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### Front cover:

St. John the Evangelist and his disciple Prochorus, “The Four Gospels”, manuscript B 45  
in the collection of the St. Petersburg Branch of the Institute of Oriental Studies, Shosh (Isfahan), 1623,  
scribe Steppanos, artist Mesrop Hizantsi, paper, fol. 210b, 11.0×15.0 cm.

### Back cover:

St. Matthew the Evangelist, the same manuscript, fol. 19b, 12.0×17.0 cm.

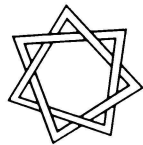
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# CONSERVATION PROBLEMS

*Françoise Cuisance*

## MOUNTING AND EARLY RESTORATIONS: THE CASE OF AN ACCORDION BOOK, PELLIOT TIBETAIN 45\*

Manuscript Pelliot Tибетain 45 (see *fig. 1*) [1] is among one hundred and forty Tibetan manuscripts in accordion form which belong to the Bibliothèque nationale de France collections. Eleven other manuscripts of similar form are written in Chinese. Other collections are to be found in London and St. Petersburg. Ninety per cent of the extant books in this form are written in Tibetan.

According to specialists on the history of the Far Eastern book, the accordion-form book dates to no earlier than the late eighth century and spread mainly under Tibetan influence. Its form is inspired both by Indian books on palm leaves and Chinese scrolls. The accordion book allows the

reader easier and faster consultation, avoiding unrolling and rolling up; it certainly represents an improvement in comparison with the scroll book. The Tibetan accordions probably date from the Tibetan occupation of East Turkestan, judging from their paper and their number. As for ways of naming the accordion book, beginning with the twelfth — thirteenth centuries its other names, such as “fanfold book” or “*sūtras* folded binding” (in China) aimed to designate printed editions of texts from the Buddhist Canon. The accordion became the usual form of them up to our day. First of all, some words on the presentation and production technique of the accordion book [2] must be said.

### ACCORDION BOOK TECHNICAL DESCRIPTION

The accordion book consists of sheets of rather thick paper with laid marks often easily visible or sometimes placed very tightly. The sheets are first pasted together with a few millimetres overlapping, just as in scroll manuscripts; the sheets can be double-layered. The mounting neither follows any strict rule regarding sheets overlapping nor the placement of joints. Once the paper strip is obtained, it is folded in accordion form at regular, more or less large intervals, depending on the format of the book expected, making volets that I will call leaves.

The text is written on both sides of sheets; it follows lines parallel to the long sides of the leaves, in Tibetan manuscripts, or the text is written in columns, as in Chinese scrolls [3], after preliminary ruling in red or brownish ink or dry-point etching. To protect the manuscript, the first and last leaves, or only the front side of the first leaf and the back side of the last leaf, remain blank; a leaf, made of

the same paper as other leaves in a manuscript, can also be added both at the beginning and at the end of the a volume; it may be also that a cover, made of one or several layers, is lightly glued on the final leave. These covers are sometimes tinted in dark brown or blue. They can also be of silk.

Reading is performed by successively unfolding the leaves. At the end of the front side of the last leaf, the text continues on the back side of that leaf and further on the back side of other leaves. Therefore, the book pleats represent the part most vulnerable to damage in this kind of book. They need almost constant repairing and strengthening. Our manuscript Pelliot Tибетain 45, a personal collection of prayers, which probably belonged to a pious person who most likely bore the book in his pocket or possibly in the sleeve of his robe, is an example of such numerous restorations.

### PRESENTATION OF MANUSCRIPT PELLIOT TIBETAIN 45

Pelliot Tибетain 45 is a small book (162 mmÇ70 mm) comprising fifteen Buddhist incantations. Thirteen of them are complete; they bear no date but were probably copied in

the period of the Chinese occupation of Dunhuang. Several scribes participated in copying the text. They certainly had much experience; although the manuscript has no visible

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\* This study has been developed following the proposal of Mrs. Monique COHEN, Head of the Oriental Manuscripts Department at the Bibliothèque nationale de France, in collaboration with the Laboratories of analyses and the Photographic Department of the Bibliothèque nationale de France.

