

MUSLIM BINDINGS WITH *AL-KHĀLIDIYĀNĪ* DOUBLE BORDERS

The introduction of the methods of quantitative analysis into the study of Islamic bindings is producing results, which promise considerable progress in this field in the nearest future. Like in other cases considered in my previous two articles [1], the advantages gained by applying these methods can be explained by the very nature of Muslim decorative art, where symmetry and proportions always played a prominent part.

Fig. 1 shows the upper cover of a manuscript belonging to the Topkapı Sarayı Library in Istanbul [2]. O. Aslanapa, who published the cover, describes it in the usual way: the manuscript “has a lacquer binding with gold painting on a black ground. The cover has a central medallion with pendants and quarter medallions decorated with *rūmī*, clouds and *hatāyī*. The area between these shows symmetrical decoration of fine spiral forms, peonies, *hatāyī* and birds which look like pheasants. The same motifs are employed on the lower cover” [3].

Some decorative elements not mentioned in the description of the binding cited above are considered in the present article. These are the two rectangular borders set one within the other (fig. 1). On fig. 2 they are displayed as a principal scheme free from all other components of the decorum.

Measurements of the binding, made from the photograph published by O. Aslanapa, show that the inner sides of the smaller border form the so-called “double square”, *i. e.* a rectangle with sides relating as 2:1 (ABCD on fig. 2). The inner sides of the larger border also form a rectangle (A'B'C'D'), its sides relating as 5:3. As far as I know, the presence of proportional rectangles, the relation between their sides expressed in whole numbers, has so far never been recorded in the descriptions of decorative bindings [4]. As there is no evidence on this phenomenon in literary sources, we should consider the possibility of having here an occasional construction involving two rectangles with their sides relating as 2:1 and 5:3 by pure chance. The question would have never been answered if it were just a single case. By the present time, however, I know at least nine bindings with decorative patterns involving a double square set within a rectangle proportioned as 5:3 (see the list below). But even the existence of many examples does not solve the problem completely.

In theory there is always a possibility to set within the A'B'C'D' rectangle a whole series of double squares, each time changing the absolute length of their sides. For

this reason even if the proportion itself, being nine times repeated in binding decorations, ceases to be an exclusion, the absolute size of the rectangles could still be dictated by pure chance. In this case there would have been nothing to write about.

In our case, however, we deal with a construction with a permanent configuration of its elements, since their actual dimensions are interdependent. The same features are present in a whole series of bindings. It means that the binding pattern described here should be considered as a special construction, which we may define as a *al-Khālidiyānī* double border. Its qualities are striking.

The long sides of the rectangles forming the double border reveal a stable proportion of 6:5, while the correlation of the short sides is $6^2:5^2$, *i. e.* they are related as the squares of the same numbers. This “Pythagorean” proportion, graceful and at the same time significant, makes it impossible to build more than one double square within a rectangle proportioned as 5:3. This only possible double square can not therefore be an occasional construction, it could not as well be repeated on a series of bindings by pure chance. It removes all doubts which arise when first approaching the *al-Khālidiyānī* double border [5].

The binding we are considering here (fig. 1) was reproduced with no scale, and no measurements were given in its description, which makes it difficult to support our analysis with calculations. The reader, however, can check the author's conclusions by measuring the photograph reproduced in the article and making his own calculations. It will be enough to verify the proportions suggested here — it gives you an exclusive chance to see how slight were the deviations made by the artist who drew the double border [6].

Now, when we are sure that the well-proportioned double border really exists as one of the components of the decorative pattern of book-bindings, let us return to the upper cover of the Istanbul Manuscript and to its description. Taking into account the nature of its rectangular borders, it becomes possible to make a more sophisticated description of its decorative pattern.

Four corner pieces set within the central (smaller) rectangle define the outlines of the figure which quite often appears on decorated Islamic book bindings. Along with the central medallion and its pendants it forms a logically motivated group deserving a distinct character-