Resumo
Este artigo discute as cores e pigmentos utilizados numa das cópias d’O bestiário do amor de Richard de Fournival, datado do 3.º quartel do séc. XIII. A aplicação de uma certa paleta cromática bem como de certas especificidades iconográficas faz-nos pensar que este artista conhecia as técnicas utilizadas na produção bem mais sofisticada da Cappella Regis sob o patronato de S. Luís: o Saltério de S. Luís que se encontra na BNF, em Paris, e o ms designado por Saltério de Isabella no Museu Fitzwilliam, em Cambridge.

Palavras-chave: cor, pigmento, iluminura, Richard de Fournival, bestiário

Abstract
This paper considers the colours and pigments of a manuscript of the Bestiary of Love of Richard de Fournival from the third quarter of the 13th century. The particularities of the use of the chromatic palette in this manuscript, together with several iconographical devices, allow one to reflect on the knowledge, by the artist who decorated this manuscript, of the methods of work used in the most sophisticated products of the Cappella Regis under Saint Louis: the Saint Louis Psalter in the BNF of Paris and the so called Isabella Psalter in the Fitzwilliam Museum in Cambridge.

Key-words: colour, pigment, illumination, Richard de Fournival, bestiary
REMARKS ON COLOURS AND PIGMENTS IN THE FRENCH COURT ILLUMINATION OF THE 13TH CENTURY

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The aim of this paper is to present the study of colours, pigments and of the pictorial technique in an illuminated manuscript of the *Bestiaire d’Amours* of Richard de Fournival, the so called manuscript T of this work (Switzerland, private collection)¹. Rather modest in size (23 folios, of the dimension 17 x 12 cm), it is, nonetheless, one of the most important manuscripts of this famous work. It is not only one of the most ancient known manuscript of the *Bestiary* of Richard de Fournival (it can be dated from the 1260s-1270s, whereas the other 23 known manuscripts of this work date from between the 1270s and the 15th century). Written in «francien», the Île-de-France version of the Old French, it is, also one of the most ancient illuminated vernacular manuscripts known to us.

Another important point is its relationship to the French court: the miniature of the Vulture, allegory of the persecution of a beloved by her lover in the ironical interpretation of this fine writer of the 13th century, presents the images of Saint Louis followed by his son-in-law Thibaud V, count of Champagne and king of Navarra (1235-1270), easily recognizable by their arms. It is probable that the manuscript (or its model) was commissioned by or for Thibaud of Navarra, and it cannot be excluded that the manuscript, the last miniature of which represents the *God of Love*, served as a wedding present.

The miniatures of this manuscript give an exciting possibility for the close investigation of colours, pigments, of their deterioration and transformation, their reaction with the parchment and their modification visible on the reverse side of the leaves. This study shows us the proceedings employed by an artist who knew the methods

of work and the repertory of forms used by an important group of artists which executed the French Royal Psalters of the 1260s, the Saint Louis Psalter, ms. 10525 of the BNF of Paris and the so-called Isabella Psalter, ms. 300 of the Fitzwilliam Museum in Cambridge.

It is difficult to say if he belonged himself to this group of artists; but in any case he was acquainted with their work. At the same time he was confronted with an unusual task: to ornament a profane, vernacular manuscript for the decoration of which he was not always provided with the iconographical devices of several scenes. Beside that, the study of the technique of the execution of the manuscript gives rather an impression that the order was particularly urgent and that the work was executed in a hurry.

Sixty-four small miniatures of the manuscript (the height of the majority of them takes between three or five lines of the text) are placed on a blue or a pink watercolour background but the tonality of these colours (especially a very deep, brilliant, transparent blue) as well as the technique of the transparent watercolour itself used for the background are closer to the chromatic devices and to the technique used by English illuminators or by those who had an English training or were strongly influenced by it. It is not an exception in the North French and Parisian miniature of the 13th century.

But the use of the watercolour for the backgrounds can be hardly found in the majority of the French miniature production of this period. However, it is characteristic for full-page miniatures of the two Royal Psalters where the coloured parts of the background surround the central parts painted in gold.

In the Bestiary manuscript, the slightly orange pink colour is also used in watercolour technique and covers the surface of the background in a rather irregular manner. This orange pink is very close to the same colour in the Saint Louis Psalter. In rare cases, however, the painter used a small amount of a binder or of a white in order to unify the tone. But his mixtures were too fragile and led to the deterioration of the some paintings. Perhaps, these mixtures were prepared too rapidly, the binders were used in a too precipitated manner or, what is also possible, the degree of the heating of the mixture was too high or too rapid.

