



Handling Older Collections

Preservation



Overview

Older collections have specific problems and needs.
In this training session, we will briefly discuss:

- The history of book-making processes and how this affects the condition of books over time.
- Proper book storage, environment, and handling.
- Which materials should be referred to Preservation for possible treatment.



Materials and techniques that affect damage

History of the Book

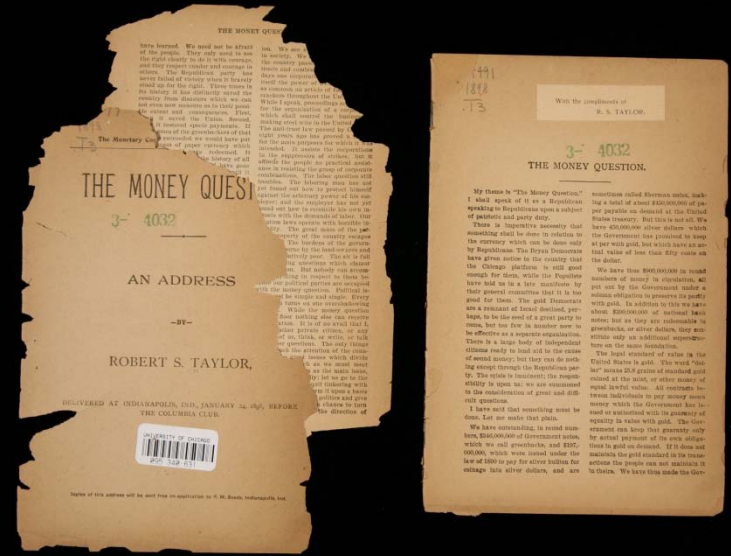
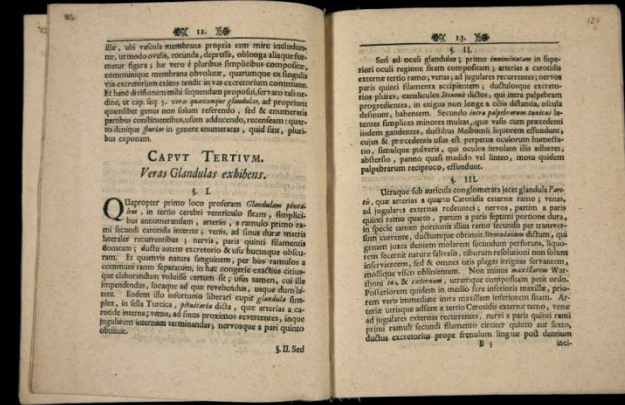


Brittle Paper

Brittle Paper

Why some paper is brittle and some is not

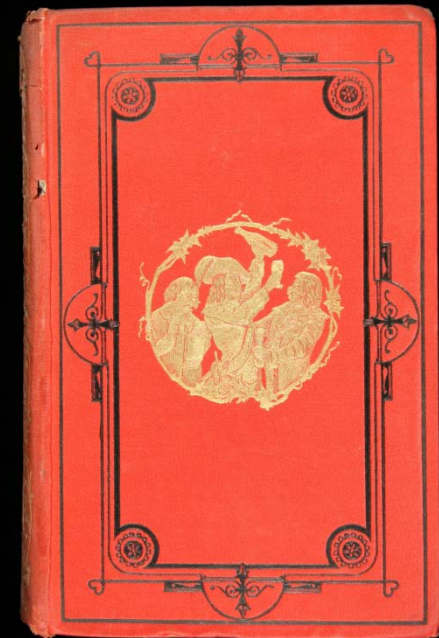
- Most paper made before 1840 was made from linen rags. It is very strong and chemically stable.
- After 1840, wood pulp paper was developed. Wood pulp paper can be initially strong, but it contains lignin which is not chemically stable. Over time, acidic products develop and break down the paper fibers.
- Today's "acid free" paper is generally wood pulp that has had much of the lignin removed and contains alkaline buffers.





Cloth

- Cloth bindings were developed around 1820. The cloth was impregnated with substances to make them more sturdy. Those substances become acidic with time and break down.
- The chemical breakdown is accelerated in areas that take more mechanical movement such as corners and joints.

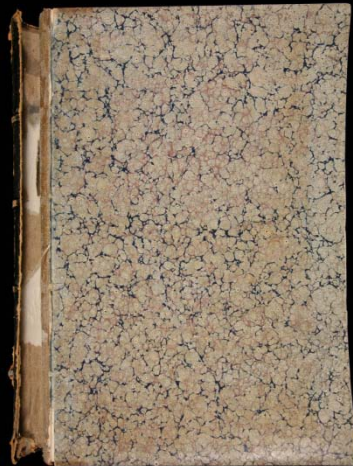




Cloth

As cloth breaks down, what we see are

- Detached boards and missing boards
- Detached spines and missing spines





Leather

- Shortcuts in leather processing in the 19th Century reduced the longevity of the final product.
- The fibers in this leather deteriorate into a condition known as “red rot” characterized by a brownish-red powder.





