THE USES OF ITALIC
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A PRIMER OF INFORMATION REGARDING THE ORIGIN AND USES OF ITALIC LETTERS

BY

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THE USES OF ITALIC

HISTORICAL INTRODUCTION

The first types were cut in imitation of the Gothic or black letter handwriting employed at that period in copying Bibles, missals, and the like. It was large and angular and the lines were very coarse and black. These peculiarities gave it the name. Its characteristics made it easy to read even in the dim light of a church or by the failing eyes of the aged. This form of type, however, was only suitable for large pages. When reduced in size it became very difficult to read, being an almost indistinguishable blur on the page.

Type of the Mazarin Bible (exact size).

The cost of materials and the unwieldiness of the great folio volumes soon caused a demand for smaller books. Gutenberg's 36-line Bible was almost immediately replaced
by the 42-line Bible. A reduction of one sixth in the number of pages of a book as large as the Bible would effect a very important saving in the cost of material and labor, especially when we remember that the early printing press was a very laborious and slow affair. Gutenberg's press was capable of printing only twenty sheets an hour, or one
sheet every three minutes. The invention of the movable bed, about the year 1500, increased the output of the press to two hundred sheets an hour. In 1786 the speed had risen only to two hundred and fifty sheets an hour. Cheap printing waited for the application of power to machinery.

The big book with the big type was well enough for churches and libraries. But the purpose of printing was soon seen to be the spread of intelligence through the popularizing of literature. Books were to be placed in the hands of the people, not simply of the priests, nobles, and professional men. That end could only be accomplished by making books cheap and portable, that is to say small. To this end the printers soon addressed themselves to the task of devising forms of type which should be smaller, so as to reduce the number and size of pages required for a book without sacrifice of legibility. A clear, clean cut type, with sharp lines and simple forms, capable of compression without loss of distinction, was the great need.

The first important departure was the cutting of Roman type. The capitals were imitated from the letter forms used in Roman inscriptions. In the earlier forms the lower-case letters were rough and uncouth, much resembling the Gothic forms. The inventor of this form is not known, but it was certainly employed by the German printers Sweynheim and Pannartz at Subiaco, near Rome, as early as 1467. Their example was followed by several imitators and improvers, but its form was not definitely settled until Nicholas Jenson cast his fonts in Venice in 1470 or 1471. It is doubtful if any more perfect Roman types than those of Jenson have ever been produced. The superiority of this type soon caused its general adoption except in Germany. England was slow in coming into line. Caxton never used anything but Gothic type. Roman type was not introduced into England at all until 1509, and then had to make its way against the older forms backed by English conservatism. Germany has never adopted the Roman letter for general use but makes some use of it in scientific works.

The next step was the invention of Italic types by Aldus Manutius, of Venice, in 1501. He took for his model the
handwriting of the poet Petrarch and produced a type not essentially different from the modern Italic. Originally the Italic letters were lower-case only, Roman capitals being retained. The incongruousness of this combination was, however, so evident that Italic capitals were soon designed and then the new fonts were complete. The Aldine capitals used with Italic lower-case were small, the ancestors of the small capitals of today. Aldus used the Italic type as a text letter, and such use continued frequent for a century.

1 lle meas errare bones, ut ternis, et ipsum
Ludere, quae uellem, calamo permisit agrum.
Non eodem in uideo, miror magis, mundi potis me.
V sqwadeo urbam agris, en iste se egas.

Type of the Aldine Virgil, 1501 (exact size).

At the present day, except in Germany, the three forms of type have their distinct uses. Gothic, variously known as Black Letter, Old English, Priory Text, Cloister, etc., is used only for special work, particularly in ecclesiastical printing. The modern type called “gothic” is not derived from it. Roman is the general text letter. Italic has ceased to be a text letter, but serves a useful purpose for certain special uses which are to be considered at length in the following pages.
RULES FOR THE USE OF ITALIC

ITALIC has, in general, four uses:

1. for emphasis.
2. to set off a title, word, or passage from the context.
3. for running titles, sub-heads, the headings of tables, and other like places where something different from the text letter seems needed for variety.
4. for display purposes in commercial work.

One very important principle should always be observed in the use of italic for emphasis. Emphasis should always be used sparingly. Make the words do their work. Do not try to supplement poverty of thought and weakness of expression by italics, capitals, and other marks of emphasis. Where there is too much emphasis attempted no emphasis is secured. This fault was much more common formerly than now.