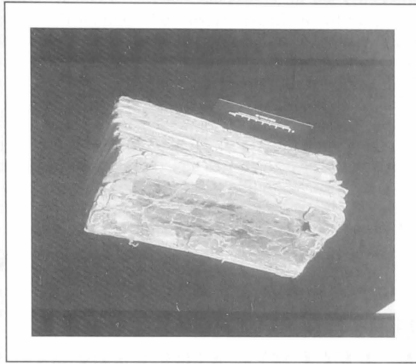


Fig. 1

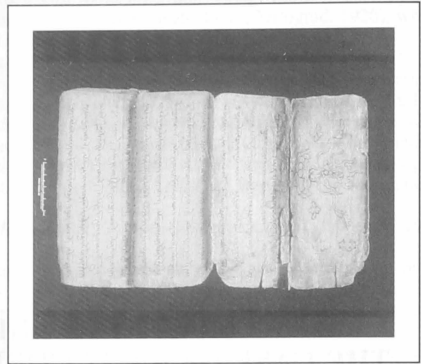


Fig. 2

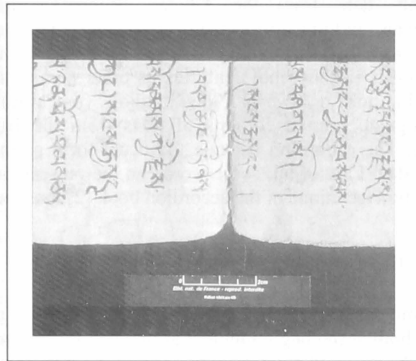


Fig. 3

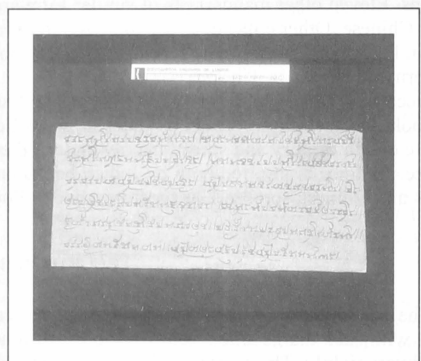


Fig. 4

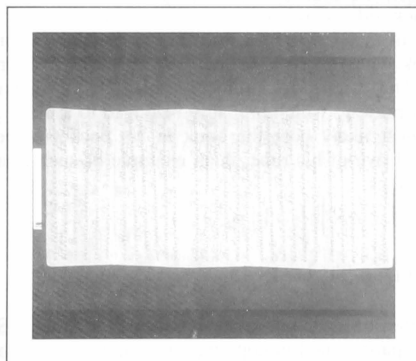


Fig. 5

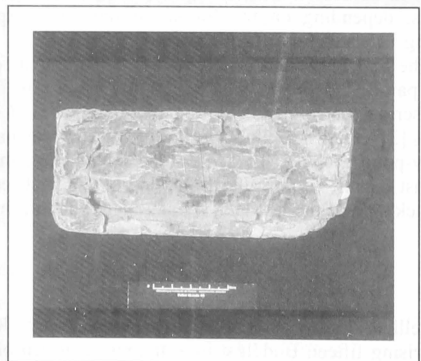


Fig. 6

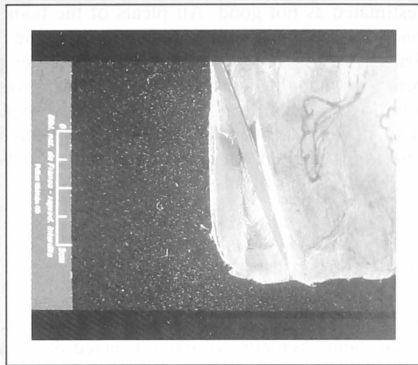


Fig. 7

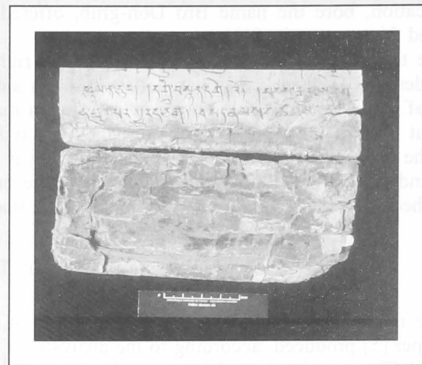


Fig. 8

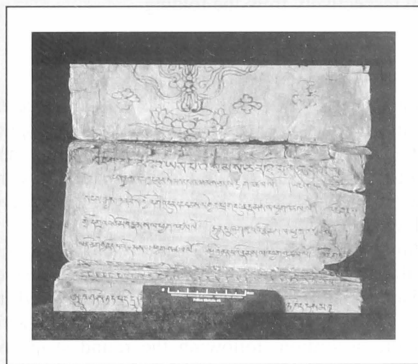


Fig. 9

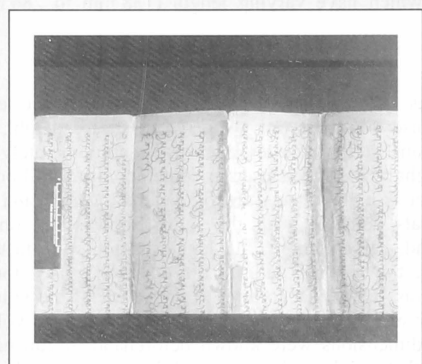


Fig. 10

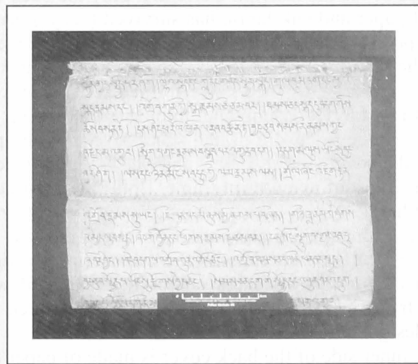


Fig. 11

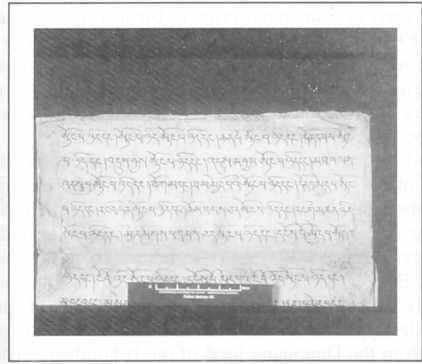


Fig. 12

ruling, the lines seem to be straight and are at regular intervals. The bibliographical notice issued by Marcelle Lalou indicates that some person, who, according to the scholar's identification, bore the name Bro Don-grub, offered and reviewed this manuscript [4].

The text in black ink is written from left to right on both sides of the leaves; it is parallel to the long side of each leaf which contains five lines per leaf, with a margin of about 10 mm all around. The front cover is missing while the back one is damaged. The surviving cover is of paper and silk layers. Remaining fragments of the brown paper sheet which covers the board bear black ink lines of

a design that cannot be identified now. On the counter-board, a design of Vajra on a lotus can be seen.

The present state of preservation of the manuscript can be estimated as not good. All pleats of the book have undergone several restorations, nevertheless the folds are in bad condition. There are, however, original pleats which bear no trace of restoration. The manuscript was read by unfolding the accordion, leaf by leaf, as explained above. Except for some very few restorations, using small chiffon backings, carried out at the Bibliothèque nationale in 1965, all restorations of this manuscript are old.