How a book's pages are attached can affect the way it will get damaged

- Books sewn through the folds are the sturdiest, although sewing can break over time.
- Oversewn books are sewn as much as ¼ inch into the textblock. This mechanical constriction combined with brittle paper can cause great damage.
- Adhesive bindings are used on both folios and single sheets, but are not sewn. However strong or flexible the adhesive is, it will eventually fail.





Sewn through the fold

ly poetical. It is still blowing hard—the tiles flying, and
 racking—rain splashing—lightning flashing—quite a fine
 evening, and the sea roaring in the distance.
 conversazione. All the women frightened by the squall :
 to the masquerade because it lightens—the pious reason !
 wing away. A. has sent me some news to-day. The war
 nearer and nearer. Oh those scoundrel sovereigns ! Let
 em beaten—let the Neapolitans but have the pluck of the
 or of the Spaniards of now, or of the German Protestants,
 resbyterians, the Swiss under Tell, or the Greeks under
 s—all small and solitary nations (except the Spaniards
 Lutherans), and there is yet a resurrection for Italy, and
 e world.

“ February 20th, 1821.

s of the day are, that the Neapolitans are full of energy.
 spirit *here* is certainly well kept up. The ‘Americani’ (a
 ety here, an under-branch of the ‘Carbonari’) give a dinner,
 in a few days, and have invited me, as one of the C^l. It
 e Forest of Boccaccio’s and Dryden’s ‘ Huntsman’s Ghost ;’
 I had not the same political feelings (to say nothing of
 rival turn, which every now and then revives), I would
 or, at least, as a lover of poetry. I shall expect to see
 of ‘ Ostasio* degli Onesti’ (Dryden has turned him into
 canti—an essentially different person, as may be found in
 e ‘thundering for his prey’ in the midst of the festival.
 whether he does or no, I will get as tipsy and patriotic as

these few days I have read, but not written.

“ February 21st, 1821.

, rode—visited, &c. Business begins to thicken. The
 nted a declaration against the patriots, who, he says, me-
 g. The consequence of all this will be, that, in a fortnight,
 untry will be up. The proclamation is not yet published,
 ready for distribution. ** sent me a copy privately—a
 does not know what to think. When he wants to be well
 riots, he sends to me some civil message or other.
 own part, it seems to me, that nothing but the most des-
 of the Barbarians can prevent a general and immediate
 hole nation.

“ February 23d, 1821.

litto with yesterday—rode, &c.—visited—wrote nothing

from the frontier to the C. is as bad as possible. The *plac*
 —the chiefs are betrayed, military as well as civil—and the
 tans not only have *not* moved, but have declared to the P. go
 and to the Barbarians, that they know nothing of the matter.

“ Thus the world goes ; and thus the Italians are alwa
 lack of union among themselves. What is to be done *here*
 the two fires, and cut off from the N^o. frontier, is not dec
 opinion was,—better to rise than be taken in detail ; but how
 settled now, I cannot tell. Messengers are despatched to
 gates of the other cities to learn their resolutions.

“ I always had an idea that it would be *bungled* ; but was
 hope, and am so still. Whatever I can do by money, mean
 son, I will venture freely for their freedom ; and have so re
 them (some of the Chiefs here) half an hour ago. I have
 sand five hundred scudi, better than five hundred pounds, in
 which I offered to begin with.

“ February 25th

“ Came home—my head aches—plenty of news, but too ti
 set down. I have neither read, nor written, nor thought,
 purely animal life all day. I mean to try to write a page or t
 I go to bed. But, as Squire Sullen says, ‘ My head aches con
 Scrub, bring me a dram !’ Drank some Imola wine, and so

