first been compiled in Persian and then turned into Latin.<sup>2</sup> It is not stated that Frederick II had any connexion with the Latin translation, but the similarity of the two treatises and the date of the French version make it likely that the Latin text of Yatrib was also due to the emperor's interest in the oriental literature of falconry. Yatrib, whose favourite bird is the sparrowhawk, gives a mixture of prescriptions and practical maxims, certain of which are attributed to the Great Khan ('Chayeham rex Parthorum') and to 'Bulhassem', who may have been the author of the Arabic text (c. 1200).<sup>3</sup> This manual does not appear to have furnished material for the *De Arte*.

3. Taken as a whole, the *De Arte* gives the impression of being based far less upon books than upon observation and experience, on the part either of the author or his immediate informants.<sup>4</sup> Frederick's eager desire to learn appears from his inquiries of the Arabs both while he was in the East and later:

Nos quando transivimus mare vidimus quod ipsi Arabes utebantur capello in hac arte. Reges namque Arabum mittebant ad nos falconarios suos petitores in hac arte cum multis modis falconum, preterea non negleximus ad nos vocare expertos huius rei tam de Arabia quam de regionibus undecumque, ab eo tempore scilicet in quo primitus proposuimus redigere in librum ea que sunt huius artis, et accepimus ab eis quicquid melius noverant, sicut diximus in principio.<sup>5</sup>

It will be noted here that the emperor not only watched the Saracen falconers, but tried their methods himself and improved on them, just as he himself tested the hatching of eggs by the sun's heat in Apulia.<sup>6</sup> In the following unpublished passages we see the same spirit of observation applied to the nests of cuckoos and vultures, to the evidence of intelligence in ducks and cranes, and to the popular fable of the hatching of barnacle

<sup>1</sup> A Latin work on falconry seems also to have been dedicated to Enzo as king of Torres and Gallura, 'principi nostro excellentissimo E. Turrensi', according to a manuscript of Clare College, Cambridge (MS. 15, fo. 183): James, *Catalogue*, p. 32. Enzo seems to have used this title interchangeably with that of king of Sardinia: E. Botta, *Le Sordopas medievales* (Palermo, 1908), I, 205 f.

<sup>2</sup> The French translation is found at St. Mark's in the same manuscript with Moamyn (see Clamphell, *Codex Frenet*, p. 113), and the Latin text also occurs together in MS. Anglia 1461, which I have used.

<sup>3</sup> Werth, xii, 173. On falconry at the court of the Great Khan, see Marco Polo, ed. Yule, I, 402-7.

<sup>4</sup> Cf. Theodore's preface to Moamyn, *supra*: 'que sapientium solertia adinvenit per experimentum.'

<sup>5</sup> MS. M, fo. 104v; MS. B, p. 258, ed. Schneider, pp. 162 f.

<sup>6</sup> *Supra*, p. 342.

geese from trees or barnacles, a legend which he ascribes to ignorance of their remote nesting-places:

Quodam enim tempore apportatus fuit nidus ante nos illius avicule que dicitur praeus, et in illo nido erant pulli praei et una avicula orribilis visu deformis ut nullam fere figuram avis promitteret, ore magno sine pennis pullos multos et longos habens super totum caput usque ad oculos et rostrum. Ut igitur videremus que avis esset illa, cum diligenti custodia nutrivimus illos pullos et illam aliam aviculam et postquam perierunt vidimus quod erant cuculi, ex quo cognovimus cuculum non facere nidum sed ova sua ponit in alieno nido.<sup>1</sup>

Vidimus tamen aliquando quod quidam ayronum cineriarum et bisorum nidificant in arboribus altis, ut sunt quercus, fagi, pini, et ulmi, et similes, et etiam super terram, et quando non possunt habere arbores altas et fortes sibi convenientes et sunt ibi salices, tamarisci, aut arbores alie debiles, nunquam nidificant in ipsis debilibus, ymo nidificant potius in canetis invitis et limosis super cannas, facilius enim est homines et serpentes accedere ad salices et ad huiusmodi arbores parvas quam ad canetas.<sup>2</sup>