The accompanying reproduction of a page from a book printed in 1690 (place not given, but probably London) illustrates several of the faulty uses of italics common at that time. An entire paragraph is italicized (quite unnecessarily) for emphasis. All proper names and adjectives derived from them are italicized where they occur in the regular text and printed in roman where they occur in italicized passages. Note the frequent capitalization for emphasis and especially the italic capital with roman lower-case in the first line of the second paragraph. This is a frequent usage in this particular book. In this book all quotations are printed in italic without quote marks. The paper, composition, and presswork of the book are very poor. It represents English printing in its worst period.

Moderation in the use of italics is so important that in many cases the compositor is justified in ignoring markings for italic in his copy where they are too profuse. The author is often surprised and disappointed at the appearance
was dash'd in pieces. So that what is here declared, were it reconcilable to Truth, yet could not consist with possibility, unless by one only exception, that the English, who by their new League with France, were to be the breakers of the Peace of Aix, and by the Triple League, were to fulfil their Obligations to both Parties, should have stanch'd the Sword in our own Bowels.

But such was the Zeal of the King and his select Instrument, for the Promotion of Slavery and Popery, that it easily transported them to lay what was untrue, or to undertake what was impossible, for the Service of the French.

And now the French King seeing the English engaged past all retreat, comes in with his Fleet, not to fight, but only to sound our Seas, to spy our Ports, to learn our Building, to learn our way of fighting, and to consume ours, and preserve his own Navy. For no sooner had the D. of York, as the design was laid, suffered himself to be shamefully surprized, but the Vice Admiral, the Earl of Sandwich was sacrificed, and the rest of the English Fleet so torn and mangled, that the English Honour was laid not in the Dust, but in the Mud, while his Royal Highness did all that was expected from him; and M. d'Estrees, who commanded the French, did all that he was sent for.

There were three other several Engagements of ours with the Dutch the next Summer.

Page from a book of 1690.

(The slurred appearance represents the printing of the original copy.)
RULES FOR USE OF ITALIC

of his proof when it comes back heavily italicized. Moreover the occurrence of many italics increases the cost of composition because of the greater labor involved.

I. Italicize, subject to the caution just given, any words or phrases which it is desired to emphasize.

II. Foreign words and phrases incorporated into English sentences are sometimes italicized and sometimes not so distinguished. The deciding element in fixing the usage in these cases would seem to be the commonness and familiarity of the word or phrase. For example, the meaning of bona fide (Latin), menu (French), recto (Italian), or stein (German) are as well known as those of most English words. To all intents and purposes these words have been adopted into our language. On the other hand, jeu d’esprit (French) or inter alia (Latin) would probably not be immediately understood by the casual reader. Words of the first type should not be italicized. Words of the second type should be.

Following is a partial list of words of foreign origin which should not be italicized even when the original accents are retained. It is better to retain the accents. They are, however, often omitted. Familiarity plays its part here also. Dénouement is very often written without the accent; née is rarely so written. The absence of accented letters from typewriters, from ordinary fonts of type, and from the matrices ordinarily used in type-casting machines probably contributes largely to their omission.

<table>
<thead>
<tr>
<th>aide de camp</th>
<th>café</th>
<th>débris</th>
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<tbody>
<tr>
<td>Alma Mater</td>
<td>chargé d’affaires</td>
<td>début</td>
</tr>
<tr>
<td>a posteriori</td>
<td>chiaroscuro</td>
<td>décolleté</td>
</tr>
<tr>
<td>a priori</td>
<td>clientèle</td>
<td>dénouement</td>
</tr>
<tr>
<td>à propos</td>
<td>confrère</td>
<td>dépôt (=depository)</td>
</tr>
<tr>
<td>attaché</td>
<td>connoisseur</td>
<td>doctrinaire</td>
</tr>
<tr>
<td>bas-relief</td>
<td>crèche</td>
<td>dramatis personæ</td>
</tr>
<tr>
<td>beau ideal</td>
<td>criterion, pl. -a</td>
<td>éclat</td>
</tr>
<tr>
<td>bona fide</td>
<td>cul-de-sac</td>
<td>élite</td>
</tr>
<tr>
<td>bric-à-brac</td>
<td>data</td>
<td>ennui</td>
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RULES FOR USE OF ITALIC

entée née queue
ex cathedra net régime
ex officio névé rendezvous
exposé niche résumé
façade nil reveille
facsimile nom de plume rôle
fête papier mâché savant
habeas corpus per annum sobriquet
habitué per capita soirée
innuendo per cent tête-à-tête
levée per contra tonneau
littératuer personnel umlaut
litterati postmortem verbatim
massage (n. and adj.) versus (v., vs.)
matinée prima facie versus
mélee pro and con(tr) via
menu protégé vice versa
motif pro tem(pore) vis-à-vis
naive questionnaire viva voce

