

Cambridge University Press

978-0-521-36726-4 - Latin Palaeography: Antiquity and the Middle Ages

Bernhard Bischoff

Frontmatter

[More information](#)

# *Latin Palaeography*

---

Antiquity and the Middle Ages

Cambridge University Press

978-0-521-36726-4 - Latin Palaeography: Antiquity and the Middle Ages

Bernhard Bischoff

Frontmatter

[More information](#)

---

Cambridge University Press  
978-0-521-36726-4 - Latin Palaeography: Antiquity and the Middle Ages  
Bernhard Bischoff  
Frontmatter  
[More information](#)

---

# *Latin Palaeography*

---

Antiquity and the Middle Ages

BERNHARD BISCHOFF

TRANSLATED BY  
DÁIBHÍ Ó CRÓINÍN AND DAVID GANZ

PUBLISHED IN ASSOCIATION WITH  
THE MEDIEVAL ACADEMY OF IRELAND



Cambridge University Press  
 978-0-521-36726-4 - Latin Palaeography: Antiquity and the Middle Ages  
 Bernhard Bischoff  
 Frontmatter  
[More information](#)

## CAMBRIDGE UNIVERSITY PRESS

University Printing House, Cambridge CB2 8BS, United Kingdom

Cambridge University Press is part of the University of Cambridge.

It furthers the University's mission by disseminating knowledge in the pursuit of education, learning and research at the highest international levels of excellence.

[www.cambridge.org](http://www.cambridge.org)

Information on this title: [www.cambridge.org/9780521367264](http://www.cambridge.org/9780521367264)

Originally published in Berlin as *Paläographische des römischen Altertums und des abendländischen Mittelalters*

by Erich Schmidt Verlag 1979; 2nd rev. ed. 1986

and © Erich Schmidt Verlag

First published in English by Cambridge University Press 1990 as

*Latin Palaeography: Antiquity and the Middle Ages*

17th printing 2014

English translation © Cambridge University Press 1990

Printed in the United Kingdom by the CPI Group Ltd, Croydon CR0 4YY

*A catalogue record for this publication is available from the British Library*

*Library of Congress Cataloguing in Publication data*

Bischoff, Bernhard.

[Paläographie des römischen Altertums und des abendländischen Mittelalters.

English]

Latin Palaeography: Antiquity and the Middle Ages / Bernhard Bischoff,

translated by Dáibhí Ó Cróinín and David Ganz.

p. cm.

Translation of: *Paläographie des römischen Altertums und des abendländischen Mittelalters*.

Bibliography

Includes indexes.

ISBN 0 521 36473 6.— ISBN 0 521 36726 3 (pbk.)

1. Paleography, Latin. 2. Manuscripts. Latin—History. 3. Manuscripts, Latin

(Medieval and Modern)—History. 4. Manuscripts, Medieval—History. 5.

Paleography. I. Title.

Z114.B5713 1989

417'.7—dc 19 88-34649 CIP

ISBN 978-0-521-36726-4 paperback

Cambridge University Press has no responsibility for the persistence or accuracy of URLs for external or third-party internet websites referred to in this publication, and does not guarantee that any content on such websites is, or will remain, accurate or appropriate.

Cambridge University Press

978-0-521-36726-4 - Latin Palaeography: Antiquity and the Middle Ages

Bernhard Bischoff

Frontmatter

[More information](#)

## Contents

<i>List of abbreviations</i>	<i>page</i> vii
<i>Preface</i>	xii
Introduction	I
<b>A. CODICOLOGY</b>	<b>5</b>
<b>I Writing materials and writing tools</b>	<b>7</b>
1 Papyrus	7
2 Parchment	8
3 Palimpsests	11
4 Paper	12
5 Wax tablets	13
6 Other writing materials and other kinds of writing	14
7 Ink and colours	16
8 Writing instruments	18
<b>II The external characteristics of the written heritage</b>	
1 The codex	20
2 Format	24
3 The layout of the page	27
4 Bindings	30
5 Rotuli and folded books	32
6 Tabulae	34
7 Charters and letters	34
<b>III Writing and copying</b>	<b>38</b>
Appendix: Forgeries	46
<b>B. THE HISTORY OF LATIN SCRIPT</b>	<b>49</b>
Preliminary remarks	51
<b>I Latin script in antiquity</b>	<b>54</b>
1 Latin script	54

