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PRIZE-WINNING WOVEN BOOK FEATURED AT THE 1889 PARIS WORLD'S FAIR

[Horae] *Livre de Prières Tissé d'après les enluminures des manuscrits du XIVe au XVIe siècle* [Book of Prayers woven after illuminations in manuscripts of the fourteenth and fifteenth century]

In Latin and French, illustrated book on silk

Lyon, R. P. J. Hervier, designer; J.A. Henry, fabricator, for A. Roux, 1886-1887

[4] 6 + 44 + [4] = 58 pp, small in 40, 43 numbered pages, plus 6 printed preliminary pages, plus 4 pages front and back of mounted silk, unprinted, text block 168 x 138 mm., one half-page, three full-page illustrations, in addition to various styles of decorative borders and initials throughout on every page, woven entirely in silver-gray and black silk, with a greyish-silver texture to the cast. Fine binding of maroon levant morocco by Kaufmann-Petit and Maillard, art nouveau Parisian binders, maroon silk doublures, in pristine condition, maroon morocco spine, with five raised bands, stamped 'Livre de Prières', elaborately gilt. Dimensions 175 x 138 mm.

This unorthodox Book of Prayers is entirely machine-woven of gray and black silk. Faced with coming up with a submission for the world's fair of 1889, artisans in the textile capital of Lyons programmed Jacquard looms with hundreds of punch-cards. So difficult was the project that this is the only woven book ever produced. Competition at the fair was unusually stiff – the main attraction was, after all, the Eiffel Tower! Not to mention Buffalo Bill and Annie Oakley. The woven book nevertheless won a Grand Prize. It is now renowned as a proto-type for the computer.

PROVENANCE

Woven in Lyon, perhaps passing through the Parisian agent J. Kauffmann, this is one of between 50 or 60 books printed with silver and black thread on silk looms that were programmed using the punched-card system developed by Joseph-Marie Jacquard (1752-1834). Evidently books were all custom bound when sold, and they remained in stock for some years (suggesting that the production was not a huge success). It is said that 50 were printed, but to the best of our knowledge there is no actual record of the original edition.

This edition is curiously different to others we are aware of as the monogram on page vi displays two coats of arms, including that of the family Maingard de Saint-Malo, with the motto "UT RUPES NOSTRA", and dated '10 juin 1902'. The book was most likely given at the time of the reunion of the two families through marriage.

TEXT

p. v, Half-title page, "Livre de Prieres";

p. v1, Monogram; dated '10 juin 1902' with two coats of arms : i) family Maingard de Saint-Malo, d'or, à une fasce de gueules, au chêne arraché de sinople, brochant sur le tout et fruité de deux glands d'or pendants sur la fasce. Also present is the family motto "UT RUPES NOSTRA". ii) unidentified arms, azure, a saltire or, with 4 billets argent;

p. vi, Title-page, "Livre de Prières Tissé d'après les enluminures des manuscrits du XIVE au XVIe siècle. Lyon mdccclxxxvi";

p. viii, official sanction of the content of the volume, incipit, "Varias precum formulas," with the date September 8, 1886 and the name of Cardinal Louis-Marie Claverot, archbishop of Lyon and Vienne, with his arms and motto, along with the archiepiscopal arms of Lyon and the motto "Prima sedes Galliarum," a reference to the importance of the city as a seat of Christian faith from the late second century on;

pp. 1-10, "Les Prières du Matin et du Soir";

pp. 11-24, "Le saint Sacrifice de la Messe";

pp. 35-32, "La Messe de Mariage";

pp. 33-43, Prayers, for Communion (p. 33), to the Sacrament (p. 36), to the Holy Spirit (p. 38), to the Holy Virgin (p. 39), diverse prayers (p. 42);

p. [44], "Table des matières";

This is the only illustrated book ever successfully woven on a machine loom, and it was produced in this single edition. The *Livre de Prières* anticipated the advent of computer programming and automation. Using the punch-card system of the Jacquard looms, which prefigured the computer in uncanny details, programmed perforations in the cards controlled the weaving movement of the hooks manipulating the threads. The sequence of punched cards was fastened together in a chain, and the chain passed over needles, which were fastened to the warp threads. If there was no punched hole, the warp thread remained compressed. If there was a punched hole, the warp thread would engage. It is not known how many punch cards it took to produce this book, but estimates are between 200,000 and 500,000 cards programmed in order to weave 400 wool threads per 2.5 cm. (approximately one square inch), demanding machine movements of not more than a tenth of a millimeter. Fine quality gray and black silk threads were used.

It took two years and close to fifty trials before a copy was successfully completed. Once woven, the fragile sheets of silk were carefully folded in half (the recto of one page on the left and the verso of the preceding page on the right) and glued over a piece of cardboard that served to give the necessary stiffening to the delicate fabric. Bindings were custom made at the time of purchase, a practice also followed in some early printed books, such as incunables. The present copy, for example, was bound only fifteen years after printing. Some examples were also luxuriously boxed.