Following is a short list of words or phrases of foreign origin which are used occasionally but are not familiar enough to be printed in the text type.

\[ \text{ab ovo} \quad \text{en passant} \quad \text{locum tenens} \]
\[ \text{ancien régime} \quad \text{fait accompli} \quad \text{mise en scène} \]
\[ \text{bête noire} \quad \text{grand monde} \quad \text{noblesse oblige} \]
\[ \text{comme il faut} \quad \text{hors de combat} \quad \text{raison d’être} \]
\[ \text{de quoi vivre} \quad \text{inter alia} \quad \text{sans cérémonie} \]
\[ \text{de trop} \quad \text{jeu d’esprit} \quad \text{tour de force} \]

The following words, phrases, and abbreviations used in literary and legal references should be italicized.

\[ \text{ad loc.} \quad \text{idem} \quad \text{op. cit.} \quad \text{supra} \]
\[ \text{circa (ca.)} \quad \text{infra} \quad \text{passim} \quad \text{s. v.} \]
\[ \text{et al.} \quad \text{loc cit.} \quad \text{sic} \quad \text{vide} \]

Do not italicize:

\[ \text{cf.} \quad \text{e. g.} \quad \text{v. or vs. (versus)} \]
\[ \text{etc.} \quad \text{i. e.} \quad \text{viz.} \]
RULES FOR USE OF ITALIC

When an unfamiliar foreign word is used to convey precise description, put it in italic, but use roman for repetition of the word.

Italicize brief passages of foreign words which may be incorporated into an English passage but may not be long enough to be treated as regular quotations.

*De gustibus non est disputandum,* or as the French have it, *Chacun a son gout.*

Longer passages in foreign languages should be set in roman.

To set an entire paragraph of quoted matter in a foreign language in italic, or even to use italic too freely for phrases, practically nullifies the value of it as a display letter for the sub-headings or for any other part of the book in which distinction is really needed. Quotation marks, indentation, smaller type, or any of the marks which distinguish quoted matter are sufficient.

III. At one time it was quite customary to set all quotations, whether in English or a foreign language, prose or verse, in italics, but that fashion is now happily obsolete. Some modern printers use italic for bits of verse between paragraphs in the text of roman, but it is a fancy and not likely to be permanent.

IV. Do not italicize foreign titles preceding names of foreign institutions or places, streets, etc., the meaning or position of which in English would call for roman type.

Pere Ladeau; Freiherr von Schwenau; the Place de la Concorde; the Museo delle Terme.

V. In text matter use roman for the name of any author, but italicize the title of the work. This applies to books, including plays, essays, cycles of poems, and single poems of considerable length, usually printed separately, and not from the context understood to form parts of a larger volume; pamphlets, treatises, tracts, documents, and periodicals (including regularly appearing proceedings and transactions). In the case of newspapers and periodicals the
name of the place of publication should be italicized when it forms an integral part of the name, but do not under ordinary circumstances italicize the article the.

In many offices the names of papers, magazines, and serials are not italicized. Roman is often used without quotation marks, the title being indicated by capitalization. When such names are used as credits at the end of citations or notes they should always be italicized.

This is largely a matter of individual taste and office style. Ample warrant can be found for either form in the writing of the best authorities and in the practice of the best offices.

VI. In citations which make a full paragraph, and in footnotes, the name of both author and book are commonly set in roman lower-case. At the end of a paragraph or footnote specification of author and book may be roman for author and italic for book. When only the book is given, use italics.

These rules are often modified in long bibliographical lists, tables, or other cases when following them would cause a great accumulation of italics and spoil the appearance of a page. Do not italicize the books of the Bible (canonical or apocryphal) or titles of ancient manuscripts, or symbols used to designate manuscripts.

D 16, M 6, P, J.