#### MANUSCRIPT PELLIOT TIBETAIN 45 TECHNICAL DESCRIPTION

The manuscript contains seventy-nine leaves of light buff paper [5] produced, according to the analysis, of mulberry [6]. The examination of the paper shows that it is not very homogeneous. It is rather thick (0.17 mm to 0.32 mm) with wide laid lines going perpendicular to the pleats; each sheet contains twenty laid lines with 45 mm intervals between them. The chains are not visible, while 5.0 mm to 7.0 mm wide joints can be clearly seen; they mark off the sheets which have varying length (138 mm to 286 mm).

The current state of the volume does not allow us to discover all of them. Actually we have detected only twelve. All joints, except the last one, are made in the same fashion as in Chinese scrolls, in the direction of reading, i.e. the edge of each sheet is glued over the edge of the following one [7] (see *scheme 1*). The paste, yellow and thick, used for mounting has overflowed the joints [8]. All pleats are made along the joints except the last two which are 9.0 and 12.0 mm respectively from the folding.

\* \* \*

It is not unusual to find sheets of different length in manuscripts from this period. The sheets' height, that is the long side of the book leaves, is approximately half the height of the sheets used in contemporary scroll books. The fact that the sheets are of different length and that the pleats coincide with the joints shows that, on the one hand, half sheets, of full length or not, were fastened to make the volume, and, on the other, the place for the joints was selected according to the width of the volume. In other words, the initial strip was prepared for a volume whose dimensions were known beforehand. It can be assumed that we have here a careful mounting performed at one time, which would explain the fact that most of the joint pastings are in the same direction and with about the same width.