*Log-book continued.**

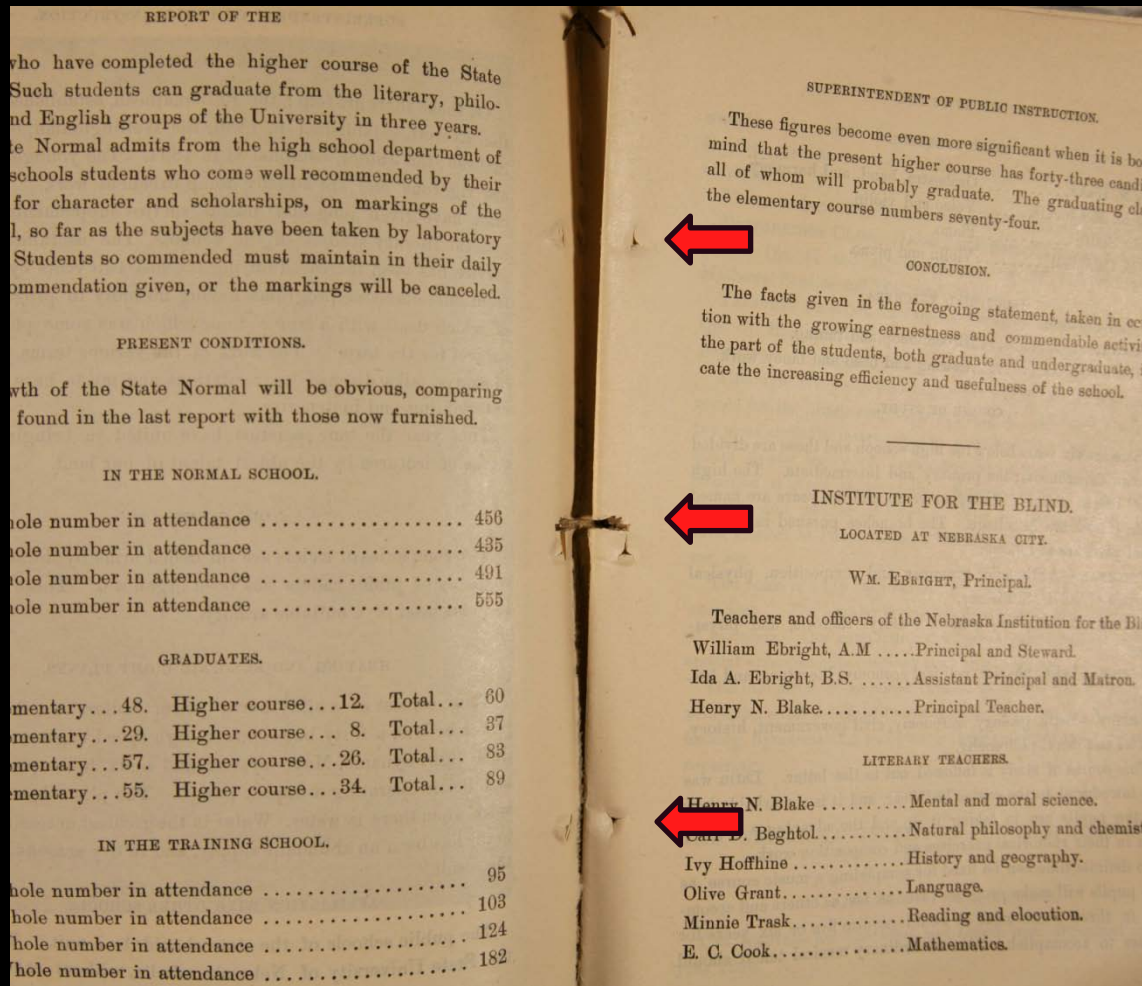
February 27th

“ I have been a day without continuing the log, because I
 find a blank book. At length I recollected this.

“ Rode, &c.—dined—wrote down an additional stanza fo
 canto of D. J., which I had composed in bed this morning.
l’Amica. We are invited on the night of the Veglione (nex
 nica), with the Marchesa Clelia Cavalli and the Countess Spir
 poni. I promised to go. Last night there was a row at th
 which I am a ‘ socio.’ The vice-legate had the impudent
 to introduce *three* of his servants in mask—*without tickets*,
 in spite of remonstrances. The consequence was, that th
 men of the ball took it up, and were near throwing the vice-
 of the window. His servants, seeing the scene, withdrew
 after them. His reverence Monsignore ought to know, that
 not times for the predominance of priests over decorum.
 nutes more, two steps farther, and the whole city would have
 arms, and the government driven out of it.

“ Such is the spirit of the day, and these fellows appear ne
 ceive it. As far as the simple fact went, the young men we

Oversewn—note damage





Adhesive binding





Proper Environment and Storage





Environmental factors accelerate damage

- Heat and humidity accelerate chemical reactions.
- Light fades objects as well as accelerating chemical reactions.
- Pollution damage such as sulfur dioxide is evident in books that came from 19th c. libraries that were lit with gas lamps.



Food can attract pests

- Some damage is done by pests that eat paper based materials: silverfish, cockroaches, bookworms.
- Other damage is done by pests that are attracted by food, but use the paper based materials for nests: rats and mice.



Bookworms



Rodents



Well intentioned repairs

- DIY repair causes more work for the Conservation Staff.





Improper Housings

- Housings that are too large can allow an item to move within it, creating mechanical damage.
- Housings that are too small make handling difficult.
- Housings that are past their useful life make the items vulnerable.





