

APPENDIX IV

Brief questionnaire sent by C. Clarkson to vellum manufacturers, 1968. (I have since greatly expanded and rephased this list.)

VELLUM

A conservation binding material.

For use on non-adhesive limp vellum bindings. Our main concern is to obtain vellum skins with the following qualities:

Very good tensile strength

Flexibility: to allow covers to open readily.

Foldability: fold on itself without hair side splitting away and with little "whitening" of fold (hard surface craze?).

Durability: A skin which will stay flexible and strong.

Other desirable properties:

Natural thickness; natural color; no bleaches.

Shrink resistance

1. English and American libraries are reluctant to use vellum for covering books because they see in their collections vellum books which are in a brittle and shrunken state. We have noted that the particular books which they refer to mainly are of 17th - 19th century.
2. We have observed in Florence that, modern manufactured vellum is less resistant in tearing than examples before, say 1500. Such vellum appears to us to be a quite different material. Would you conceive it possible that the manufacturing procedures were really quite different?
3. Early vellums appear to be partially tanned or to have a certain cartilage like quality. Can this be achieved today?
4. Can you produce vellum of this quality?
5. Who are the greatest users of vellum? Is it true that 20 years ago your largest orders were for drum heads; if so, does this material require a different manufacturing process?

6. What are the differences in processing manuscript vellum and book binding covering vellum?
7. Coloring: What bleaches do you use on vellum and parchment? Can parchments be obtained unbleached?
8. In an ideal situation how fresh would you wish to process the skins after slaughter?
9. Do all your skins arrive in the wet salted state?
10. Is it possible to condemn skins in the raw state? If so, what are the recognizable features?
11. Do you know the age and sex of skins which you buy?
12. Do you treat your skins with sulphuric acid, particularly drum skin vellums?
13. Once made, is vellum impervious to acid?
14. In time would you expect vellum to become acid in character?
15. One or two of the 8th century Irish manuscripts which Roger Powell repaired were towards acid, about 4-5. (Alkaline usually 8-12).
16. If vellum were not so highly alkaline, or to put it another way, if the skins were slightly acidic (5 pH) would this produce a higher tensile strength? (Refer to tanning processes.)
17. If skins are properly processed according to today's standards they would have a high alkalinity with a pH of 6-7. If this is so, is it likely that industrial acidic atmospheres could attack the skin and especially in the joint which is liable to crack?
18. Is there any way of rejuvenating brittle skins?
19. Is the action of scalding really necessary in surfacing vellum?
20. Are you still using lime pokes? If so, then why do you prefer this method.
21. Are over dry vellums more vulnerable to acid?

APPENDIX V

Answers to Questions from LaPergamena kindly translated
by B. Guiffrida

1. No comment.
2. Medieval methods were undoubtedly quite different from those used today. They were longer and only natural substances were used whereas today various chemicals are used.
3. "LaPergamena" feels confident that if we gave them a sample of vellum they could reproduce it as regards partially tanned, flexibility etc.
4. See above.
5. The largest buyers of vellum that is, sheep parchment, are universities for use as diplomas. It is true that 20 years ago a great deal of goat vellum was used for drum heads. The manufacture of this goat vellum was exactly the same as that used for drums.
6. The manufacture of manuscript parchment is totally different from that of goat vellum for bookbinding. First of all sheep rather than goat is used. The outer layer is entirely removed, this layer being the part most subject to atmospheric change, all fat is removed.
7. Goat vellum is bleached partially by the lime and further with peroxide--all vellum must be bleached--otherwise the skin would be dark brown. No residual oxidation or disintegration results. (By dark brown what exact tone do they mean to imply?)
8. Ideally one would get the skins fresh from the slaughter house. Unfortunately this is not usually possible, also the fatter the animal the better the skin. (Better? From what point of view)
9. "LaPergamena" skins are received dry, having been either dipped in sea water and hung up to dry or treated with arsenic and dried. Our goat skins are obtained from South America.

10. It is possible to select skins at the place of slaughter--not while the animals are still alive. A sick or scarred animal gives a skin which is transparent or obviously thinner and weaker in spots.
11. One can tell the sex from the skin but not the age of the skin.
12. No acids are used in the manufacture of vellum or parchment. Though some years ago hydrochloric acid was used to produce a special transparent vellum used exclusively for drums.
13. No skin is impenetrable to acid. Vellum is very resistant to the acids in industrial atmosphere.
14. It doesn't become acid
15. No answer.
16. The more acid the skin the less resistant it will be. An acid skin is more subject to break or tear.
17. They feel that their vellum which has a pH of 8 and sometimes higher is very resistant. (Measured how many skins? Surface pH or what?)
18. Knows of none.
19. They do not use hot water--warm water (approximately 25°C) is used. Never hot water. In early times hot water was used to remove fat from parchment.
20. "Calce viva" (hot lime/fresh lime) is never used. "Calce spenta" (old lime) is used. It helps to bleach the vellum and if it were not used the vellum would tend to have certain transparent spots.
21. Vellum which has been dried excessively is definitely more vulnerable both to acids and to tearing.

N.B "calce viva" = quick lime - calcium oxide - CaO .

pH 12.5 - 13.2 - very corrosive to flesh, skin.

"calce spenta"
(in older Latin "calce
non recente")

Essentially means lime
liquours in which skins
have been previously
placed for working.
Main properties of the
liming action in this
case are amines and
protein degeneration
products resulting in
much milder action and
smoother, softer grain.
Still pH 12.5 - 13.0

= slaked lime calcium hydroxide,
in solution of lime water,
 Ca(OH)_2 . Mildly alkaline.
(Used to deacidify paper).