Some additional remarks should be made concerning our manuscript. It demonstrates the following feature: the two last leaves of the manuscript, or the last sheet, are made of paper which is thicker (0.32 mm) and looks more buff and fluffier than the others. The last joint corresponding to them differs in place and pasting direction. On these leaves, pale pink horizontal lines between the written lines can be seen (see *fig. 2*). They are about 3.0 mm wide, traced free-hand and certainly with a brush. It is a feature we could not find in other manuscripts. These pink lines' function remains obscure, although one could think that it was a sort of ruling. This sheet of the manuscript might be an addition to the text or an extra paper completing the calligraphy of the text. Besides, the angles of the leaves are neatly and deliberately rounded (see *fig. 3*), as in manuscripts of bundle or booklet type. A closer look at other accordion manuscripts from the Dunhuang fond of the Bibliothèque nationale shows that almost all of them have this particular feature; some of them have trimmed angles.

We have also noticed that all the leaves must have been trimmed together after the sheets were given accordion

form. Manuscripts Pelliot Tibetain 46 and 261 (see *figs. 4 and 5*), are, for instance, obvious examples. The leaves of the first one have the form of trapezium while the leaf edges of the other are not right-angled. Irregularities similar to those found on the first leaf occur on other leaves as well, which is characteristic of both manuscripts.

Although our manuscript 45 is badly damaged, one can assume that this method of trimming manuscript leaves after its shaping into accordion might have been used in this case too. As a matter of fact the joints coincide with the folds of the accordion, following the round shape of the sheets' angles; on the other hand, the round shaping, which is not strictly the same in every four corners of the first leaf, keep the same shape throughout the volume.

As was mentioned above, the volume under discussion certainly had two covers, one at the beginning and another at the end of the manuscript. Currently, only the back cover made of paper and silk fabric has survived (see *fig. 6*). It is in very poor condition. The cover consists of five layers of which the middle one is a double layer of rather thick buff mulberry paper [9] of sheets-size format. Rather thick blue silk with a fabric design and thinner salmon-pink silk, folded on three sides, are pasted successively on the paper basis of the cover (see *scheme 2* and *fig. 7*). The folded silk serves as a sort of manuscript frame. Both silks protrude on the fourth side of the cover, forming some kind of protection like a hinge; they are pasted on along the last pleat connecting the two last leaves in the manuscript (see *fig. 8*). A sheet of dark-brown paper covers the whole of which only a fragment now survives, and it is decorated with an ink design.

The inner side of the back cover is made of paper similar to that of the manuscript; it is decorated with the Vajra design in ink; the sheet is pasted on the cover board which in turn is glued on the last sheet, forming a guard of a few millimetres thick (see *fig. 9*).