Cambridge University Press

978-0-521-36726-4 - Latin Palaeography: Antiquity and the Middle Ages

Bernhard Bischoff

Frontmatter

[More information](#)*Contents*

2	Capitalis	55
3	Older Roman cursive	61
4	Later Roman cursive	63
5	Uncial	66
6	The older (eastern) half-uncial	72
7	Later half-uncial	75
8	Combinations of various scripts	78
9	Tachygraphy	80
II	<b>Latin handwriting in the Middle Ages</b>	83
1	The latin script in Ireland	83
2	Anglo-Saxon script	90
3	Visigothic (Mozarabic) script and Sinai script	96
4	The development towards minuscule in Francia and Italy	100
5	Beneventan	109
6	The perfection and triumph of Caroline minuscule	112
7	The development of handwriting from the late ninth to the twelfth century	118
8	Gothic textura (textualis)	127
9	Gothic cursive and bastarda	136
10	Humanistic script	145
III	<b>Supplement</b>	
1	Abbreviations	150
2	Punctuation and related matters	169
3	Musical notation	173
4	Numerals	176
5	Ciphers	177
C.	<b>THE MANUSCRIPT IN CULTURAL HISTORY</b>	179
1	Roman and Christian antiquity	181
2	The early Middle Ages	190
3	The Carolingian period	202
4	From the tenth to the twelfth century	212
5	The late Middle Ages	224
6	The age of humanism	235

*Plates (between pages 238 and 239)**Bibliography* 239*Index of manuscripts cited**Index of names and subjects**Index of authors cited*

Cambridge University Press

978-0-521-36726-4 - Latin Palaeography: Antiquity and the Middle Ages

Bernhard Bischoff

Frontmatter

[More information](#)

## Abbreviations

Abh.	Abhandlungen
Arch.	Archiv
<i>Arch. f. Dipl.</i>	<i>Archiv für Diplomatie, Schriftgeschichte, Siegel- und Wappenkunde</i>
<i>Arch. f. Urk.</i>	<i>Archiv für Urkundenforschung</i>
<i>Arch. Pal. Ital.</i>	<i>Archivio Paleografico Italiano</i> (edd.: Ernesto Monaci et al., Rome 1882 ff.)
<i>Arch. stor. ital.</i>	<i>Archivio storico italiano</i>
Arndt–Tangl	Wilhelm Arndt/Michael Tangl, <i>Schrifttafeln zur Erlernung der lateinischen Paläographie</i> 1/2 (4th ed.), 3 (2nd ed.) (Berlin 1904–06)
Baesecke, <i>Lichtdr.</i>	Georg Baesecke, <i>Lichtdrucke nach altdeutschen Handschriften</i> (Halle/S. 1926)
Battelli, <i>Lezioni</i> <sup>3</sup>	Giulio Battelli, <i>Lezioni di paleografia</i> , 3rd ed. (Vatican City 1949)
Becker, <i>Catalogi</i>	Gustavus Becker, <i>Catalogi bibliothecarum antiqui</i> (Bonn 1885)
<i>Bibl. Éc. Chartres</i>	<i>Bibliothèque de l'École des Chartes</i>
Bischoff, <i>Kalligraphie</i>	Bernhard Bischoff, <i>Kalligraphie in Bayern. Aches bis zwölftes Jahrhundert</i> (Wiesbaden 1981)
Paläographie	Paläographie, in: Wolfgang Stammeler (ed.), <i>Deutsche Philologie im Aufriß</i> 1 <sup>2</sup> (Berlin–Bielefeld–Munich 1957), cols 379–452; also separately printed
<i>Paléographie</i>	<i>Paléographie de l'antiquité romaine et du moyen âge occidental</i> (transl. by Hartmut Atsma and Jean Vezin; Paris 1985)
<i>Schreibschulen</i>	<i>Die südostdeutschen Schreibschulen und Bibliotheken in der Karolingerzeit</i> . 1. <i>Die bayrischen Diözesen</i> , 3rd ed. (Wiesbaden 1974; 1st ed. Leipzig 1940); <i>Die vorwiegend österreichischen Diözesen</i> (Wiesbaden 1980)
Bruckner, <i>Scriptoria</i>	Albert Bruckner, <i>Scriptoria mediæ aevi Helvetica</i> , to date 14 vols (Geneva 1935–78)
Bull.	Bullettino
<i>Catal. manosc. datati</i>	<i>Catalogo dei manoscritti in scrittura latina datati o databili</i> 1

