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**COLORING BOOKLET SERIES
ABOUT THE ARTS OF CENTRAL EURASIA WITH
RICH HERITAGE OF ETHNOMATHEMATICAL
ORNAMENTAL ARTS**

**by
Szaniszló Bérczi, Katalin Bérczi, Zsófia Bérczi, Sándor Kabai
Budapest, Hungary**

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ADDITIONS TO THE COVER DESIGN

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ORNAMENTAL ARTS**

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Abstract: *A coloring booklet series embraces the great cultural communities in Eurasia. Many cultural communities have various developments in art and technology. These developments are represented in the ornamental art adornments which can be considered ethnomathematical results of the community. We give a concise summary about this series which began in 1996 and recently reached its 13th issue.*

INTRODUCTION

The first author took 6 visits as research fellow in the Katholieke Universiteit Leuven, where he had exhibitions on the topics of ornamental art and mathematics in arts. At the beginning the exhibitions focused on the Carpathian basin, then to Central and Northern Europe, finally exhibitions embraced many Eurasian arts. The exhibitions later gave the idea of diminishing them into a booklet, which can be colored by water color paint. That is the short way of the formation of the series. A community of teachers who primarily

studied environment and culture, decided to publish the booklets of the series. The Society of the Protection of the Environment and Natural Resources not only helped but distributed the booklets so it became a joyful homework both for children and their parents and grandparents. We can say that the topics and the style of the homework is valuable between ages 7 and 77, so a good mental help is to study Eurasian art through coloring the drawings of this rich heritage.

ORNAMENTAL ART AND MATHEMATICS IN THE COLORING BOOKLETS: FRIEZES

Mathematics is an important part in frieze construction. The HONFOGLALÁSKORI KIFESTŐ (COLORING BOOKLET OF THE AGE OF THE CONQUEST OF HUNGARY) shows such basic friezes with their skeleton (abstract pattern), a natural phenomenon and an artistic representation of the Hungarians of Árpád's Conquest Age (9.-10- C. A. D.) (Fig. 1.). Not only friezes of dresses, but horse mount and harness, and other metal, bone and wood carvings, painted textiles wear these adornations. Many archaeological objects were drawn by the author in museums to compile the booklet series. Hun-Avarian buckle of belts exhibit rich set of friezes and double friezes, too (Fig. 2.). They can be found both in the Honfoglaláskori and in the SZENT LÁSZLÓ KIFESTŐ (COLORING BOOKLET OF SAINT LADISLAUS). Saint Ladislaus was a king of Hungary in the 11th century and a famous mural series in old churches were named after his acts. The personality of Saint Ladislaus unified old and new artistic concepts.

Ornamental friezes can be found on church doorways of Romanesque Age. Like in Western Europe, in Hungary also the rich frieze ornamentation reflects older traditions. We found a doorway tympanon which exhibits arcs with different frieze types (Halmágy, Transylvania, Fig. 3a.). At the time of construction the village was part of the Alsó Fejér County, belonging to the Hungarian Kingdom, recently it can be found in Romania. This Halmágy doorway can be found in the KAZETTÁS MENNYEZETEK (CEILING CASSETTES) colouring booklet. One of the older traditions in western Eurasian art is to show the calendar and the path of the sun in the zodiac. Romanesque doorways and arcs inside the church frequently show the 12 months as arclets, nodes on a tendril, or braiding (Fig. 3b.) and they frequently occur in the ROMÁNKORI TEMPLOMKAPUK (ROMANESQUE DOORWAYS) coloring booklet.

PLANE-SYMMETRY PATTERNS

Covering of surfaces is also a rich part of the ornamental art. The rich Eurasian heritage can be found in the various issues of the coloring booklet series. In the SZENT ISTVÁN KIRÁLY EMLÉKEZETE (REMEMBERING KING SAINT STEPHEN) shows the mantle of Metz Monastery, a present from the royal pair the monastery. Old Christian church doorway adornations with cm-type symmetry can be found in the KAUKÁZUSI MŰVÉSZET (CAUCASIAN ART) booklet. The doorway pattern of Geghard is from the early 13th century (Fig. 4a.), the doorway pattern of Etchmiadzin is from the 17th century, both with cm-type pattern (Fig. 4b.). This booklet also exhibits the net-and-figures cm-like patterns which were shown in another paper of this volume.

