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Revised Guidelines for the Conservation of Leather and Parchment Bookbindings

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The Central Research Laboratory for Objects of Arts and Science and the Royal Library will shortly publish new guidelines for the conservation of leather and parchment bookbindings. The new approach to the conservation of leather and parchment bindings differs considerably from the earlier versions which sequentially appeared under the same title in 1983 and 1987, and which gave one basic method for the treatment of all leather-bound books. The recipe it contained had as its main ingredients lanoline, neatsfoot oil and a buffering agent, imidazole, dissolved in aromatic-free benzine.

As with the previous ones, the new guidelines have been prepared and edited in concert by the Central Research Laboratory and the Conservation Department of the Royal Library. In this new version a procedure is introduced that enables a restorer or conservator to closely examine each book separately with a view to defining the particular treatment which goes with a binding in need of care. When a suitable treatment for a binding is chosen in accordance with the criteria as specified in this version (q.v.) the restorer is also in a position to state precisely which part of a particular binding calls for the chosen treatment.

As distinct from the previous versions, this one does not follow anymore the policy of prescribing one method of treatment that is considered applicable to virtually all leather bindings. This practice of one standard treatment of decaying bindings had in the past, as a matter of fact, been inspired by the wish of a great number of restorers to have at their disposal a method by which they could treat any leather bookbinding without running any risk in doing so. However in the course of time it became increasingly apparent that to act in this way was to act erroneously; the more so because avoidance of risks in this particular field of conservation made the restorer tend to favour the treatment of all bindings indiscriminately and in their entirety, irrespective of the material involved and despite the uncertainty as to whether each one of those bindings really needed any treatment at all. As a consequence, on quite a few leather bookbindings dressing was applied too vigorously, causing demonstrable problems. Another distinction from the earlier versions is that in the new guidelines a great deal of attention is given to parchment, the treatment of which had almost entirely been neglected in the past editions, even though it was then, and it is now, undeniable that parchment may need just about as much preservation as does leather. On account of such considerations as the above stated, we felt compelled to terminate the routing procedure we have been adhering to so far, of treating bookbindings by one and the same method, thereby using just one recipe. Instead we now introduce a diversified approach.

Accordingly, prior to conservation, the bindings in need of care are categorized, visually, in such a way that the restorer can treat each binding in the manner given in the category in which a particular binding has been classified. We have therefore, in pursuance of this new objective, added to the set of recipes listed in the earlier versions, several newly formulated recipes for cleaning fluids, degreasing fluids, a separate buffering fluid, emulsions and dressings for leather, a dressing for parchment, and a reinforcing agent for leather bindings in a state of advanced decay.

In order to be able to assess the condition of a particular binding and, based on that assessment, also choose the right treatment for that binding, we indicate for the benefit of the restorer a number of relatively easy tests for the determination of the pH and of the ammonium sulphate contamination - two parameters which show whether a given binding is deteriorating. Conservation of library and archive assets in the past has supplied us with enough evidence on which we now base the view that the best results when treating leather and parchment are to be attained at 70% Relative Humidity. At Relative Humidities lower than that the fatty substances do not penetrate leather and parchment well.
Low Relative Humidity also implies a low moisture content of the binding material, and an insufficient moisture content is quite adverse to the binding, in that it is bound to interfere with the binding's textural strength and to speed up the concentration of fat in the very surface of the binding, where in fact it is least needed. With the intention to circumvent such drawbacks we have increased the percentage of lanolin in the formulations for dressings and emulsions referred to in the present version; this against the background that lanolin is known to be not only quite hygroscopic but an excellent lubricant as well.

Preparing this new version took about 18 months, and included a test-program on a group of about 20 books.

The resources that were made use of to compose it are in the data which emerged from the applied research that had been carried out by Henk van Soest in cooperation with the staff of the Conservation Department of the Royal Library.

Taken into consideration were also the comments and criticisms that had been aired on this subject by fellow restorers and conservators at one time or another.

Bearing these signals in mind, in editing this new version we have tried to amend the old text accordingly.

However it goes without saying that any criticism of the revised text, when it is available, will be welcomed by us.