Est et aliud genus anserum minorum diversorum colorum albi<sup>3</sup> scilicet in una parte corporis et nigri in alia orbiculariter, que anseres dicuntur berneoles, de quibus nescimus etiam ubi nidificant. Asserit tamen opinio quorundam eas nasci de arbore sicca, dicunt enim quod in regionibus septentrionalibus longinquis sunt ligna navium in quibus lignis de sua putredine nascitur vermis de quo vermis fit avis ista pendens per rostrum per lignum siccum domae volare possit. Sed diutius inquisivimus an hec opinio aliquid veritatis continet et misimus illuc plures nuntios nostros et de illis lignis fecimus adferri ad nos et in eis vidimus quasi coquillas adherentes ligno que coquille in nulla sui parte ostendebant aliquam formam avis, et ob hoc non credimus huic opinioni nisi in ea habuerimus congruentius argumentum, sed istorum opinio nascitur, ut nobis videtur, ex hoc quod berneole nascuntur in tam remotis locis quod homines nescientes ubi nidificant opinantur id quod dictum est.<sup>4</sup>

Vidimus vulturem in nido suo unicum ovum ponere et unicum cubare, cuius rei experientiam pluries habuimus quamvis Aristotiles dicat in libro suo animalium<sup>5</sup> quod nunquam visi fuerunt nidi neque pulli vulturum.<sup>6</sup>

Et iam vidimus de anatibus et aliis pluribus avibus quod (quando) quis appropinquabat nidis suis ipse simulantes se egrotas fingebant se volare non posse et aliquantulum se cedebant ab ovis aut a pullis et sponte male volabant ut crederentur habere alas lesas aut crura. Ideo fingebant se cadere in terram ut homo sequeretur eas ad capiendum ipsas.<sup>7</sup>

Nos autem, quis vidimus, vituperamus cibum qui fit eis de avibus que comedunt pisces, multo magis reprobamus nutrimentum quod fit de

<sup>1</sup> MS. B, p. 60.

<sup>2</sup> MS. B, p. 63.

<sup>3</sup> MS. 'alibi'.

<sup>4</sup> MS. B, p. 63. On the fable respecting barnacle geese in this period see Gervase of Tilbury, *Otia Imperialis*, iii, c. 123; Liebrecht, *Des Gervases von Tilbury Otia Imperialis* (Hanover, 1856), pp. 163 f.; Carus, *Geschichte der Zoologie*, pp. 190-5.

<sup>5</sup> *Hist. Animal.* vi, c. 5; ix, c. 11.

<sup>6</sup> MS. B, p. 65.

<sup>7</sup> MS. B, p. 70.

piscibus, aves enim nutritis piscibus erant mollium carniarum et mollium pennarum et malorum humorum.<sup>1</sup> . . .

Astutiam et acumen ingenii grutum experti sumus quandoque tantam quod videns posset credere eas habere rationem. Nam postquam iactaveramus nostrum girofalconem ad eas et ipse iam segregaverat unam a societate illarum et persequabatur segregatam et fortuito grus videbat vultures stantes in campis, ipsa confugebat illuc et stabat tuta inter eas, nam girofalconis ex tunc non audebat invadere ipsam, tanquam si grus acivisset quod girofalconis vultures crederet esse aquilas ad quas non audet accedere.<sup>2</sup> . . .

The emperor who insists upon seeing for himself, who investigates legends by sending for the evidence, who seeks vultures' eyes to ascertain whether they find food by smell,<sup>3</sup> is clearly the same inquirer who shocked the good Salimbene by bringing up children in isolation to test their speech, and by cutting men open to observe the processes of digestion.<sup>4</sup> If the facts are not available, he draws no certain conclusion.<sup>5</sup> *Fides enim certa non provenit ex auditu.*<sup>6</sup>

The four last books are made up of generalized experience, with few particular instances. Elaborate in plan and almost scholastic in subdivision, *divisus et inquisitivus*, they are severely practical throughout, with little or no speculation and no digressions, but with constant reference to the author's own observation and practice. He approves or disapproves various methods, not dogmatically, but giving his reasons.<sup>7</sup> Thus he prefers a lure of cranes' wings,<sup>8</sup> but mentions the use of hens in Spain

<sup>1</sup> MS. B, p. 149.