VII. Italicize see and see also, in indices and similar compilations when they are used for cross-reference, and when it is desirable to differentiate them from the context.

VIII. Italicize for and read in lists of errata to separate the incorrect from the correct.

Page 999 for Henry read Henri.

IX. The phrases prima facie and ex officio are sometimes used to qualify the nouns which follow, and sometimes used as adverbs. As qualifiers they are often printed in roman with the hyphen.
Prima-facie evidence.
An ex-officio member of all committees.

When used as adverbs they may be printed in italics without the hyphen.

The evidence is, prima facie, convincing.
The speaker is, ex officio, the chairman.

X. Names of ships, especially when they are taken from places, as in the United States Navy, are often italicized.


XI. Names of paintings, statues, musical compositions, and characters in plays are sometimes italicized. This is not ordinarily advisable. It violates the rule of never using italics or other emphasizing devices needlessly and is liable to mar the appearance of the page. It is sometimes necessary, however, to avoid ambiguity. For example, Julius Caesar is a historical personage, "Julius Caesar" is one of Shakespeare's plays, Julius Caesar is a character in the play.

XII. Italicize the symbols $a), b), c)$, etc., used to indicate subdivisions when beginning a paragraph and $a, b, c, \text{ etc}$, affixed to the number of verse, page, etc., to denote a fractional part.

See Chap. iii, sec. 2 $a)$. 

XIII. Italicize letters used to designate quantities, lines, etc., in algebraic, geometrical, and similar matter, and in explanation of diagrams and illustrations.

$$(a+b)^2=a^2+2ab+b^2; \text{ the line } a \ c = \text{ the line } a \ b; \text{ the } n^{\text{th}} \text{ power; at the point } B.$$  

XIV. Italicize particular letters of the alphabet when referred to as such.

We use $a$ much more frequently than $q$. 
XV. Authorities in science differ in the use of italics and capitals. In strictly scientific matter it is better to follow copy if the copy is intelligently prepared; if not, follow some recognized text-book on the subject.

In general the following rules will be found serviceable:

(a) In botanical, zoological, geological, and paleontological matter, italicize scientific (Latin) names of genera and species when used together (the generic name being in the nominative singular), and of the genera only, when used alone. When genera and species are used together the genus always comes first, species second.

*Agaricus Campestris, Felis leo, Conodectes favosus, Phyteuma Halleri, Pinus, Basidiabolus, Alternaria, Erythrosuchus.*

(b) In medical matter the general practice is to print names of diseases and remedies in roman. In the *Encyclopedia Britannica, Eleventh Edition*, however, the scientific names of diseases are printed in italics.

(c) In astronomical and astrophysical matter italicize:

1. The lower-case letters designating certain Fraunhofer lines: *a, b, g, h.*

2. The lower-case letters used by Baeyer to designate certain stars in constellations for which the Greek letters have been exhausted: *f, Tauri; u, Hercules.*

(d) Italic should not be used for:

1. Greek, Latin, and Arabic names of planets, satellites, constellations, and individual stars: *Neptune, Thetys, Orionis.*

2. Symbols for chemical elements: *H, Ca, Ti.*

3. Capital letters given by Fraunhofer to the lines of the spectrum: *A-H, K.*
4. Letters designating the special types of stars: A 5, B 3, Mb.

5. The capital letter H with different Greek subscript letters, used to designate symbols of hydrogen: Hα, Hβ, etc.

6. Designations of celestial objects in well-known catalogues; also the Flamstead numbers:

   M 13 (for No. 13 of Messier’s *Catalogue of Nebulae and Clusters*), Bond 619; N. G. C. 6165; B. D.-18° 4871; 85 Pegasi, Lalande 5761.

   But when initials are used to express the titles of catalogues, as such, and not to designate a particular celestial object, such initials are to be italicized, following the usual rule of references by titles.

   B. D.; N. G. C.

XVI. In resolutions italicize the word “Resolved,” but not the word “Whereas.”

XVII. Italicize the names of plaintiff and defendant in the citation of legal cases; also the titles of proceedings containing such prefixes as *in re, ex parte, In the matter of*, etc.

   The Boston Elevated Railway Co. vs. The City of Cambridge. *In re Johnson; ex parte Thomas; In the matter of the petition of John Smith for a change of venue.*

XVIII. Italicize address lines in speeches, reports, etc., and primary address lines in letters. Set the address flush, in a separate line, with the nouns capitalized.