*Abbreviations*

- (ed. Viviana Jemolo; Turin 1971); 2 (ed. Francesca di Cesare; Turin 1982)
- Catal. mss. datés* Charles Samaran/Robert Marichal, *Catalogue des manuscrits en écriture latine portant des indications de date, de lieu ou de copiste*, to date vols 1–3, 4/1, 5–7 (Paris 1959 ff.)
- Catal. of dated MSS., Switzerland* *Catalogue of the dated manuscripts written in the Latin script from the beginnings of the Middle Ages to 1550 in the libraries of Switzerland* 1 (Beat Mathias von Scarpatetti). Text and plates (Dietikon-Zürich 1977)
- Cavallo, *Libri* Guglielmo Cavallo, *Libri e lettori nel medioevo* (Bari 1977)
- Cencetti, *Compendio* Giorgio Cencetti, *Compendio di paleografia latina* (Naples 1963)
- Lineamenti* *Lineamenti di storia della scrittura latina* (Bologna 1954)
- Pal. lat.* *Paleografia latina* (Guide 1; Rome 1978)
- Chatelain, *Pal. class. lat.* Émile Chatelain, *Paléographie des classiques latins* 1/2 (Paris 1884–1900)
- ChLA* Albert Bruckner/Robert Marichal et al., *Chartae Latinae Antiquiores*, 1–15, 17–18, 20–22 (Olten-Lausanne 1954–67; Zürich 1975)
- Chroust, *Monumenta* Anton Chroust, *Monumenta palaeographica, Denkmäler der Schreibkunst des Mittelalters*, ser I and II (Munich 1902–17); ser III (Leipzig 1931–40)
- CLA* Elias Avery Lowe, *Codices Latini Antiquiores*, 1–11 and Suppl. (Oxford 1934–71); 2<sup>2</sup> (ibid. 1972). Addenda by B. Bischoff and V. Brown, *Mediaeval Studies* 47 (1985) 317–366, with 18 plates (cited as CLA Addenda).
- Clm* *Codex Latinus Monacensis*
- Crous-Kirchner, *Schriftarten* Ernst Crous/Joachim Kirchner, *Die gotischen Schriftarten* (Leipzig 1928)
- Datierte Hss.* *Datierte Handschriften in Bibliotheken der Bundesrepublik Deutschland* (ed. Johanne Autenrieth) 1. Frankfurt am Main (Gerhard Powitz; Stuttgart 1984)
- Degering, *Schrift* Hermann Degering, *Die Schrift. Atlas der Schriftformen des Abendlandes vom Altertum bis zum Ausgang des 18. Jahrhunderts* (Berlin 1929)
- Écr. lat.* Jean Mallon/Robert Marichal/Charles Perrat, *L'Écriture latine de la capitale romaine à la minuscule* (Paris 1939)
- Ehrle-Liebaert, *Specimina* Franz Ehrle/Paul Liebaert, *Specimina codicum Latinorum Vaticanorum* (Bonn 1912)
- Exempla scripturarum* 1 Bruno Katterbach/Augustus Pelzer/Carolus Silva-Tarouca, *Codices Latini saeculi XIII* 1, Vatican City 1928); B. Katterbach/C. Silva-Tarouca, *Epistolae et instrumenta saeculi XIII* (11, ibid. 1930); Iulius Battelli, *Acta pontificum*<sup>2</sup> (111, ibid. 1965)
- Fichtenau, *Mensch und Schrift* Heinrich Fichtenau, *Mensch und Schrift im Mittelalter* (Vienna 1946)