<sup>2</sup> MS. B, p. 401.

<sup>3</sup> 'Non est ergo tenendum quod odoratu sentiant cadaver, ut quidam dicunt, sed potius visu. Quod expertum est per nos pluries, etenim quando vultures erant ex toto ciliati non sentiebant carnes proiectas ante ipsas quamvis odoratum non haberent oppositum. Experti sumus autem quod non capiunt aves cum famelicæ sint et videtibus penicillis pullum gallinæ et non capiunt ipsum nec occidebant,' MS. M, fol. 11-11'; MS. B, p. 29, ed. Schneider, p. 17.

<sup>4</sup> *Monumenta, Scriptores*, xxii. 258, 353.

<sup>5</sup> 'De temperatione cibationis errorum avium rapacium certi non sumus pro eo quod plures de avibus rapacibus adducunt in regionibus longinquis et nimis remotis a nobis, de quibus noticiam habere non possumus,' MS. M, fol. 51, ed. Schneider, p. 78. Cf. MS. B, p. 70: 'De avibus autem non rapacibus nobis est dubium an prius pascant se an pullos an simul cum pullos; cognoscere difficile videtur.'

<sup>6</sup> *Supra*, p. 344.

<sup>7</sup> 'Nos vero in loyando habemus hunc modum,' MS. B, p. 290. 'Quod non reprehendimus,' p. 310. 'Nos autem in hoc non facimus magnam vim,' p. 462. 'Hic autem modus volandi idcirco non est laudandus,' p. 499. 'Approbavimus et vidimus,' p. 516. 'Diximus de venatione ad grues quam approbavimus girofalconi propter id quod supra dictum est et venatione ayronis quam approbavimus sacro propter id quod similiter dictum est. Nunc dicamus de venatione que fit ad aves de rivis et specialiter ad anates et sibi similes, et hanc approbamus falconi peregrino,' p. 517 (beginning of bk. vi). 'Nos autem dicimus quod circa mane melius est,' p. 534. 'Hunc morem non multum reprehendimus,' p. 540.

<sup>8</sup> MS. B, p. 282.

and southern France, doves in Arabia,<sup>1</sup> and a pig covered with a hare's skin in *insula de Armenia*.<sup>2</sup> In England hunters do not shout when they lure; he has asked the reason, but can get no explanation save ancient custom:<sup>3</sup>

*Quomodo loyrant illi de Anglia.* Illi vero qui habitant Britanniam que vocatur Anglia non loyrant hoc modo quoniam nunquam loyrant equites neque vociferant sed loyrant pedites et loyrum prohibiunt in altum recte et postquam ceciderit in terram iterum prohibiunt in altum, et hoc faciunt donec falco vident loyrum et incipiat venire ad ipsum. Et postquam ille qui prohibet loyrum videt falconem prope venientem stat et dimittit ipsum venire super loyrum, et est causa hec quare non loyrant equites quia non conveniret et difficile esset prohibere loyrum et descendere iterum ad prohibendum.

*Quare non vociferant in loyratione.* De vociferatione vero quesivimus, quare scilicet non vociferant, et nesciunt reddere causam nisi tantummodo quod hoc haberent ex usu; sed opinamur antiquos eorum loyrando non vociferare pro eo scilicet quod falcones quando etiam mittuntur ad hayrones necessarium est vociferare quoniam ayro reddit se frequenter ad aquas timore falconum et cum vocibus perterretur ut surgat ad aerem sepius, et quod falcones grueri quando in principio venationis sue, hoc est antequam plures aves cepit, iactentur et emittantur ad sedium ad grues, quando inquam falcones sunt prope gruem, oportet vociferare ad grues ut surgant, falco vero audiens, si assuetus fuerit ad loyrum vociferando, credens se revocari ad loyrum per illas voces dimittet grues et redibit ad vociferantem spe loyri. Propter hoc non vociferant in loyrando, et quoniam ipsi venantur ad ayrones et ad grues plusquam ad alias aves, assuefaciunt falcones ad loyrum non vociferando.