Fig. 13



Fig. 14

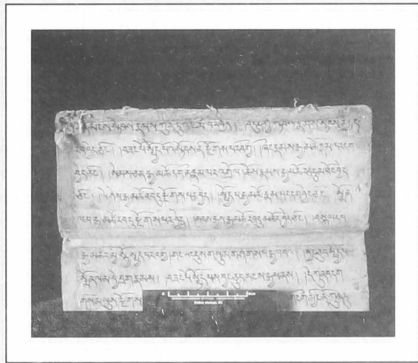


Fig. 15

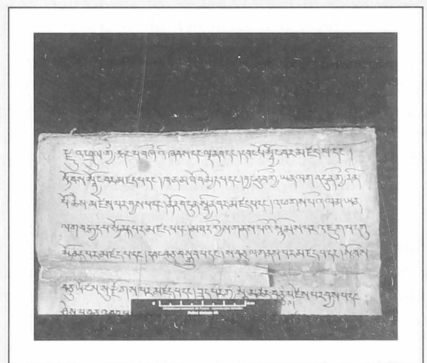


Fig. 16

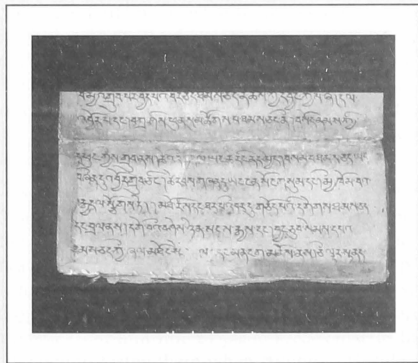


Fig. 17

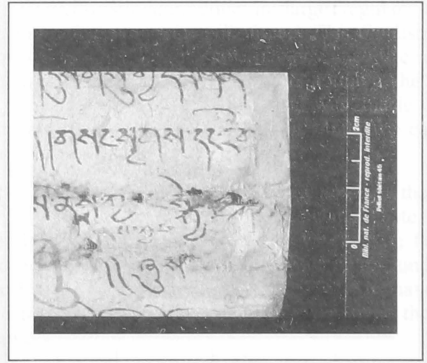


Fig. 18

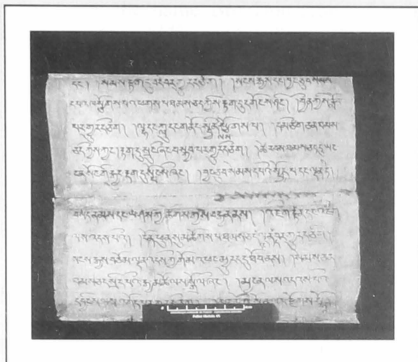


Fig. 19



Fig. 20

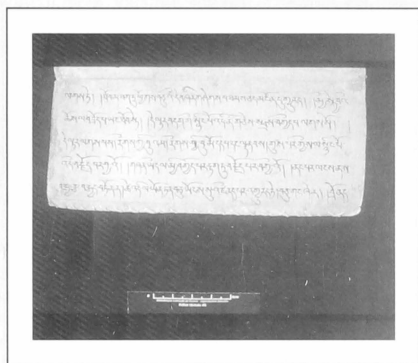


Fig. 21

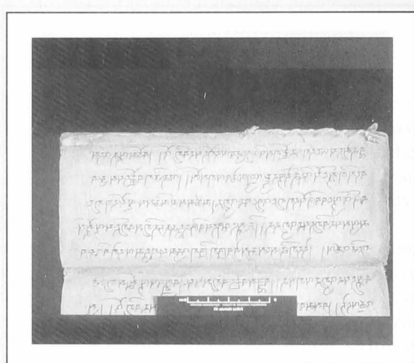


Fig. 22

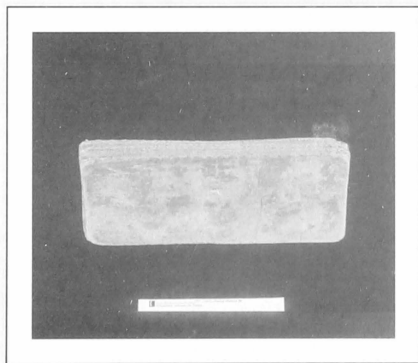


Fig. 23

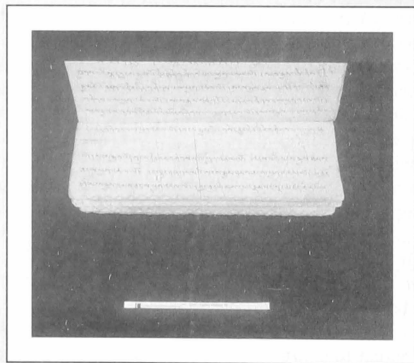


Fig. 24



Most of the leaves have an ochre-yellow silk strip which covers part of the front side of the left margins (see *fig. 10*), so that the initial characters are hidden in some points under this silk strip. Originally, the strip was intended to go throughout the whole manuscript but in places it became unglued in the course of time, and some fragments were therefore lost. Only slight traces of the original paste can be seen now. The purpose of these silk strips is not quite clear. It might have been a sort of decoration device to strengthen the leaves or it served to emphasize the beginning of the lines. No other examples are found in the Pelliot collection while silk strips used to consolidate the pleats can be found in other manuscripts.

#### EARLY RESTORATIONS

As was noted above, the accordion manuscript pleats are the part most subject to deterioration; they are the most fragile element in such books, particularly if they are in abundant use as is the case with Pelliot Tibetain 45. The traces of early restorations can be found in the book, mainly pleat restorations. We can see stitching in various threads and of various types, as well as various kinds of paper strengthenings, made as the book was deteriorating.