*Abbreviations*

- |   |   |
|---|---|
| Fischer, <i>Schrifttafeln</i>                     | Hanns Fischer, <i>Schrifttafeln zum althochdeutschen Lesebuch</i> (Tübingen 1966)   |
| Foerster, <i>Abriß</i> <sup>2</sup>               | Hans Foerster, <i>Abriß der lateinischen Paläographie</i> , 2nd revised and enlarged edition (Stuttgart 1963)   |
| Gumbert, <i>Utrechter Kartäuser</i>               | J.P. Gumbert, <i>Die Utrechter Kartäuser und ihre Bücher</i> (Leiden 1970)  |
| <i>It. Med. e Um. Jahrb.</i>                      | <i>Italia Medioevale e Umanistica Jahrbuch</i>  |
| John, <i>Lat. Pal.</i>                            | James J. John, Latin Paleography, in: James M. Powell (ed.), <i>Medieval Studies, An Introduction</i> (Syracuse, N.Y. 1976) 1–68  |
| <i>Katal. d. dat. Hss., Österreich</i>            | <i>Katalog der datierten Handschriften in lateinischer Schrift in Österreich</i> , 1–4 (F. Unterkircher) 5 (Franz Lackner), 6 (Maria Mairold) (Vienna 1969 ff.)                 |
| <i>Katal. d. dat. Hss., Sweden</i>                | <i>Katalog der datierten Handschriften in lateinischer Schrift vor 1600 in Schweden</i> 1/2 (Monica Hedlund) Text and plates (Stockholm 1977)                                   |
| Ker, <i>Catal. of MSS.</i>                        | Neil R. Ker, <i>Catalogue of Manuscripts containing Anglo-Saxon</i> (Oxford 1957)   |
| <i>Engl. MSS.</i>                                 | <i>English Manuscripts in the Century after the Norman Conquest</i> (Oxford 1960)   |
| Kirchner, <i>Script. Goth. libr.</i>              | Joachim Kirchner, <i>Scriptura Gothica libraria</i> (Munich–Vienna 1966)  |
| <i>Script. Lat. libr.</i> <sup>2</sup>            | <i>Scriptura Latina libraria</i> , ed. alt. (Munich 1970)   |
| Koehler, <i>Karol. Min.</i>                       | Wilhelm Koehler (Köhler), <i>Die karolingischen Miniaturen</i> , 1–3 (Berlin 1930–60)   |
| Koehler/Mütherich, <i>Karol. Min.</i>             | Wilhelm Koehler/Florentine Mütherich, idem 4–5 (Berlin 1971ff.)   |
| Koennecke, <i>Bilderatlas</i>                     | Gustav Koennecke, <i>Bilderatlas zur Geschichte der Deutschen Nationalliteratur</i> (Marburg 1887)  |
| Lehmann, <i>Erforschung</i>                       | Paul Lehmann, <i>Erforschung des Mittelalters</i> , 1–5 (Stuttgart 1959–62; 1: 1st edition Leipzig 1941)  |
| Lesne, <i>Livres</i>                              | Émile Lesne, <i>Les livres, «scriptoria» et bibliothèques du commencement du VIIIe à la fin du XIe siècle</i> (Histoire de la propriété ecclésiastique en France 4, Lille 1938) |
| Lindsay, <i>Notae Latinae</i>                     | W.M. Lindsay, <i>Notae Latinae. An account of abbreviations in Latin manuscripts of the early minuscule period (ca. 700–850)</i> (Cambridge 1915; reprinted Hildesheim 1965)    |
| <i>Litterae Textuales</i>                         | <i>Litterae Textuales</i> [= <i>Codicologica</i> 1976 ff.]; ed. by J.P. Gumbert et al. (Amsterdam 1972–76; Leiden 1976 ff.)   |
| Lowe, <i>Palaeographical Papers</i>               | Elias Avery Lowe, <i>Palaeographical Papers 1907–1965</i> 1/2 (Oxford 1972)   |
| Mallon, <i>De l'écriture Paléographie romaine</i> | Jean Mallon, <i>De l'écriture, recueil d'études</i> (Paris 1982)  |
| Mazal, <i>Gotik</i>                               | <i>Paléographie romaine</i> (Madrid 1952)<br>Otto Mazal, <i>Buchkunst der Gotik</i> (Graz 1975)   |