Proper Handling



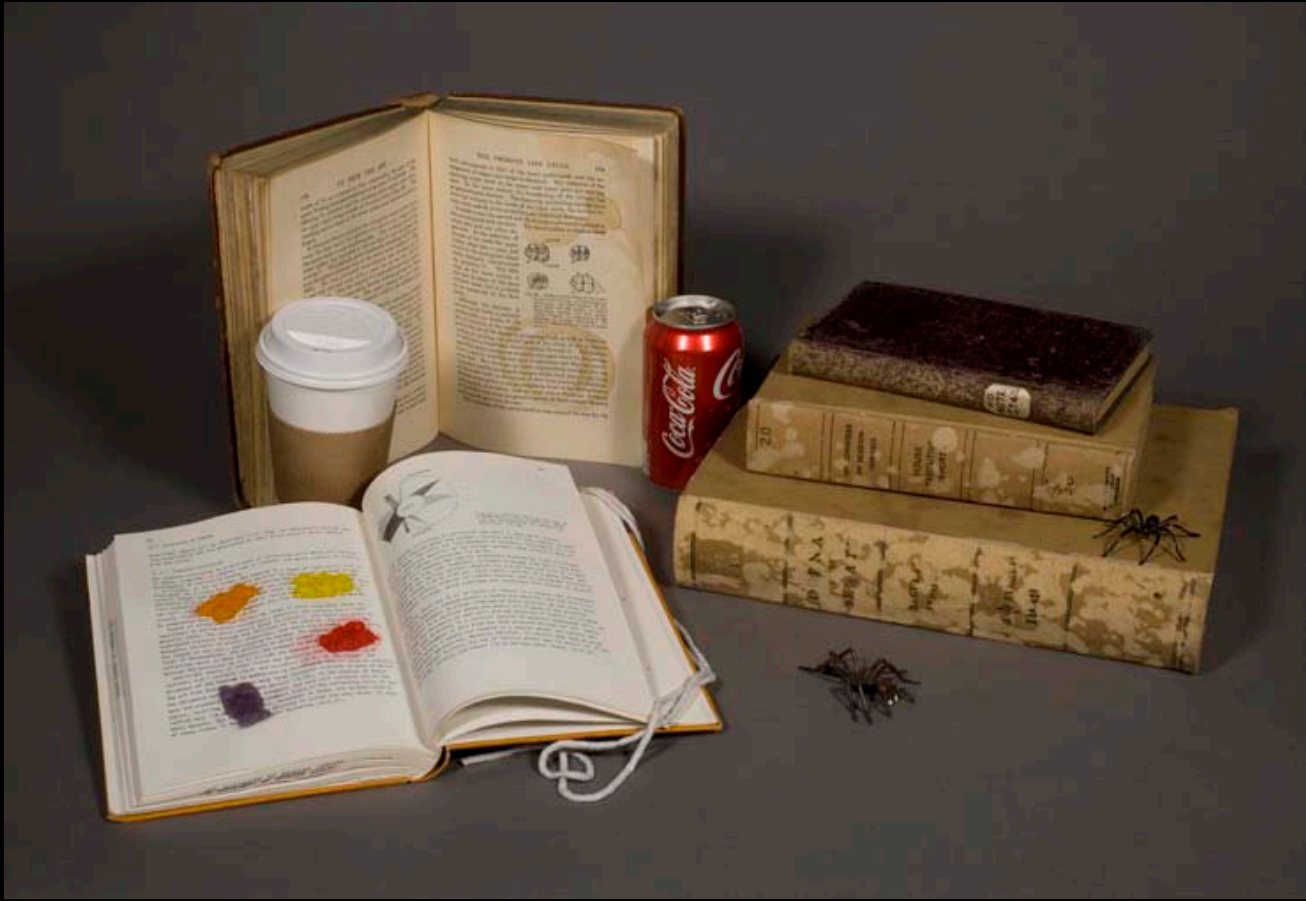


Good Handling Practices

- Always have clean hands
- Eat and drink away from collection materials
- Keep stacks of books small
- Do not pull books from the headcap
- Always fully support the book
- Use cloth ties rather than rubber bands
- Tape, pens, paperclips and even pencils and post-it notes leave permanent traces
- Proper placement and adhesion of barcodes is essential



Keep food and dirt away from books

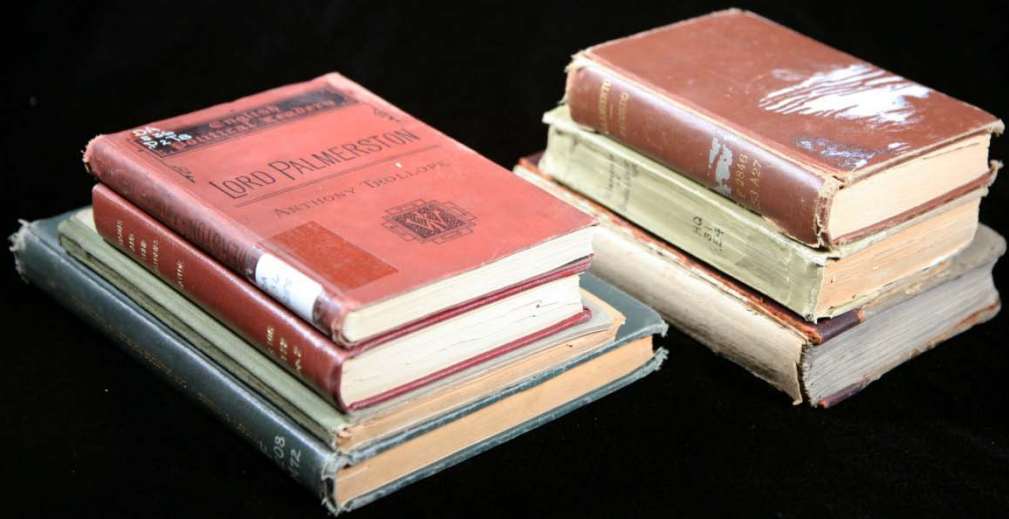




Keep stacks of books small and orderly



Bad stack



Good stack

Do not pull from the headcap





Fully support the book



Good for short travels (within the library)