We can identify different methods of restoration employed successively, starting with the earliest ones. They could be detected thanks to the superimposing of many restorations which our manuscript demonstrates. It should be noted, first, that an examination of the paper and threads used during these old restorations was made in the laboratory of the Bibliothèque nationale de France [10]. As the investigation showed, the paper used is from mulberry pulp while the threads are all of silk. The early restoration devices were as follows:

1. Overcast stitching in very thin silk red or buff threads performed in small tight stitches, made at very regular intervals (see *figs. 11, 12, 16*) close to the leaves' edges. They were used throughout all the leaves but also as partial restoration here and there.

2. Guard strips of paper, thinner and lighter in colour than the manuscript paper, skilfully pasted without hiding the text, on the front side of and astride the leaves to be fastened. These guards over the stitching (see *figs. 12 and 16*) described above are stuck to replace the old ones, which had probably deteriorated; they are found also on pleats in good condition (see *fig. 13*). One can assume that during a restoration of some damaged pleats, when the pleats with lost stitching were repaired, those still in good condition were strengthened also as a preventive measure.

3. Stitching on the strips of thin paper (see *fig. 14*), pasted on the pleats, or over separate paper strips protecting the edges of every pair of leaves to be fastened. The state of preservation does not allow us to indicate with precision what kind of stitching took place. These guards or strips are pasted on only slightly, so that it seems that they are maintained thanks to a thin line of paste layer close to the edge, as if intended to fasten them when stitching. Besides, stitching is found in the middle of the strips, which is not always the case with the stitching in the older protection devices employed in our manuscript. These paper strips, aimed to protect the sheets from tearing, were put on when stitching.

A small piece of such silk along one pleat has survived in our manuscript.

The silk strip was added after completing the text; it was fixed to the cover, above the blue silk cover. This strip of 10 mm wide is pasted on the cover in such a way that it overlaps the cover edges and continues on the last leaves of the manuscript. This silk follows exactly the round shape of the corners as if the leaves and the silk had been cut together. Therefore, one can assume that after completing the text and placing this strip, all the leaves, including those which are part of the cover, were cut together, taking their final shape. After that the cover was put on and finally affixed to the manuscript.

4. Wider guards (see *fig. 15*) of the same colour and of approximately the same thickness that the manuscript paper were also put atop the adjacent leaves, covering the leaves' edges partially or fully. After that the corners and right margins of several leaves were strengthened. Because the guard hides some characters or part of them here and there, the text was rewritten in ink (see *fig. 16*). To paste on the guard, an ochre-yellow paste [11] put in more or less thin layers or, at times, in thicker mass was used.

5. A very thin violet thread was used for overcast stitching in partially or fully repaired pleats first restored or strengthened by means of guards. This very thread was used in the partial stitching which can be seen on the silk strip mentioned above (see *figs. 10 and 17*). It is also used in the repairing of the leaves' centre, representing a sort of darning stitching (see *fig. 18*).

6. a) Overcast stitching done in pink, buff, and green threads of cord type, which are thicker than those used in the first stitchings. All are done in the same regular way, with longer stitches than those employed before them (see *fig. 19*).

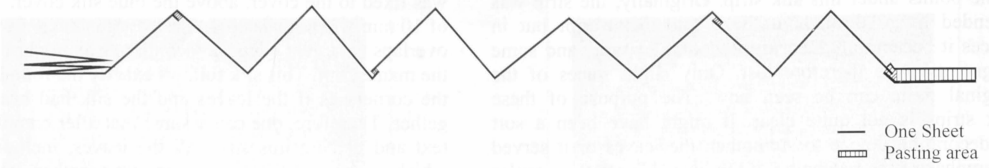
- b) In this set, a different kind of stitching [12], without pitching the sheets, can be seen, which provides its full opening. The stitching seems looser and in effect is less strong than the others. Such stitching was used only twice and might have been a trial (see *fig. 20 and scheme 3*).

7. Overcast stitching done in large regular stitches using thick white organzine silk thread. This final stitching was, probably, done by the same person, since the method of stitching is the same, particularly in stopping the thread (see *figs. 21 and 22*). This stitching was made at the last stage of restorations. Under this stitching we can find previous restorations.