### Abbreviations

<i>Romanik</i>	<i>Buchkunst der Romanik</i> (Graz 1978)
<i>Mittelalt. Bibliothekskat. Deutshl.</i>	<i>Mittelalterliche Bibliothekskataloge Deutschlands und der Schweiz</i> , vols. 1 and 2 ed. Paul Lehmann; vol. 3 ed. Paul Ruf; 4, 1 ed. Christine Elisabeth Ineichen-Eder; vol. 4, 2 ed. Günter Glauche and Hermann Knaus (Munich 1918–79)
<i>MGH</i>	<i>Monumenta Germaniae Historica</i>
Micheli, <i>L'Enluminure</i>	G.L. Micheli, <i>L'Enluminure du haut moyen âge et les influences irlandaises</i> (Brussels 1939)
Milkau/Leyh, <i>Handbuch</i> <sup>2</sup>	Fritz Milkau/Georg Leyh, <i>Handbuch der Bibliothekswissenschaft</i> , 2nd ed. (vol. 1 Wiesbaden 1952; 3, 1 <i>ibid.</i> 1955)
Millares Carlo, <i>Tratado</i>	Agustín Millares Carlo, <i>Tratado de paleografía española</i> (with José Manuel Ruiz Asencio) 1–3; 3rd ed. (Madrid 1983)
<i>Mitteil. hist. Österr. Geschichtsforsch.</i>	<i>Mitteilungen des Instituts für Österreichische Geschichtsforschung</i>
<i>Mss. datés, Belgique</i>	François Masai/Martin Wittek (ed.), <i>Manuscripts datés conservés en Belgique</i> , 4 vols. to date (Brussels-Ghent 1968 ff.)
<i>Mss. datés, Pays-Bas</i>	Gerard Isaak Liefstinck, <i>Manuscripts datés conservés dans les Pays-Bas</i> , 1 vol. to date (Amsterdam 1964)
Münchener Beiträge	<i>Münchener Beiträge zur Mediävistik und Renaissance-Forschung</i>
<i>New Pal. Soc.</i>	<i>The New Palaeographical Society. Facsimiles of Ancient Manuscripts</i> , ser I–II (ed. E.M. Thompson et al.; London 1903–30)
<i>Nomenclature</i>	<i>Nomenclature des écritures livresques du IXe au XVIIe siècle</i> (B. Bischoff, G.I. Liefstinck, G. Battelli) (Paris 1954)
Nordenfalk, <i>Das frühe Mittelalter</i>	Carl Nordenfalk in André Grabar/Carl Nordenfalk, <i>Das frühe Mittelalter vom vierten bis zum elften Jahrhundert</i> (Die großen Jahrhunderte der Malerei) (Geneva 1957)
<i>Die romanische Malerei</i>	idem in André Grabar/Carl Nordenfalk, <i>Die romanische Malerei vom 11. bis zum 13. Jahrhundert</i> (Geneva 1958)
<i>Zierbuchstaben</i>	<i>Die spätantiken Zierbuchstaben</i> . Text and plates (Stockholm 1970)
<i>Paläographie 1981</i>	<i>Paläographie 1981</i> . Colloquium du comité International de Paléographie, Munich, 15–18 Sept. 1981 (Proceedings, ed. by G. Silagi). Münchner Beiträge 32 (Munich 1982)
<i>Pal. Soc.</i>	<i>The Palaeographical Society, Facsimiles of Manuscripts and Inscriptions</i> , ser I–II (ed. E.A. Bond et al.; London 1873–94)
Petzet/Glauning, <i>Deutsche Schrifttafeln</i>	Erich Petzet/Otto Glauning, <i>Deutsche Schrifttafeln des IX. bis XVI. Jahrhunderts aus Handschriften der K. Hof- und Staatsbibliothek (4/5: der Bayerischen Staatsbibliothek) in München</i> , 1–3 (Munich 1910–12), 4/5 (Leipzig 1924–30)
<i>Rev. Bénéd.</i> s. (I ex.)	<i>Revue Bénédictine</i> saeculi (I exeuntis)