Criteria for the Conservation of Leather and Parchment Bookbindings

A few introductory remarks:
* Be mindful of the possibility that not the whole binding but rather parts of it, usually the spine and the hinges, are in need of a treatment.
* Fumigation with ammonia always precedes treatment with a buffering fluid. Allow an one-week interval between fumigation and the next treatment.
* Examine every book thoroughly and determine, on the strength of the criteria described below, which treatment is necessary for which particular book.
* In the guidelines to be published the different categories are given a standard colour. A strip of paper is marked with this colour and then placed in the book.

Treatment code colours

**Code White**
No traces of mechanical damage or chemical degradation.
Outward signs: none.
Treatment: such bindings do not need any treatment other than the removal of dust and dirt.

**Code Yellow**
Visible damage due to either too much dressing in the past or deficient fat content. No apparent chemical degradation.
Outward signs with regard to leather: fine fissures, loosening of the grain, broken hinges, and, in the case of too much dressing, a tacky feel and darkening of the leather.
With regard to parchment: splitting of the texture, broken hinges, fissures along the spine.
Treatment:
- Removal of dust and dirt.
- Excessive dressing removed with a degreasing fluid.
- Conditioning at 70% Relative Humidity.
This must always precede any intended treatment.
- Application of an emulsion (in the case of leather) or a dressing (in the case of parchment).

**Code Blue**
Visible chemical degradation and mechanical wear.
Outward signs with regard to leather: (local) discoloration tending towards dark brown-black; presumably the side-effect of marbling or damage by water (if in doubt use a magnifying glass). Leather attacked by sulphuric acid looks as if burned. There is also a distinct pulverization of the grain.
With regard to parchment: gray discoloration, especially along the spine, splitting of the texture along the spine, broken hinges.
Treatment:
- Removal of dust and dirt.
- Fumigation with ammonia.
- Treatment with a buffering fluid.
- Conditioning at 70%RH.
- Treatment with a dressing, or in the case of parchment, a dressing for parchment.

N.B. With speckled or iron-stained bindings, avoid the use of an emulsion, because of its water content!
**Code Red**

Visible, extensive, chemically induced, degradation, and as a consequence - an advanced decomposition of the texture. The Code Red holds only for leather, as in practice this stage of decay is beyond parchment. Outward signs: pulverization and red rot.

Treatment:
- Removal of dust and dirt.
- Fumigation with ammonia.
- Treatment with a buffering fluid.
- Conditioning at 70%RH.
- Treatment with a dressing containing 8% lanolin and 2% neat's foot oil.
- Impregnation with the reinforcing agent H 51 at 55%RH.

We have come to the conclusion that conservation of leather and parchment bookbindings should never be a routine operation, just because these fancy old bindings are there. There may be a conservation problem with old leather and parchment bindings, or not. That is something to be established by a professional restorer or conservator. Leather and parchment will discoulour with the passing of time and will lose some of their flexibility, that's only natural and as such no reason for a large-scale treatment. It is only when it is obvious that the material is breaking down or that the flexibility is no longer there where it is needed, for example on the spine or the hinges of books, that it may be necessary to act, and then sensibly.

**The Recipes**

The new set of guidelines will contain various recipes corresponding with the diversified approach:

* A cleaning agent for fixed surface dirt, and a degreasing fluid for leather or parchment (wrongly) treated in the past.
* Different dressings for leather and parchment, and emulsions for leather, the latter containing both distilled water and a solvent (aromatic-free benzine).
* A buffering agent, to be applied separately (a solution of imidazole in isopropyl alcohol and aromatic-free benzine).
* An impregnating agent (H 51) as a last resort for severely decayed leather. This will homogenize the fiber material, but may darken some leathers.
* The formula for calculating the amount of dressing or emulsion needed which was included in the previous version of the directives has been deleted, since we feel that it should always be applied sparingly, once or twice.
* For a complete listing of the ingredients and concentrations please refer to the upcoming publication of these new guidelines.

**Epilogue**

In the past questions have been raised as to the effectiveness of 'leather dressing' as such, even its adverse effects.