Going toward east the IRÁNI KIFESTŐ (COLORING BOOKLET OF IRAN) exhibits both double friezes (Fig. 5.) as dress patterns of two Parthian kings from Hatra, and the cm-type pattern of the horse carpets carved on the stone monument of Firuzabad, also of the earlier paper shown. The art of the more eastern regions contains the famous murals of Afrasiab, Pendjikent, also studied earlier. But the KÖZÉP-ÁZSIAI MŰVÉSZET (CENTRAL-ASIAN ART) compares various older archaeological findings from the Altaj Mountains, which may have partly Hunnic origin. These ornamental adornations are also in the A HUNOK MŰVÉSZETE (ART OF THE HUNS) and they will appear in the booklet in preparation KÍNA MŰVÉSZETE (ART OF CHINA), too.

Interesting to compare the wallpaper-types of Central Asia and of the Mediterranean. In the AZ ÓKORI KRÉTA ÉS GÖRÖGORSZÁG (THE ANCIENT CRETE AND GREECE) exhibits the various patterns with composite structure but mainly modified by rotational type subset of the net elements. Whirls frequently appear at the communities living at the seaside. Therefore there fractal type patterns not only in the Greek, but in the Irish KELTA KIFESTŐ (CELTIC COLORING BOOKLET) and in the JAPÁN, AZ EURÁZSIAI FELKELO NAP ORSZÁGA (JAPAN, THE COUNTRY OF THE EURASIAN RISING SUN). On the Irish Celtic mirror and on the fractal type waves of Hokusai we can see the fragmentation of the droplets when water-waves collides to the rocks. Many modern and old art comparisons can be found in the AZ EURÁZSIAI NÉPMŰVÉSZETTŐL A SZÁMÍTÓGÉPES GRAFIKÁIG (FROM THE EURASIAN FOLK ART TILL THE COMPUTER GRAPHICS) coloring booklet, too.

SUMMARY

During the last 20 years a booklet series was published in Hungary about the Eurasian Arts. It contains very rich drawing set about the arts of great cultural communities. It is a great work and we hope we have time enough to cover ore and more characteristic

cultural regions. Probably people from another countries will also contribute to this work and the Symmetry Community is one of the promissful candidates who support spiritually this work.

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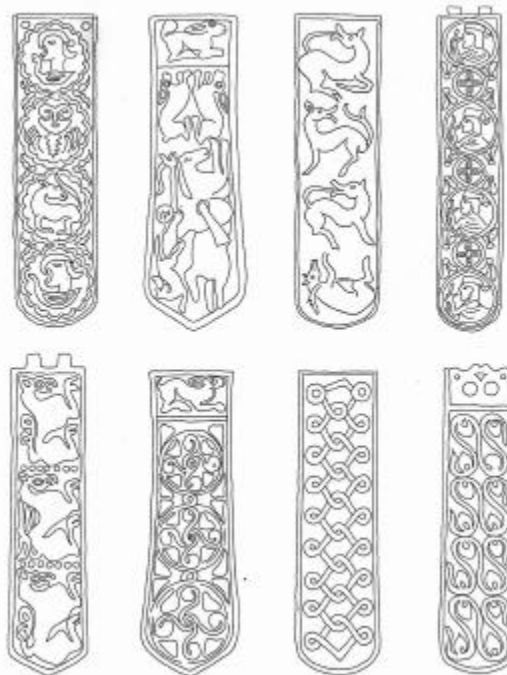
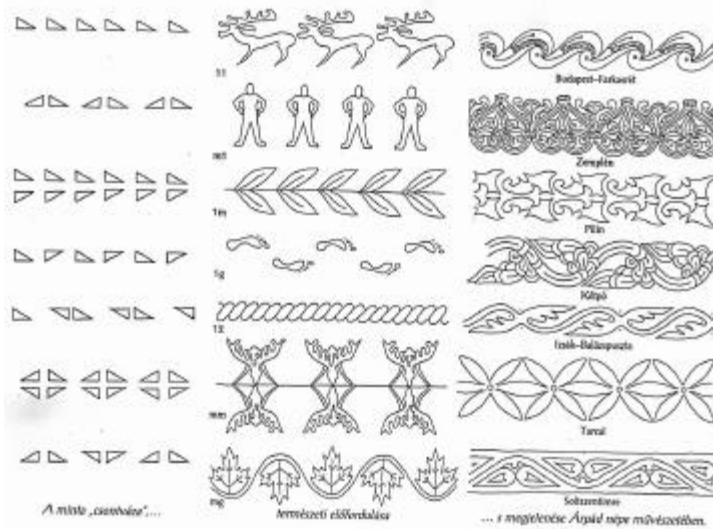


Figure 2: Hunnic-Avarian buckle of belts exhibit rich set of friezes and double friezes. Early Medieval Age (5.-8. C. A. D.)