   Mr. Toastmaster, Ladies and Gentlemen.
   Mr. Henry P. Porter, 148 High St., Boston, Mass.

XIX. In signatures italicize the position or title added after the name. If this consists of only one word, it is usually run into the same line with the name.

   Frederick W. Hamilton, Clerk.
14 RULES FOR USE OF ITALIC

If the title consists of more than one word but is no longer than the name, center the first letter under the name line, and indent one em on the right.

John F. Fitzgerald,
Mayor of Boston.

If the title is longer than the name, center the name over the second line and set this flush:

Minton P. Warren,
Professor of Latin Language and Literature.

Sometimes a long title may be set in a smaller type, or, if this is not advisable, it may be put into two lines.

These rules are generally sound, but may have to be varied to suit special conditions.

Italicize the signatures of contributors to magazines, etc., when the names appear at the end of the article. If the name appears at the head of the article use small capitals, or, as is often done, the same type as the text.

XX. Italic may be used to distinguish the words or clauses which serve as verbal texts for an extended comment. In printed sermons, for example, the text is often set in italics.

XXI. Italic may be used with good effect for running titles, for table headings, and for sub-heads. It is not desirable for side notes. It has many kerned letters which are liable to break off at the ends of the lines in an exposed position.

XXII. In the English Bible italics are used to print words which are not expressed in the original Hebrew or Greek but are implied in the original and expressed in the translation.

Their quiver is an open sepulchre; they are all mighty men.

I find in him no fault at all.

These italics should never be mistaken for marks of emphasis.
XXIII. Care should be taken that the italic type used should mate well with the roman. The fact that it often did not so mate, even in fonts supposed to go together, was one cause for the disfavor which came to attend its use. Typesetting machines constructed without proper provision for the composition of italic have been very influential in restricting its use. Italics are now practically abolished from newspaper work except in advertising matter, though they were used in newspapers to excess in the eighteenth century.

XXIV. Italics are indicated in manuscript by drawing a single line under the words to be so printed.
SUPPLEMENTARY READING


QUESTIONS

1. Describe the first types.
2. What caused the demand for smaller books?
3. What was done to meet this demand?
4. What was the first step in the improvement of type?
5. What was the next important step?
6. What are the present uses of the three principal forms of letters?
7. What are the general principles governing the use of italics?
8. What important principle should be observed in the use of italic?
9. Is a compositor ever justified in not following an author's marks calling for italics, and why?
10. For what, in general, is italic used?
11. What is the general usage regarding foreign words and phrases?
12. What decides whether they are italicized or not?
13. What about accents in foreign words?
14. Give a list of common words, phrases, and abbreviations used in literary and legal references which should always be italicized.
15. Give a short list of abbreviations of foreign origin which should not be italicized.
16. How should quotations in foreign languages be treated?
17. What is the use of italic in English quotations?
18. How should you treat foreign titles preceding names of persons, streets, and the like?
19. How are names of authors and of books, magazines, and the like, treated?
20. How do we use italics in citations, in footnotes, in indices, and in errata?
21. When are prima facie and ex officio italicized, and when not?
22. How are names of ships printed?
23. How are names of paintings, statues, musical compositions, and characters in plays treated?
24. What is the rule about letters used to indicate subdivisions, etc.?
25. How do we print letters of the alphabet when referred to as such?
26. What can you say of the use of italic in scientific matter generally?
27. Give the particular rules for the use of italic in certain sciences.
28. What is the rule for italic in resolutions?
29. How are italics used in legal matter?
30. How are italics used in signatures?
31. Where are titles placed when following names in signatures?
32. How may texts of sermons and the like be printed?
33. What can you say of the use of italic in running titles, table heads, side notes, and the like?
34. What should be looked out for in combining italic with roman?
35. What has been the influence of machine composition in the use of italic, and why?
36. How does the use of italic in newspapers at present compare with that of a hundred years ago, and why?
37. How are italics indicated in manuscript?

As elsewhere in this section of the Typographic Technical Series, the learning of the rules must be supplemented by extended practice in their application. Constant drill should be given the apprentice in the setting of matter requiring the use of italics, or in writing out manuscripts with the italics properly indicated. There is no other way in which accuracy and practical proficiency can be acquired. Printed matter may be shown for criticism and discussion, and incorrectly italicized matter may be given out for correction.
TYPOGRAPHIC TECHNICAL SERIES
FOR APPRENTICES

The following list of publications, comprising the Typographic Technical Series for Apprentices, has been prepared under the supervision of the Committee on Education of the United Typothetae of America for use in trade classes, in course of printing instruction, and by individuals.