Note the placement of the tie—on the side is best



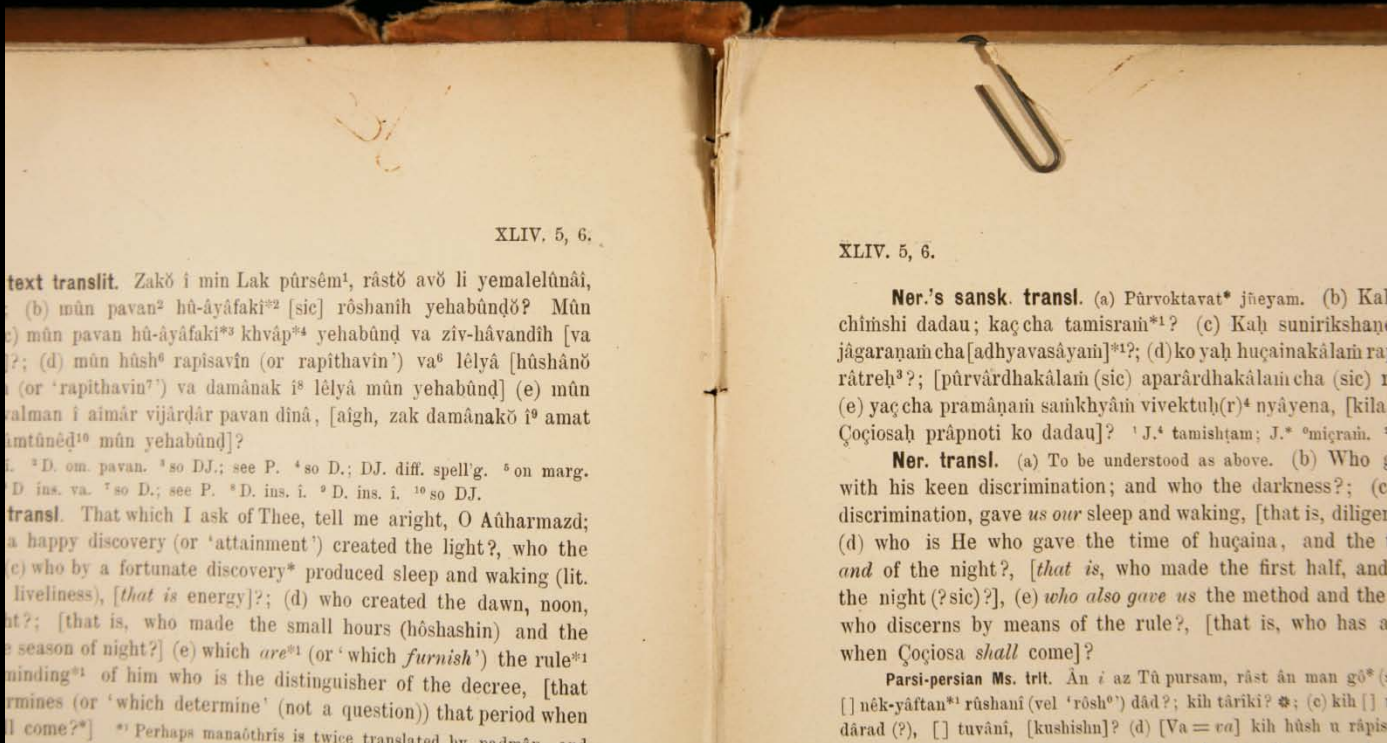
Better for longer travels (out of the library)



Note the placement of the tie—on the side or at the top is best



Damage from paperclips



XLIV. 5, 6.

text translit. Zakō ī min Lak pūrsēm¹, rāstō avō li yemalelūnāi,
(b) mūn pavan² hū-āyāfakī^{3,2} [sic] rōshanih yehabūndō? Mūn
(c) mūn pavan hū-āyāfakī^{3,3} khvāp⁴ yehabūnd va ziv-hāvandih [va
(d) mūn hūsh⁶ rapisavīn (or rapithavin⁷) va⁶ lēlyā [hūshānō
(or 'rapithavin⁷') va damānak ī⁸ lēlyā mūn yehabūnd] (e) mūn
salman ī aimār vijārdār pavan dinā, [aigh, zak damānakō ī⁹ amat
amtūnēd¹⁰ mūn yehabūnd]?

¹ D. om. pavan. ² so DJ.; see P. ³ so D.; DJ. diff. spell'g. ⁴ on marg.
⁵ D. ins. va. ⁶ so D.; see P. ⁷ D. ins. i. ⁸ D. ins. i. ⁹ so DJ.

transl. That which I ask of Thee, tell me aright, O Aūharmazd;
a happy discovery (or 'attainment') created the light?, who the
(c) who by a fortunate discovery* produced sleep and waking (lit.
liveliness), [that is energy]?; (d) who created the dawn, noon,
and night?; [that is, who made the small hours (hōshashin) and the
season of night?] (e) which are^{3,1} (or 'which furnish¹') the rule^{3,1}
guiding^{3,1} of him who is the distinguisher of the decree, [that
determines (or 'which determine' (not a question)) that period when
I come?]* ¹⁰ Perhaps manaōthrīs is twice translated by yehabūnd.