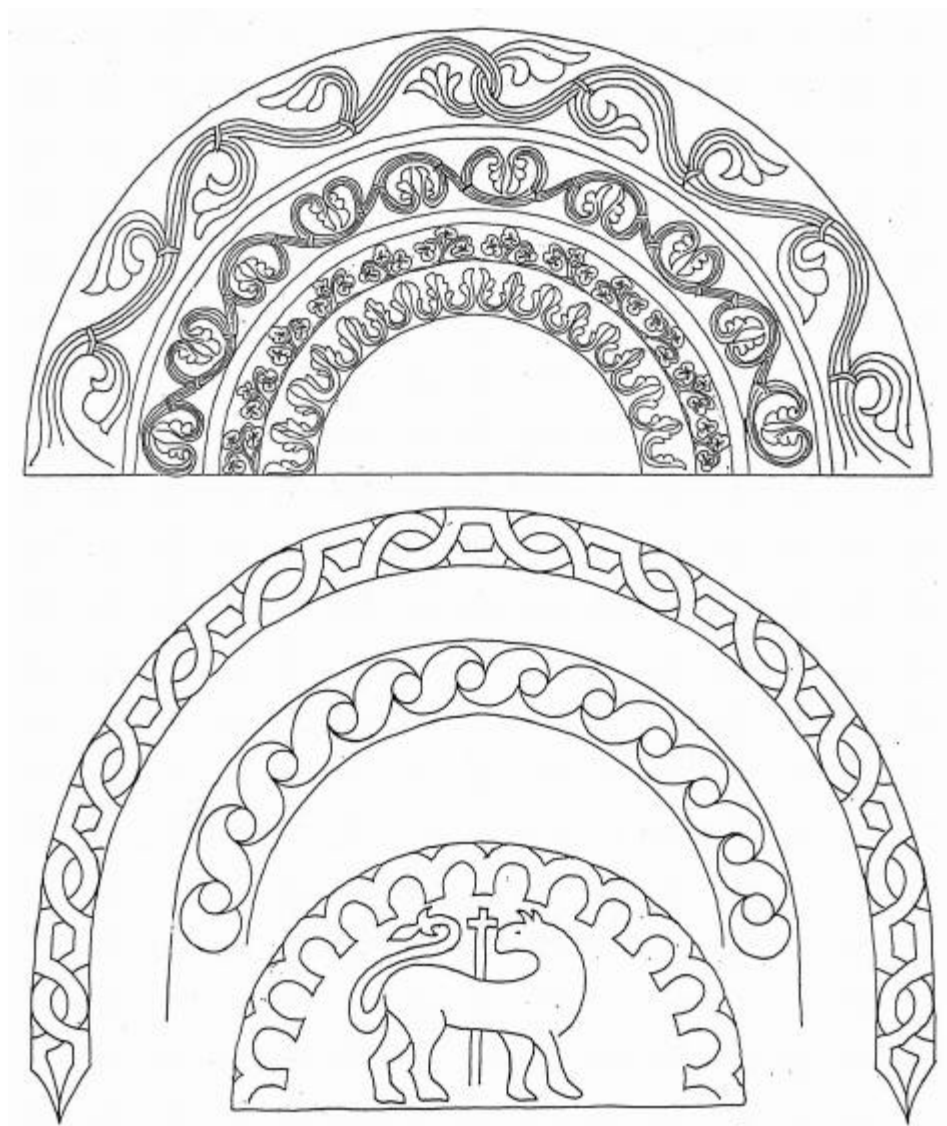


Figure 3: Romanesque doorway a.) with "calendar-type" arcs from (out to inside) Egregy, Csempeszkopács and Domokosfa from Hunagry, and (b) with tymphanon arcs which all exhibit different frieze types, from Halmágy, Alsó Fehér C. Transylvania, Romania.

