

Geometric Analysis In Miniature

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Abstract— *The article examines the geometric constructions of individual parts that existed for centuries and were used in practice, several systems of proportions and various methods of constructing volumetric structures in the structure of compositions of the Middle Eastern miniature.*

Keywords— miniature, composition, chiaroscuro, volume, plane, isometry, prism, pyramid, projection.

1. INTRODUCTION

The Middle Eastern book miniature is one of the most interesting and difficult phenomena to study. Miniature, developing in close connection with the art of the book, can be the deepest source for understanding both the ancient and modern worldview of the culture of the Middle East, which is especially important in modern attempts to build an intercultural dialogue. The artistic uniqueness of the images and the variety of meanings contained in the miniature represent a vast and still insufficiently explored field.

2. MAIN PART

The development of miniature is inextricably linked with book culture and the art of calligraphy. Basically, the miniature served as an illustration. It made it possible to supplement an artistic text with visual images that make it easier to understand the text and give the reader special pleasure. However, the miniature does not just illustrate the text, it creates its own visible world, developing in parallel with the verbally drawn images. Always developing at the junction of literature and painting, miniature combined the features of both artistic and poetic language.

The miniature has its own expressive language of painting, developed over centuries of evolution ... The oriental master conveys the perspective and the spatial plans associated with it conditionally, as if from a "bird's flight", which allows showing multi-figure compositions on a small plane, including simultaneously the architectural decor of the exterior and interior, then there is to create a whole microcosm.

A complex and creative process that requires special skills and skill from the artist. The beauty of the miniature was in the finest drawing, multicolor and bright color saturation, in the expressiveness of the movements of the figures, in the exquisite simplicity and clarity of the landscape and architectural structures. The art of book miniature is conventional and decorative. There is no chiaroscuro in her, she does not know the perspective. The image of a person is rendered flat, the silhouettes of large figures are more clearly drawn. As in the art of poetry, in miniature, the technique of repetition of favorite subjects, traditional for medieval creativity, was used.

Miniature is painting without chiaroscuro. Line is one of the main expressive means of miniature. It acts both as a pictorial element in creating an image, conveying movement, in building spatial plans, and as an aesthetically significant element. It rises to the emotional sound with its melodiousness, smoothness or tense chased elasticity. The limits of its capabilities are unprecedentedly wide from a light touch, subtlety elusive to the eye, to clearly thick, as necessary, contours. The miniature gives a special emotional mood to the rhythm. As a means of artistic expression of miniatures, we can trace the rhythm in the alternation of lines, color silhouettes, light spots, planes of different sizes and shapes. Emphasizing convention in miniature, as a characteristic, defining feature, it can be noted that it is associated with the medieval requirement for a religious and symbolic interpretation of the world. We can say that it manifests itself, first of all, in the conventional image of man, animals and birds, landscape,

architecture and in the transfer of spatial depth.

We study the eastern miniature as an unused perspective (it will appear under European influence only in Great Mogolskaya India), the near and far plans in it are one-dimensional, there are no spatial contractions in it.

The miniature is strictly subordinate to the classical canon that has been formed over the centuries, the basic elements of which have been preserved until the 20th century. Its main task is to display the inner, hidden meaning of things, therefore, basically, the image is devoid of a clear reference to the text, reproducing some kind of alternative reality.

Geometric analysis of this object shows that flat and volumetric images were used in the execution of the miniature. (Fig. 1).



Fig.1. Kemaleddin Behzad. Seduction of Yusuf, detail. Miniature. "Bustan" Saadi.

1488 National Library, Cairo

For example, the structure of the tower is in the form of a prism in combination with a six coal pyramid. Because three faces are visible from the front and most likely it is a six-coal pyramid. And here the spatial drawing in the coal pyramid is considered (Fig. 2).



The image of a building element in the form of an arrangement below, also in the form of a tower, corresponds to an isometric projection of a quadrangular prism with a combination of a quadrangular pyramid with its roof. (Fig. 2).



There is a fragment in the building in the form of a balcony, which corresponds to the dimmetric projection of a four-angle prism, as evidenced by its lower base. (Fig. 3).



The part of the building with the image of a window and a door corresponds to the dimmetric projection, where the image of these elements is spatial, although the drawing is linear there are elements of spatial images. You can say 3D modeling. (Fig. 4).



The miniature uses 2D flat images, but some elements, mainly where the building is depicted, are shown on the sides. These images resemble a modern axonometric projection, along which spatial images are performed that convey the volume. This suggests that in the Middle Ages three-dimensional images were used in miniature, which give more visual images that

facilitate visual perception of these masterpiece of art.

3. CONCLUSION

Thus, having considered the features of miniature art, we can conclude that miniature has its own artistic language of its construction. And it is based on deep philosophical, ethical and aesthetic principles and cannot be regarded as realistic painting, and that, despite the many works devoted to its study, miniature even for art specialists remains a mystery of those distant times.

4. REFERENCES

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