In his work, the artist transgressed several norms adopted in the French manuscript production of the 13th century. The alternation of blue and pink backgrounds is not regular, as in the majority of the French manuscripts where this kind of alternation constituted a system of personal marks in cases of the decoration of manuscripts of a large size. The artist of the Ms. T demonstrated a surprising freedom regarding several norms which characterized the work of established workshops of illuminators and book-makers. His practices are those of the illuminators who were called to execute the decoration of small vernacular manuscripts, where many rules used in the ateliers specialized in the production of important Latin manuscripts were simply neglected and disregarded.

It is also difficult to judge whether the designer and the painter who just coloured the silhouettes were the same person. It seems, in fact that the quality of the design,
vivid, light and rapid, in some cases is superior to that of the colouring but several deterioration of the pictorial layer and of pigments prevent us from making a definite judgment about the execution of the miniatures by one or by two artists.

The colours and the pigments of the ms. T were studied essentially de visu, with a magnifying glass and a microscope. A physical-chemical analysis was attempted in a local laboratory but was not carried through to its end for several reasons having nothing to do with scientific research. No radiographical or microspectrochemical analysis was ever produced. Some physical-chemical results confirmed hypotheses made during my study of pigments with a microscope.

In several cases the artist did not follow the rules of the utilisation of pigments set in the known manuals of medieval illuminators, which is by itself not an important exception in the work of the medieval illuminators who worked in the milieu dominated by an oral tradition and where the individual experience of each artist who transmitted it to his workshop, to his pupils and to his professional surrounding played the primary role.

I don’t think that the deteriorations of pigments in several miniatures are due to a bad knowledge of the technique; the manuscript was undoubtedly decorated by a fine professional artist, but I am inclined rather to think that he had too short a time for the execution of his order and that is why he could not respect the time needed for the «rest» (or suspension) necessary for the preparation of pigments and their mixtures. He may also have found himself in a particular situation, outside of a workshop, travelling, for instance, which obliged him to use the «moyens de bord».

**Yellow**: the frames, very simple, of miniatures are painted in a very pale yellow which imitates probably, the golden frames. The presence of the infinitesimally small particles of gold (which can be observed through the microscope and in several cases can be observed even with a magnifying glass) in this yellow pigment shows the use of the orpiment, the *auripigmentum album* obtained from sulphur of arsenic and used with parchment glue as a binder.

**Blue**: the chromatic palette is distinguished by the use of various tones of blue. First of all, it is the deep blue sapphire colour of the backgrounds, in several cases strongly dissolved and clear; in some other cases it becomes blackened because of the oxidation of the ornamental motives painted on the surface of the backgrounds.

In many cases the dissolved blue pigment has transgressed the lines of the silhouettes of animals and of personages, even if the artist seems to do everything to avoid this extension of the blue. This blue pigment, cold and intense, has corroded the parchment and produced visible traces on the reverse of the sheets (where it gave clear green traces); thus, it included corrosive substances which have profoundly penetrated the texture of the parchment. This type of deterioration of the parchment shows the use of a rather active corrosive substance, the azurite, a mineral pigment based on the acetate or a carbonate of copper.

The blue of garments and vestments is also intense, profound and a brilliant colour but it has not the transparency of the blue of the backgrounds. It is not the same pigment used in more concentrated proportions and in a more dense manner. This...
blue pigment has none of the corrosive proprieties of the blue of the backgrounds and did not attack the parchment. This blue was obtained from indigo. Thus, the palette of our artist has several blue pigments, rather close in their chromatic effect, but of different origin.

In several cases one can observe the clearer, and more opaque blue due to the mixture with the white lead in various proportions. In several cases of the utilisation of this mixture one can observe small losses of the pictorial layer.

There is also the blue-grey, very clear, and, finally, a very rare blue grey, transparent, very clear and cold. This colour has a slightly corrosive action: from the other side of the sheet it gives an effect of a dark yellow or a slightly orange colouring on the vestment of the Allegory of the Memory (Figure 2). This corrosive effect shows equally the use of a pigment containing the copper oxide, prepared probably on a base of the fusion of various substances and based on copper sulphate.

One should note that this pale blue colour, transparent and cold, very rare and particular, has analogies with the pale blue which can be found in the Saint Louis Psalter (Figure 3) but in this manuscript a different or better cleaned pigment was used and it had no corrosive action on the parchment. A similar tone of the pale and transparent blue is used also in the Cambridge Isabella Psalter (Figure 4).