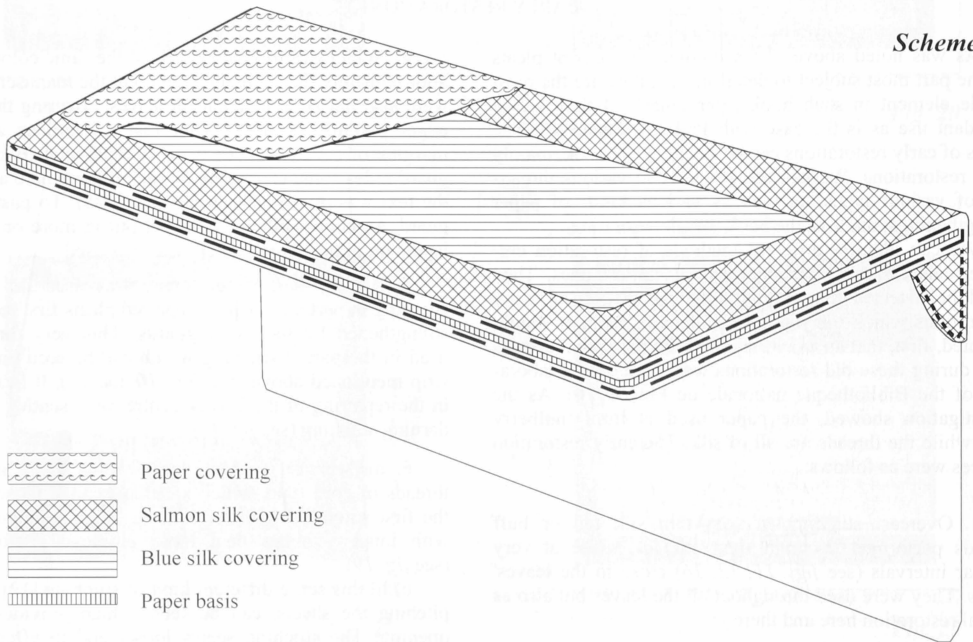
8. The consolidation stitching of the cover at the hinge level is done with large overcast stitches using white thread. Currently, the cover is detached but we can see that the thread originally passed through the four layers under the brown leaf found below. This last leaf seems to have been placed after consolidation as a new cover, over the early silk covers.

In short, the early restoration did not stand the test of time, although this restoration has not been completely lost; it was covered up or completed by another person. Anyway, at least three covers are extant which were affixed one after

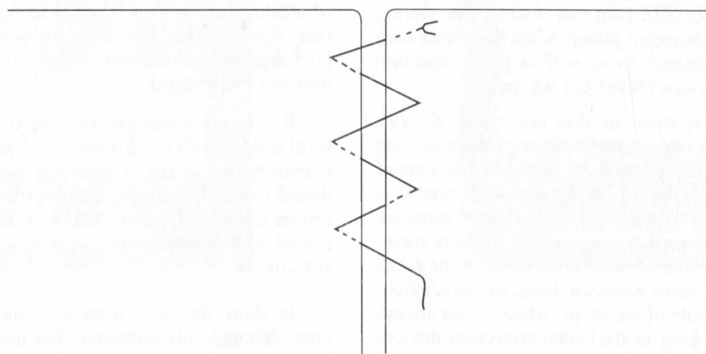
Scheme 1



Scheme 2



Scheme 3



another — one of blue silk, one of pink silk and one of decorated brown paper. We can notice that, with a few slight differences, two methods used to restore the pleats imply overcast stitching with silk threads or paper strengthenings (one case is not silk strengthening with paper but with silk). Both methods alternate. In the course of the restorations, the paper strengthenings provided a solid basis for stitching. Evidently, the combination of both methods took place at one time in the restoration of the pleats with stitching done through the guards.

The manuscript under consideration bears traces of successive restoration in layers or side by side and demonstrates successive restoration periods. Each subsequent restoration was of growing importance, since it had to replace (or to cover) the previous one and also to strengthen it, for which extra backings were added and thicker thread was used performing fewer passages through the paper, which was getting more and more fragile.

The stitchings our manuscript demonstrates are undoubtedly restorations, as they are found only in some places, in particular on this or that part of the pleat. In contrast, manuscript Pelliot Tibetain 98 (see *figs. 23* and *24*) is an interesting variant. It is of a fairly large format and in good condition. Its leaves, which are of thick buff laid

paper, have half-rounded corners and clean edges as is the case with palm-leaf manuscripts. If there were no joints in the paper, one could think that originally this was a book in bundles turned into an accordion. Its leaves are fastened with the help of a stitching done with regular cross stitches using very twisted and thick thread along all pleats except two of the volume. The stitching was done at one time, and certainly by one person. At some points, this stitching is repaired with coloured silk-like brilliant threads. As for the manuscript's total repairing or transformation into accordion form, it should be noted that such stitching was regarded as a sort of mounting. However, no examples are available where stitchings would be a real mounting: all accordion books are made using paper folding.