XLIV. 5, 6.

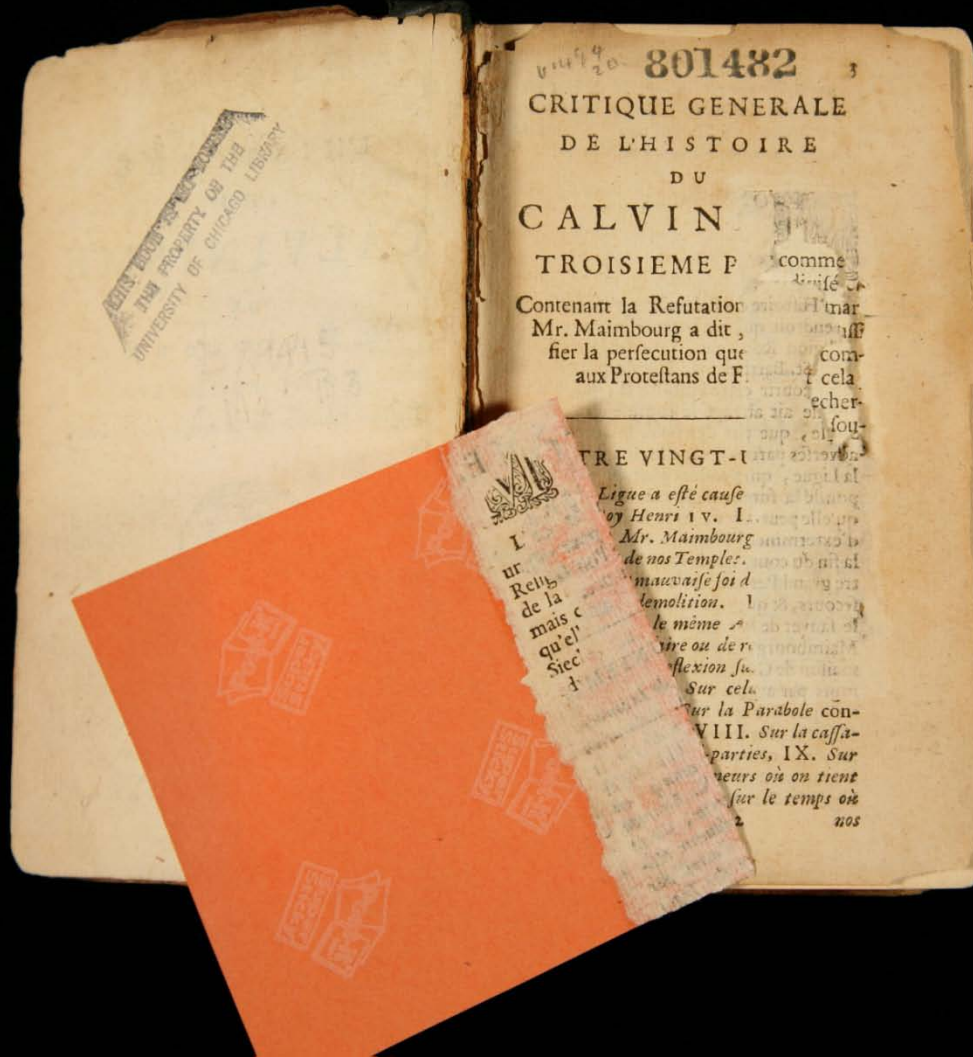
Ner.'s sansk. transl. (a) Pūrvoktavat* jñeyam. (b) Kaḥ
chīnshi dadau; kaç cha tamisraṇ^{*1}? (c) Kaḥ sunirikshañe
jāgaraṇaṇi cha [adhyavasāyaṇi]^{*1?}; (d) ko yaḥ huçainakālaṇi rap
rātreḥ³?; [pūrvārdhakālaṇi (sic) aparārdhakālaṇi cha (sic) rā
(e) yaç cha pramāṇaṇi saṅkhyāṇi vivektaḥ(r)⁴ nyāyena, [kila,
Çoçiosah prāpnoti ko dadau]? 'J.⁴ tamisṭam; J.* 'mīçraṇi. ⁵

Ner. transl. (a) To be understood as above. (b) Who g
with his keen discrimination; and who the darkness?; (c)
discrimination, gave us our sleep and waking, [that is, diligen
(d) who is He who gave the time of huçaina, and the t
and of the night?, [that is, who made the first half, and
the night (?sic)?], (e) who also gave us the method and the
who discerns by means of the rule?, [that is, who has a
when Çoçiosa shall come]?