### Abbreviations

Santifaller, <i>Beiträge</i>	Leo Santifaller, <i>Beiträge zur Geschichte der Beschreibstoffe im Mittelalter. 1. Untersuchungen. Mitteilungen d. Inst. f. Österr. Geschichtsforschung, supplementary volume 16, 1</i> (Graz-Cologne 1953)
Schramm/Mütherich <i>Denkmale</i>	Percy Ernst Schramm/Florentine Mütherich, <i>Denkmale der deutschen Könige und Kaiser</i> (Munich 1962)
Seider, <i>Lat. Pap.</i>	Richard Seider, <i>Paläographie der lateinischen Papyri</i> , 1, 2/1, 2/2 (Stuttgart 1972 ff.)
Settimane	Settimane di Studio del Centro Italiano di Studi sull'Alto Medioevo
Steffens <sup>2</sup> , <i>Lateinische Paläographie</i>	Franz Steffens, <i>Lateinische Paläographie</i> , 2nd ed. (Berlin 1929)
Stiennon, <i>Paléographie Stud. Mitteil. OSB</i>	Jacques Stiennon, <i>Paléographie du Moyen Age</i> (Paris 1973) <i>Studien und Mitteilungen zur Geschichte des Benediktinerordens und seiner Zweige</i>
Thomson, <i>Bookhands</i>	S. Harrison Thomson, <i>Latin Bookhands of the Later Middle Ages 1100–1500</i> (Cambridge 1969)
Tjäder, <i>Nichtliter. lat. Pap.</i>	Jan-Olof Tjäder, <i>Die nichtliterarischen lateinischen Papyri Italiens aus der Zeit 445–700</i> , 1 (Lund 1954/5); 2 (Stockholm 1982)
Traube, <i>Nomina Sacra</i> <i>Vorl. u. Abh.</i>	Ludwig Traube, <i>Nomina Sacra, Versuch einer Geschichte der christlichen Kürzung</i> (Munich 1907) <i>Vorlesungen und Abhandlungen</i> , 1–3 (Munich 1909–20)
<i>Catal. of dated and datable MSS</i>	<i>Catalogue of dated and datable manuscripts c. 700–1600 in the Department of Manuscripts in the British Library</i> (London 1979); <i>C. of d. and d. MSS ca. 435–1600 in Oxford Libraries</i> (ed. Andrew G. Watson; London 1984)
Wattenbach, <i>Schriftwesen</i>	Wilhelm Wattenbach, <i>Das Schriftwesen im Mittelalter</i> , 3rd enlarged ed. (Leipzig 1896)
<i>Zbl. f. Bw.</i>	<i>Zentralblatt für Bibliothekswesen</i>
Zimmermann, <i>Vorkarol. Min.</i>	E. Heinrich Zimmermann, <i>Vorkarolingische Miniaturen. Text and plates</i> (Berlin 1916)
<i>Z.</i>	<i>Zeitschrift</i>
<i>Z. f. d. Alt.</i>	<i>Zeitschrift für deutsches Altertum</i>

The publisher wishes to acknowledge the help and good advice of Dr Rosamond McKitterick in helping to prepare the typescript for publication.

Cambridge University Press

978-0-521-36726-4 - Latin Palaeography: Antiquity and the Middle Ages

Bernhard Bischoff

Frontmatter

[More information](#)

---

## *Preface*

This book grew out of my contribution to Wolfgang Stammer's *Deutsche Philologie im Aufriß* entitled 'Paläographie mit besonderer Berücksichtigung des deutschen Kulturgebiets', in which the concentration was on the Germanic countries. In that essay it was only possible to sketch briefly the evolution of Latin script from Antiquity, and the forms of writing outside the Germanic countries. My suggestion that a new edition might develop these aspects was welcomed by the editor, and the expanded work enabled me to explain my views on controversial questions in the palaeography of Antiquity, and perhaps to bring one or two of them closer to a solution. I am grateful to Dr Ellinor Kahleyss(†) and to Hugo Moser, who inaugurated their series *Grundlagen der Germanistik* with this new volume. I also thank Michael Bernhard for his drawings of Latin abbreviations, and Gabriel Silagi for his help in correcting the proofs of the German editions.

A second, revised German edition (Berlin 1986) contains substantial additions to the notes and bibliography to keep abreast of the constant developments in international research on palaeography. Here Monsignor Leonard E. Boyle's bibliography (*Medieval Latin Palaeography*, Toronto 1984) and the critical surveys by Jan-Olof Tjäder in *Eranos* have proved particularly helpful. A French translation, by Hartmut Atsma and Jean Vezin, has also appeared (Editions Picard, Paris 1985) which included three new figures and twenty-three plates. These plates have also been included in this first English edition, together with facing sample transcriptions.

I must include a word of thanks to the many friends and colleagues who have assisted me over the years by sending me their books and articles, and I want especially to remember those who have died: Francis Wormald, Franco Bartolini, Giorgio Cencetti, Giovanni Muzzioli, Charles Samaran, Jean Mallon, Neil Ker, Albert Bruckner, Otto Pächt, and T. J. Brown. Without their help this book might not have been completed, and would certainly have contained far more gaps.