The production won prizes in its day. It was displayed in 1889 in the Lyon Pavillion at the Universal Exposition, featured by the firm J. A. Henry, whose textiles were highly reputed. The firm won a "grand prix" at the 1889 Exposition. The art historian and authority on medieval illumination, Henri Martin praised the imprint (see Randall, 1981, p. 662, n. 34), and the curator of the Bibliothèque Mazarine, Paul Marais, wrote an article on the production, in which he wondered whether in the twentieth century woven books could be bought in department stores, but concluded that the book would remain but a "curiosity." And, well it has.

The punched cards served as the primary inspiration for the famous "Analytical Engine" conceived by Charles Babbage (1791-1871) often considered to be the "father of the computer"); see on the punched-card system of the Jacquard looms and its relationship to early computers, Bowden, 1951, pp. 23, 350-51, and 379-80. The "Analytical Engine" possessed striking parallels with the modern computer. Computer science enthusiasts and bibliophile collectors have seized on the book's special relationship to the computer. There is, according to Randall, a Jacquard loom and woven pictures produced by this method on view at the Smithsonian Museum in Washington, D.C. (Randall, 1981, p. 667, n. 28).

ILLUSTRATION

Every page is surrounded by border decoration of considerable variety; listed below are the major illustrations:

p. ix, Nativity;

p. 12, Crucifixion;

p. 16, Virgin and Child surrounded by Music-Playing Angels;

p. 33, Christ with the Virgin and St. John the Baptist (half-page).

The designer's use of facsimile illustrations of manuscript illumination has been treated by L. Randall (1981). She notes that Hervier (whose identity she was unable to discover) used a composite manuscript facsimile entitled the *Imitation de Jésus-Christ* published by Gruel and Engelmann in the late 1870s or early 1880s. The donor portraits that occur in the Lyon imprint on pp. 1 and 4 occur also in the *Imitation*, plates XXXI-XXXII, and these plates in turn copy a manuscript from Ghent, datable to c. 1425 made for Elizabeth van Munte and Daniel Rym now on the Walters Art Museum (W. 166). Two of the large illustrations, the Nativity and Christ with the Virgin and John the Baptist, were inspired by Italian Renaissance paintings—respectively the Linaiouoli Triptych attributed then to Fra Angelico (the Nativity) and Raphael's *Disputa* in the Stanza della Segnatura (cf. Randall, 1981, pp. 655-58). The Crucifixion derives from a painting by Fra Bartholomeo. The celebrated Jean Bourdichon, made popular by the facsimile of the *Grandes Heures* of Anne of Brittany published by Engelmann and Graf between 1846 and 1849, influenced much of the border decoration. The title page is indebted to the *Grandes Heures du duc de Berry* (BnF, MS lat. 919, f. 86), surely also available in facsimile during the period.

With regard to its illustrative content, the *Livre de Prières* exemplifies nineteenth-century attitudes toward manuscript illumination. Through editions such as Gruel's *Imitation de Jésus-Christ*,

devotional publishing sought to teach catechism to children and to promote "good taste" through manuscript illumination. The *Imitation de Jésus-Christ* appeared in fascicules on the tenth, twentieth, and thirtieth day of each month, not unlike the serial publication of novels. With Gruel, Geoffroy Engleman, later joined by Auguste Graf, held a near-exclusive on the production of the gift book, that is, books for the Mass, "livres de raison," and marriage books, churned out in large editions, but also sometimes written and illuminated entirely by hand by neo-Gothic artists. These facsimiles and the related neo-Gothic manuscripts went a long way toward forming a basis for the re-appreciation of medieval manuscript illumination on the eve of modern times. The *Livre de Prières* figures in that history of recovery. In some ways, it is an elegant, though unorthodox, version of the nineteenth-century gift book, entirely in keeping with the taste of the times (Hindman et al, 2001, esp. pp. 132-143). Comparing the Lyon imprint to gift books, Harthan declared it to be the "final exaltation of the medieval Book of Hours" (Harthan, 1977, p. 174).

It is difficult to determine how many copies of the *Livre de Prières* were printed and how many are extant, since there is no census of the edition. This is in part because the *Livre de Prières* falls between the cracks of traditional cataloguing, because the book is technically neither a printed book nor a manuscript. In addition to a copy in the Walters Art Museum, Baltimore (Randall, 1981), there are copies in the following North American institutions: Chicago, the Newberry Library; Chicago, the University of Chicago Special Collections; Denison Library, Scripps College; the Cincinnati Historical Society; the University of Delaware; the College of Saint Catherine, Saint Paul, Minnesota; the Pierpont Morgan Library, New York (see Randall, 1981, n. 30, and Laird, in Burlingham, 2001, no. 63, p. 131, for lists of copies in North America and abroad).

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