To conclude, our manuscript Pelliot Tibetain 45 is skillfully executed despite the fact that it was quite an ordinary book. However, it appears as a copy of a "pocket book" type and format binding, abundantly used and therefore carefully repaired as often as necessary. It is clear that most such bindings employed in ordinary books, with their fragile constitution, could not have survived in large number. Accordion-form books, therefore, were bound to disappear over the course of time despite their convenience.

### Notes

1. Pictures were taken by Patrick Bramoullé of the Photographic Department at the Bibliothèque nationale de France.
2. J.-P. Drège. "Les accordéons de Dunhuang", *Contributions aux études de Touen-Houang*, vol. III (Paris, 1984), pp. 195 - 204. Publications de l'École française d'Extrême-Orient, CXXXV.
3. Chinese accordion books are vertical (the pleats go along the leaves length), while in the Tibetan ones the pleats are horizontal, in "Indian style".
4. M. Lalou. *Inventaire des manuscrits de Touen-Houang conservés à la Bibliothèque nationale*. (Fonds Pelliot tibétain) (Paris, 1939), p. 15.
5. According to the colour standards established by the Bibliothèque nationale, this colour is referenced as 7.5/4 in M. Oyama and H. Takehara, *Revised Standard Soil Color Charts* (1967).
6. The analysis was carried out by Nathalie Pingaud from the Richelieu laboratory of analysis of the Bibliothèque nationale de France.
7. Figures have been performed by Cécile Sarrion, conservator at the Bibliothèque nationale de France.
8. My colleagues from the Richelieu laboratories of analysis of the Bibliothèque nationale de France and the Marne-La-Vallée technical Centre are studying some samples and will produce final results later. However, they have been able to indicate that this paste is a mixture of substances which are not all identified with certainty, but in which starch is a main component.
9. Cf. n. 4.
10. Cf. n. 4.
11. Cf. n. 6.
12. Cf. n. 5.

### Illustrations

- Fig. 1.** Manuscript Pelliot Tibetain 45.
- Fig. 2.** Leaves with colour horizontal lines between the written lines.
- Fig. 3.** A sample of deliberately rounded leaves.
- Fig. 4.** A sample of manuscript Pelliot Tibetain 46.
- Fig. 5.** A sample of manuscript Pelliot Tibetain 261.
- Fig. 6.** The back cover of manuscript Pelliot Tibetain 45 made of paper and silk.
- Fig. 7.** The cover with silk glued on it.
- Fig. 8.** The two last leaves of the manuscript with silks glued on along the last pleat.
- Fig. 9.** The inner side of the back cover, made of paper, with the Vajra design.
- Fig. 10.** An ochre-yellow silk strip covering part of the front side of the left margins.
- Fig. 11.** A sample of overcast stitching serving as a guard.
- Fig. 12.** A sample of overcast stitching and guard strips of paper.
- Fig. 13.** Guard strips of paper placed on the pleats in good condition.
- Fig. 14.** Stitching on the strips of thin paper.

- Fig. 15.** Wider guards of paper put astride the adjacent leaves, covering the leaves' edges partially or fully.  
**Fig. 16.** A sample of overcast stitching and guard strips of paper; the text rewritten in ink can be seen.  
**Fig. 17.** The partial stitching in a very thin thread over the silk strip.  
**Fig. 18.** A sample of employing a thin thread in the repairing of the leaves' centre, forming a sort of darn stitching.  
**Fig. 19.** A sample of an overcast stitching.  
**Fig. 20.** A sample of a stitching.  
**Fig. 21.** A sample of the final stitching.  
**Fig. 22.** A sample of a stitching.  
**Fig. 23.** Manuscript Pelliot Tibetain 98, variant of restoration.  
**Fig. 24.** A variant of restoration.

**Scheme 1.** The mounting of sheets viewed in profile.

**Scheme 2.** The cover viewed in cross-section.

**Scheme 3.** A scheme of stitching.

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