Each publication has been compiled by a competent author or group of authors, and carefully edited, the purpose being to provide the printers of the United States—employers, journeymen, and apprentices—with a comprehensive series of handy and inexpensive compendiums of reliable, up-to-date information upon the various branches and specialties of the printing craft, all arranged in orderly fashion for progressive study.

The publications of the series are of uniform size, 5 x 8 inches. Their general make-up, in typography, illustrations, etc., has been, as far as practicable, kept in harmony throughout. A brief synopsis of the particular contents and other chief features of each volume will be found under each title in the following list.

Each topic is treated in a concise manner, the aim being to embody in each publication as completely as possible all the rudimentary information and essential facts necessary to an understanding of the subject. Care has been taken to make all statements accurate and clear, with the purpose of bringing essential information within the understanding of beginners in the different fields of study. Wherever practicable, simple and well-defined drawings and illustrations have been used to assist in giving additional clearness to the text.

In order that the pamphlets may be of the greatest possible help for use in trade-school classes and for self-instruction, each title is accompanied by a list of Review Questions covering essential items of the subject matter. A short Glossary of technical terms belonging to the subject or department treated is also added to many of the books.

These are the Official Text-books of the United Typothetae of America.

Address all orders and inquiries to Committee on Education, United Typothetae of America, Chicago, Illinois, U. S. A.
PART I—Types, Tools, Machines, and Materials

1. **Type: a Primer of Information**  
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   Relating to the mechanical features of printing types; their sizes, font schemes, etc., with a brief description of their manufacture. 44 pp.; illustrated; 74 review questions; glossary.

2. **Compositors' Tools and Materials**  
   By A. A. Stewart  
   A primer of information about composing sticks, galleys, leads, brass rules, cutting and mitering machines, etc. 47 pp.; illustrated; 50 review questions; glossary.

3. **Type Cases, Composing Room Furniture**  
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4. **Imposing Tables and Lock-up Appliances**  
   By A. A. Stewart  
   Describing the tools and materials used in locking up forms for the press, including some modern utilities for special purposes. 59 pp.; illustrated; 70 review questions; glossary.

5. **Proof Presses**  
   By A. A. Stewart  
   A primer of information about the customary methods and machines for taking printers' proofs. 40 pp.; illustrated; 41 review questions; glossary.

6. **Platen Printing Presses**  
   By Daniel Baker  
   A primer of information regarding the history and mechanical construction of platen printing presses, from the original hand press to the modern job press, to which is added a chapter on automatic presses of small size. 51 pp.; illustrated; 49 review questions; glossary.

7. **Cylinder Printing Presses**  
   By Herbert L. Baker  
   Being a study of the mechanism and operation of the principal types of cylinder printing machines. 64 pp.; illustrated; 47 review questions; glossary.

8. **Mechanical Feeders and Folders**  
   By William E. Spurrier  
   The history and operation of modern feeding and folding machines; with hints on their care and adjustments. Illustrated; review questions; glossary.

9. **Power for Machinery in Printing Houses**  
   By Carl F. Scott  
   A treatise on the methods of applying power to printing presses and allied machinery with particular reference to electric drive. 53 pp.; illustrated; 69 review questions; glossary.

10. **Paper Cutting Machines**  
    By Niel Gray, Jr.  
    A primer of information about paper and card trimmers, hand-lever cutters, power cutters, and other automatic machines for cutting paper, 70 pp.; illustrated; 115 review questions; glossary.

11. **Printers' Rollers**  
    By A. A. Stewart  
    A primer of information about the composition, manufacture, and care of inking rollers. 46 pp.; illustrated; 61 review questions; glossary.

12. **Printing Inks**  
    By Philip Ruxton  
    Their composition, properties and manufacture (reprinted by permission from Circular No. 53, United States Bureau of Standards); together with some helpful suggestions about the everyday use of printing inks by Philip Ruxton. 80 pp.; 100 review questions; glossary.
PART I (continued)—Paper and Printing Plates

13. How Paper is Made. By William Bond Wheelwright
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