*Quod nobis videtur.* Nos tamen dicimus quod melius est vociferare loyrando quoniam naturale est falconibus abfugere ab homine sed retrahere ipsum falconem ab hac natura non potest fieri nisi cum accidentali magisterio et convenientibus instrumentis; necessarium est igitur omnia illa ordinare per que possit habitus retineri et si perdat recuperari et inter ea per que retinetur aut recuperatur propria sunt loyrum et vox. . . .

For his investigations of falcons, Frederick had at his disposal the whole machinery of his bureaucratic administration, and if the registers of his correspondence had been preserved we should perhaps be able to follow in detail some phases of his literary work. As matters stand, the surviving fragment of

<sup>1</sup> 'Plures autem gentium in diebus nostris non utebantur loyro quod diximus ad revocandum genera falconum, scilicet (read sed ?) gallinis vivis ut in Hispania et regionibus eius vicinis occidentalibus, alii columbis vivis ut in Arabia et in ceteris regionibus meridionalibus et orientalibus; sed nos modum istorum et illorum reprobamus quia non semper de facili possunt haberi aves vive quomodomodum ale avium,' MS. B, p. 285. This passage is also found in what appears to be extracts from bk. iii of the *De Arte* in the Bodleian MS. Digby, 152, fo. 44.

<sup>2</sup> 'Item homines de insula de Armenia et de regionibus vicinis faciunt traynam leporinam suis sacris zacharis et suis layneris hoc modo,' MS. B, p. 327.

<sup>3</sup> MS. B, pp. 307 f.; MS. Digby, 152, fo. 50<sup>r</sup>.

a register for a few months of 1239-40 has forty entries concerning falcons, mentioning by name more than fifty of the emperor's falconers.<sup>1</sup> Thus in November 1239 he writes from Lodi to his superintendent of buildings in Sicily thanking him for information concerning the haunts and nests of herons, which the emperor longs to see for himself.<sup>2</sup> From Cremona he sends to his falconer Enzio for a report on his falcons, how many there are and in what condition, and especially concerning those captured at Malta and the wild ones taken during the season<sup>3</sup>; he orders another to await him with hawks at Pisa,<sup>4</sup> while he sends to Apulia for two hawks just brought by the emissaries of Michael Komnenos.<sup>5</sup> After Christmas he sends for two sacred falcons, the one called 'Saxo' and another good bird.<sup>6</sup> Although winter is not so good a season for such game,<sup>7</sup> he writes from Gubbio in January to his falconer Sardus that he is taking many fat cranes and keeping the legs as the portion of the absent falconer, who should come at once<sup>8</sup> to that noblest of sports, the hunting of cranes with gerfalcons, which the emperor describes in his fourth book.<sup>9</sup> The next day he sends a valet for training peregrine falcons in the Sicilian kingdom,<sup>10</sup> and two days later sends from Foligno for three falcons and a *turniolus*.<sup>11</sup> Ten days thereafter he sends falcons and dogs back to the south,<sup>12</sup> and various orders provide for wages and equipment of falconers.<sup>13</sup> In February he is concerned with the moulting of falcons, which are distributed among his barons to be kept during that period.<sup>14</sup> In March we read of the training of falcons in the south.<sup>15</sup> In May the emperor, once more in the Capitanata, sends nineteen falconers to Malta for

<sup>1</sup> Including Master Walter Angileus and his son William: Böhmer-Ficker, *Repetitio Imperii*, nos. 2857, 3082.