Parsi-persian Ms. trit. An ī az Tū pursam, rāst ān man gō^{*} (s
[] nēk-yāftan^{*1} rūshani (vel 'rōsh^o) dād?; kih tāriki? *; (c) kih [] u
dārad (?), [] tuvāni, [kushishn]? (d) [Va = va] kih hūsh u rāpisa



Damage from post-it notes



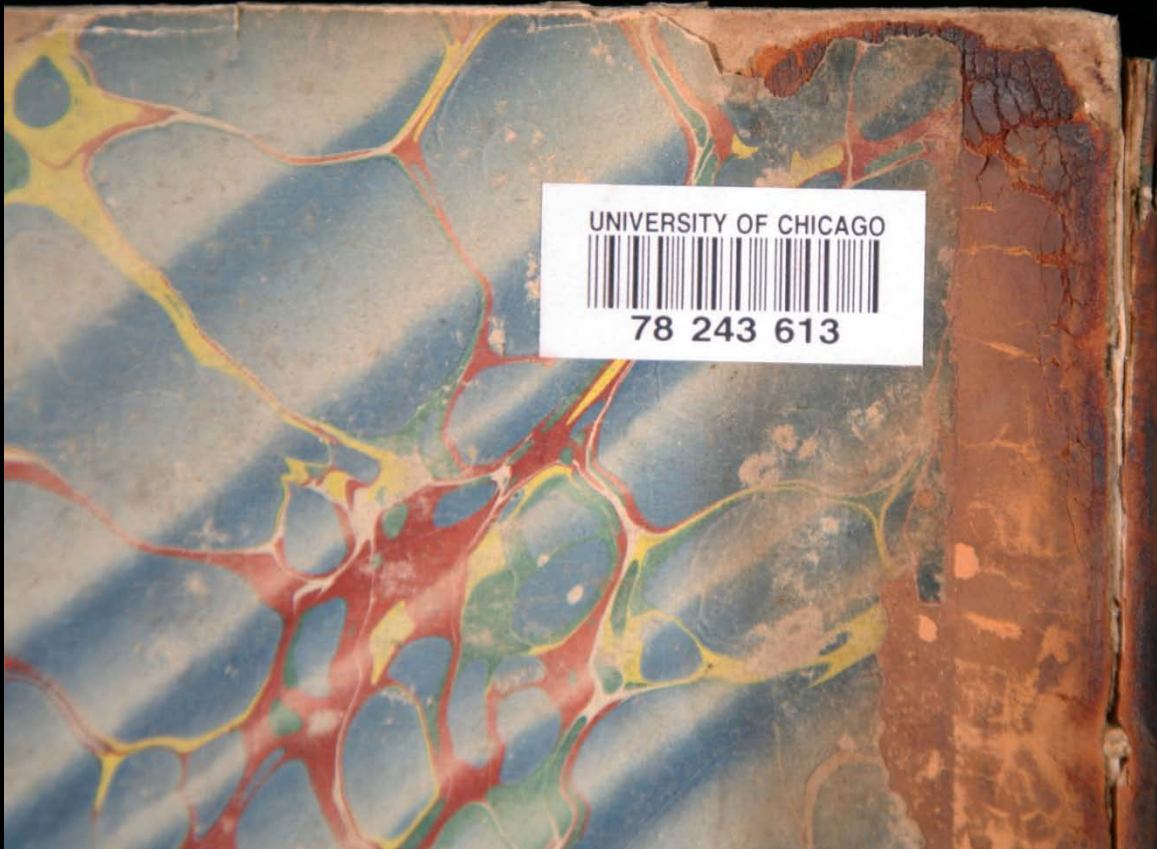


Poor barcode placement



Placed on
both
leather
and paper

Good barcode placement



Placed
completely
on paper



Adhere barcodes well



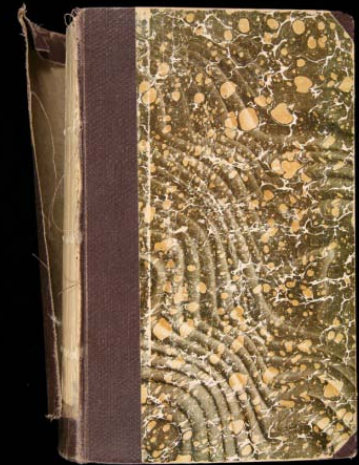


Preservation Referrals



If in doubt, please ask Preservation

- loose, detached, or missing covers or bindings/boards
- detached or missing spine pieces



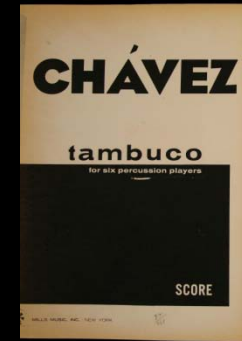


Preservation Referrals

- split text block



- unbound loose parts/sets of plates/maps etc.