A unique case where the blue colour which has a blue celestial tone, is that of the lapis-lazuli with which were painted the vestment and the banner of the King Louis IX in the miniature of the Vultur: in is interesting to note that in the same miniature the painter used an extremely mordant pigment to paint in blue the back legs of the horse of Thibaud, King of Navarra.

Small touches of blue grey (in the neighbourhood with the touches of clear brown colour) were used for modelling the silhouettes of animals painted in beige or in clear yellow. This perfect knowledge of the use of the complementary colours and the taste for the modelling and the plastic quality in the treatment of forms can unfortunately be appreciated very rarely: this extremely delicate finish and its nuances were effaced because of the extensive use of the manuscript and the fragility of the technique and can be only guessed at in certain miniatures.

The variety of the blue tones shows a rather refined taste but only more profound scientific analysis could help to conclude which were exactly the resources of the painter in the matter of pigments. In any case, the use of these resources was extremely masterly: already in the unique initial of the manuscript representing the Allegory of the Memory (Figure 2) one can find four tones of blue and five tones of pink-beige colours, some of them were produced thanks to the mixture with white lead and with other pigments.

**Green:** as to the green, the dominant tone is that of a vivid and almost emerald brilliant green, very widespread in the medieval miniature and produced from the basic copper acetate, called in the Middle Ages *iarim* or *iarin* and a common name of which was a *verdigris*. It is used for the painting of silhouettes of animals, for vestments, trees and grass. As is well-known, it is one of the most aggressive pigments of the medieval painting which corrodes and penetrates the parchment and
becomes visible on the reverse of the sheet. Several silhouettes painted in green preserve the rest of the modelling executed with the same colour, a little darker or a little clearer. Thus, it was a rather refined and skillful painting where the painter knew how to use the possibilities of each pigment which he worked with a great refinement and savoir-faire.

However, one should note that normally this brilliant tone of green is not characteristic of Parisian painting of the 13th century, where the artists, who always used verdigris, preferred the tones of bottle green and of grass green and in general used the green pigment rather rarely, knowing its destructive properties (Figure 5). In fact, the use of green constitutes one of the sensitive points of the Paris illumination. On the contrary, in the English miniature, the green lavis (in fact the pigment is generally dissolved with water) is one of the preferred means of chromatic expression. Its extensive utilisation in our manuscript is another testimony of the training of the artist not in Paris but in the North of France, in any case, under the strong influence of practices adopted in English illumination. A similar bright and brilliant green is characteristic for the painting in both Royal Psalters.

Pink, beige, orange, brown: the manuscript T has a very particular pink orange colour used for the backgrounds where it is put by means of a transparent brushwork painting and in a very irregular and unequal manner which creates the darker and clearer parts of the painted surface. It is not at all common for Parisian and North French illumination where the pink colour, called often the «rose de Paris» and obtained from a mixture with lead, covers the surface in a dense, opaque, equal and regular manner. Here it is a saffron colour, intense and brilliant. This orange pink, as well as the watercolour technique of its utilisation which gives an impression of the irregularity of the pink orange tone can be found only in the Saint Louis Psalter executed by the artists attached to the Cappella Regis, especially in the architectural parts of miniatures.

Several other orange and beige colours, their tones and nuances were used for the silhouettes of animals, attributes and vestments. One of these beige-pink pigments has corrosive action on the parchment and is visible from the other side of the leaf (Figure 5), testimony of the use of pigments rich in iron oxide and other metals. This effect could be also produced through the use of the extract of fish gall.

A clear pink colour of this manuscript is extremely fragile and inclined to deterioration: its surface is often covered with small spots. This deterioration is due to the fermentation of the clarea – egg white – probably heated too rapidly. In fact, the painter illuminating a vernacular manuscript, even if he knew the old traditions and rules, was no longer strictly attached to them; the work on the order obliged him to neglect several old rules and led sometimes to a too rapid and hurried preparation of colours.

White is used to paint the silhouettes and vestments: it is an extremely white, limpid, brilliant and transparent colour obtained by the use of chalk. The drawing is perfectly visible through its surface. The traditional lead white is, of course, also used rather widely.
Black ink was employed for the drawing of the contours and parts of silhouettes. Grey is dissolved black ink. Very light grey, mixed with white lead was used for the modelling of faces and silhouettes. Faces are painted with touches of light grey and pink. Several silhouettes are of a dark grey colour. In several miniatures one can observe the degradation of the grey colour because of the use of an unadapted binder (or too hurried heating of the clarea which «turned» during the heating).