<sup>2</sup> 'De sollicitudine et labore quem assumpti super inventendis avibus heronum et locis ubi degunt te duximus commendandum, quod excellentia nostra satis debet audire nec minus presentialiter videre perceptat': Hallard-Reibolles, *Historia diplomatie*, v. 510; Böhmer-Ficker, no. 2596. Cf. the *De Arte*, MS. B, p. 442: 'In fine vero autumnus et per hyemem magna copia avium invenitur in calidis regionibus (sic) ad quas confugerunt propter cibum acquirendum sibi et propter frigus... et maxime habundant in regionibus Egypti.'

<sup>3</sup> Böhmer-Ficker, no. 2584. Besides the entries concerning falcons, there are many respecting dogs and hunting leopards, e.g. nos. 2561, 2562, 2700, 2751, 2783, 2785, 2811, 2882, 2922, 2944, 3029.

<sup>4</sup> *Ibid.*, no. 2585.

<sup>5</sup> No. 2569.

<sup>6</sup> No. 2568.

<sup>7</sup> *De Arte*, iv (MS. B, pp. 359-61).

<sup>8</sup> Böhmer-Ficker, no. 2745; cf. 2744. The hunting of cranes is also mentioned in no. 2814.

<sup>9</sup> 'Grues sunt famulosiores inter cunctas aves non expensas ad quas docentur capiendas aves rapaces, et gregatius nobilior est avibus rapacibus et est avis que melius capit grues quam alii falcones et que melius volat ad ipsas,' MS. B, p. 282.

<sup>10</sup> Böhmer-Ficker, no. 2749.

<sup>11</sup> *Ibid.*, no. 2753.

<sup>12</sup> No. 2807.

<sup>13</sup> Nos. 2539, 2591, 2686, 2706, 2744, 2814, 2817, 2856, 2857, 2863, 2907, 2929, 3082.

<sup>14</sup> Nos. 2809, 2855, 2963, 2965.

<sup>15</sup> No. 2907.

birds,<sup>1</sup> and orders that all the sparrow-hawks in the county of Molise shall be brought together under a special keeper.<sup>2</sup> When he wants live cranes for training falcons, he commands the justiciars of Terra di Lavoro, Bari, and the Capitanata to have as many as possible caught and sent to the justiciar of the Capitanata to be kept at the royal residences.<sup>3</sup> Such glimpses of the emperor's daily occupations show his passion for falconry, pursued in the midst of more urgent concerns of state and not merely in the intervals of relaxation at his palaces, and illustrate the devotion of the ideal falconer, who is represented in the *De Arte* as desiring primarily neither fame nor a plentiful supply for the table, but to have the best falcons. The successful hawker cannot be 'indolent or careless, for this art requires much labour and much study'.<sup>4</sup> Frederick's pride in his mastery of the art is illustrated by the story that, when he was ordered to become a subject of the Great Khan and receive an office at the Khan's court, he remarked that he would make a good falconer, for he understood birds very well.<sup>5</sup> And if we doubt this characteristic tale, we have at least his own prefatory words concerning falconry, *nos semper dileximus et exercimus*.

Keen sportsman as he was, Frederick II was not the man to lose himself wholly in the mere joy of hawking. His mind had also to be kept busy, his questions answered, his knowledge extended and put in order. The lessons of the *De Arte* (*scientia aviis libri*)<sup>6</sup> are essential for the falconer, but it is more than a manual of practical instruction. The first book and the earlier chapters of the second have a systematic and scientific character which give them an important place in the history of medieval zoology, while the whole treatise is pervaded by the spirit of actual observation and experiment. While the author uses the ancients, he is not blinded by them, and does not hesitate to correct them when necessary. So far as the Renaissance is characterized by the spirit of free inquiry and emancipation from authority, the *De Arte* lends support to those who would begin the new movement at the court of Frederick II.

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<sup>1</sup> No. 2982.

<sup>2</sup> No. 3056.

<sup>3</sup> No. 2801.

<sup>4</sup> MS. M, fol. 68-9, ed. Schneider, pp. 107-9.

<sup>5</sup> Albericus Trium Fontium, *Monumenta, Scriptores*, xlii. 943.

<sup>6</sup> MS. M, fol. 68, ed. Schneider, p. 108.