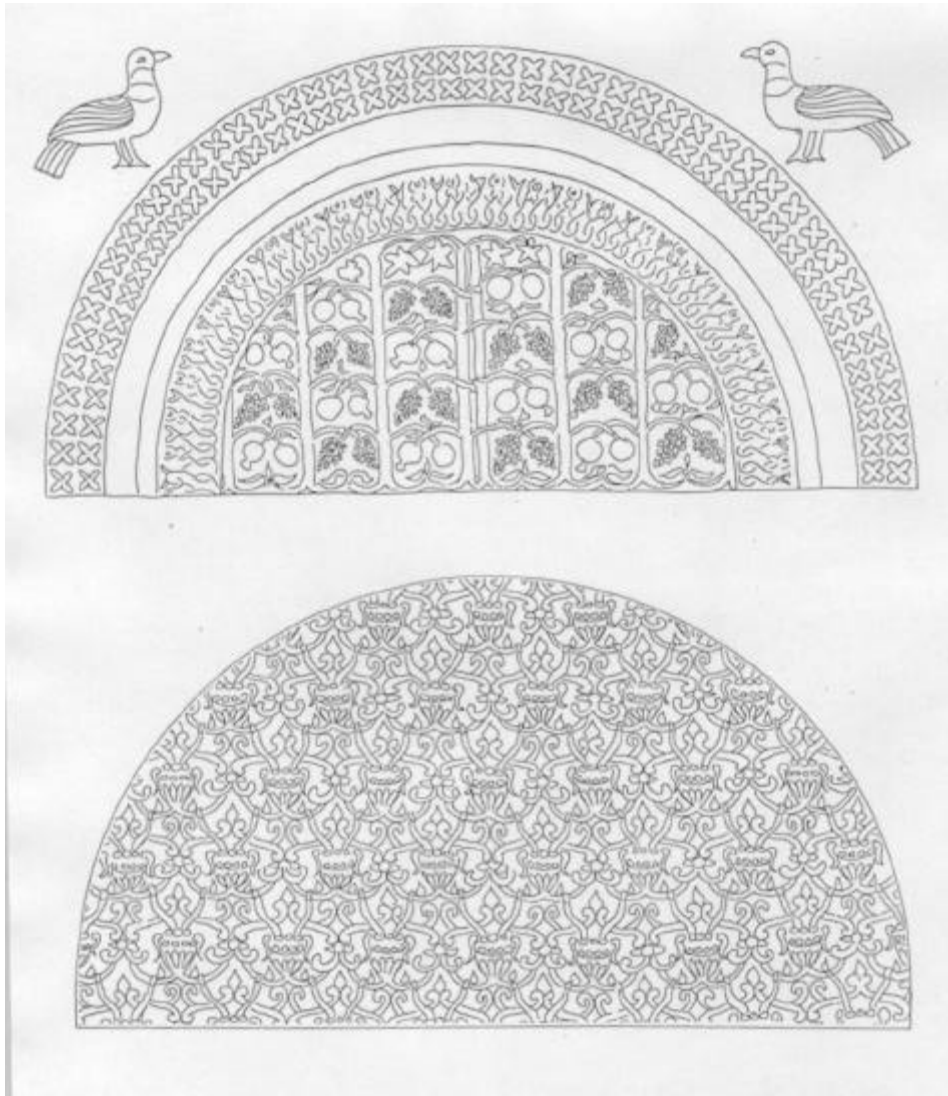


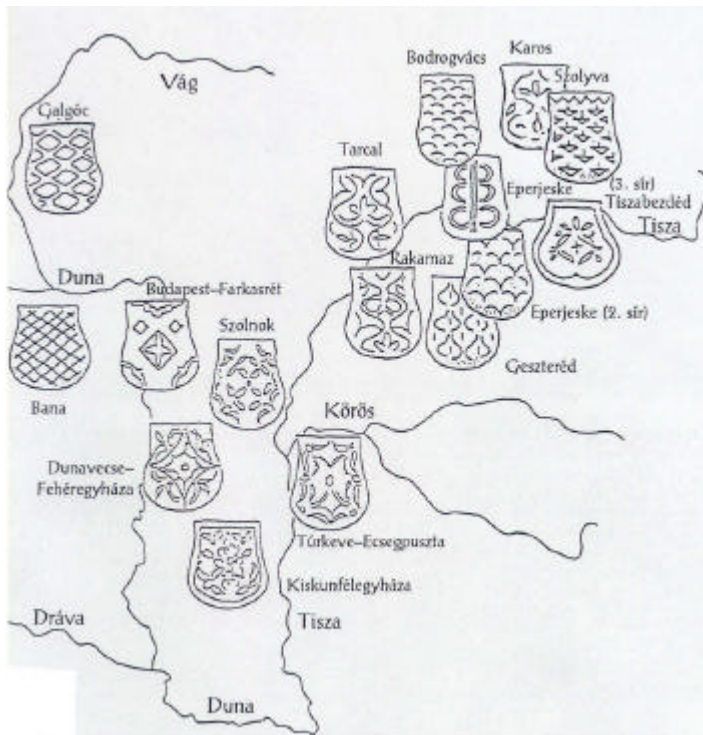
Figure 4: Romanesque doorways of Armenia with cm-type patterns at a.) Geghard, 13th C. A. D. and at (b) Etchmiadzin, 17th C. A. D.



Figure 5: Two Parthian kings from Hatra. They have beautiful double frieze dress patterns.



Figure 6: Three noble men in a reception, Afrasiab, Sogdiana, Central Asia, 5.-7. C. A. D.



Map: The finding sites of the sabretache plates in the Carpathian Basin, from the Conquest 9-10 century A.D.