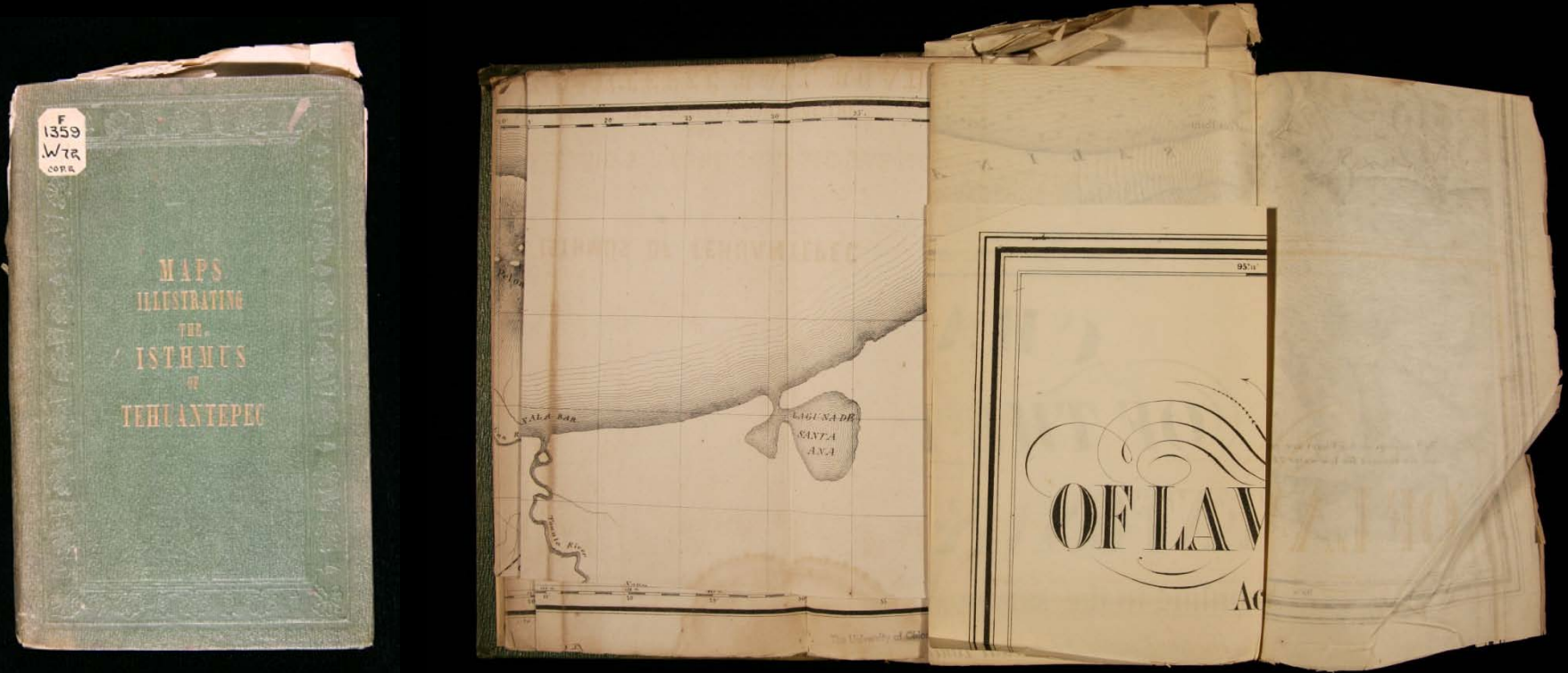


- severe water damage—fused pages or excessive cockling and warping of text block





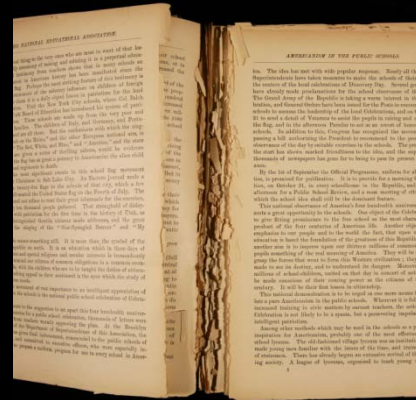
Material projecting from textblock





Preservation Referrals

- brittle text blocks that have crumbling or fracturing paper (handling causes damage)
- leather bindings that are powdery (known as "red rot") or dry and flaking
- volumes that create shelving problems such as odd sizes or warped covers





Preservation Referrals

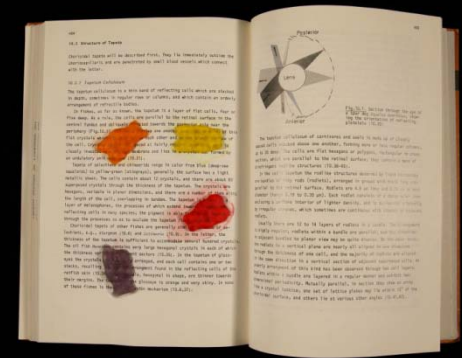
- volumes with clasps or other attachments that could damage adjacent material
- volumes with excessive mold damage—especially active mold growth





Preservation Referrals

- volumes with live insect or evidence of other pest (rodent) damage
- volumes with sticky accretions—gum, food stuffs, etc.
- pamphlets that are past their useful life





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