Red is used only for the rubrics: it is a vivid and brilliant red obtained from natural cinnabar, red sulphate of mercury.

Gold, silver and other metallic pigments are absent at a first glance. The gold particles, which can be observed in the yellow of frames and in some attributes, is due to the effect of the orpiment.

It is probable however that the gold or its substitute was used for the decoration of ornamental scrolls on backgrounds of several miniatures. A small portion of such a scroll is visible in the lower part of the miniature of the Wild Ass. The disappearance and the oxidation of the scrolls (Figure 6) painted with metallic pigments or their substitutes shows that the essential rules of the work with these pigments were not followed by the artist.

At the same time, these scrolls are so blackened and oxidized that their traces appear on the reverse of the folios. It is not an effect which could be produced in the case of the use of white lead for the painting of the scrolls. Besides that, white lead doesn’t show through the parchment.

The black traces left by the pigment used for the painting of the decorative scrolls reveal the use of a substitutive pigment for the gold, may be of silver which often attacks the parchment, shows through it and leave the black traces on the reverse of the folios. The almost total disappearance of this part of the decoration of our manuscript changed considerably the initial aspect of the manuscript. There is no doubt that in the beginning it produced an impression of a much more sumptuous object.

It is difficult to make a definitive conclusion as to the pigments used in the ms. T without a new verification of chemical results and microspectoscopic analysis. However, observations concerning the colours and the chromatic palette permit one to make several observations and to propose a number of hypotheses.

The choice itself of the chromatic palette, based on the tones of blue, green, grey, pale yellow, beige and pink orange is very particular. It is a choice which is not due to the limited means which were at the disposal of the artist. This choice is due to his training and to his personal inclination. Even if numerous elements of the decoration have disappeared or were modified with time, the analysis of pigments and the choice of the chromatic palette show a refined artistic taste.

At the same time, it is not a palette characteristic of the Parisian workshops of the middle of the 13th century and of its third quarter. These workshops attached a great importance to a perfect balance of blue and pink colours retouched with a parcimonious and skillful use of red and green.

In the production of the illuminated manuscripts in vulgar languages during the third quarter of the 13th century, this kind of approach characterizes especially the deco-

**Fig. 6** The panther, Bestiaire d’Amours of Richard de Fournival, Switzerland, private collection, Ms. T, fl. 10v.
ration of books executed by artists working North of the capital, and independent in their chromatic tastes from Parisian norms. Thus, on one hand, the use of pigments and colours in this manuscript shows a rather free approach to the colour; on the other hand it demonstrates the knowledge of English illumination and of its chromatic devices. The chromatic palette of the ms. T, in its present state, in any case, reminds one of the favourite palette of English artists of the second and third quarters of the 13th century.

At the same time, in relation with the majority of illuminated manuscripts of this period coming from workshops of the North and East from Paris, with their variegated colours, thick linear drawing and absence of modelling, the ms. T impresses one by the grace and vivacity of its linear drawing, freshness of the narration, refinement of modelling in painting and its remarkable choice of the chromatic palette. The disregard of traditional rules, indicated in the medieval manuals of painting, in the use of mixtures of pigments, is a feature which seems rather becoming to the work of artists who were not bound by the secular traditions of the professional production of Latin manuscripts. These artists began to specialize independently in the decoration of manuscripts written in vulgar languages.

It is particularly interesting to note that in this case the artist based his work partly on the experience of artists who did not belonged to big Parisian workshops but who constituted a group of artists attached to the Capella Regis and working together on the decoration of Royal Psalters obviously intended for the French court.

**Biography**

Xenia Muratova is a Professor Emeritus of French Universities. She studied History of Art in Russia, in France and in Germany. Her work is dedicated to various problems of medieval art, especially to the study of the 12th and 13th centuries, of methods of work of the medieval artist, of the medieval illumination and of medieval bestiaries. She is the author of several books and numerous articles and essays on these topics, the most important of these publications are monographs: Masters of the French Gothic, 1988; The Medieval Bestiary, 1984; Le Bestiaire medieval, 1988; Storia universale dell’arte. Arte del secolo XI, 2003; Storia universale dell’arte. Arte del secolo XII, 2005. Xenia Muratova works also as art critic and writes on Modern and Contemporary painting as well as on the History of the history of Art. She is member of numerous associations and scientific societies in Europe and in America.