

# Laboratorio Scientifico del MUSEO D'ARTE E SCIENZA

di Gottfried Matthaes



Milano, 23/02/2011

Nr. 2AN-7755

## **Results of scientific studies of the present portrait, oil on canvas (115 x 85 cm)**



**On the painting were made for compatibility comparison between the age of the materials and the corresponding epoch in which these materials have been used, scientific analysis by spectroscopic dating, microscopy, infrared reflectography, Wood's light, and FT-IR spectroscopy.**

**The customer keeps the painting for a work from the time of the painter Pierre-August Renoir.**

## Preamble:

The painting is in good condition, apart from individual color fadings as color loss between the brows of women and along the edges of the image. Slightly above the lower right corner of the picture at one point the paint has flaked off.

Upon closer examination of the back, one can find on the edges no traces of other nails in terms of existing: either in the canvas still Stretcher are seeing more holes. (Photo No. 2)

Along the edges and along the center of the image can be seen in some places the imprint of the underlying canvas frame that has resulted from a long succession of chairs and canvas stretcher.

This effect suggests that it is the original clamping frame of the image. So it is important to date him, because then one can infer the age of the image itself.



2

## Dating of the wood:

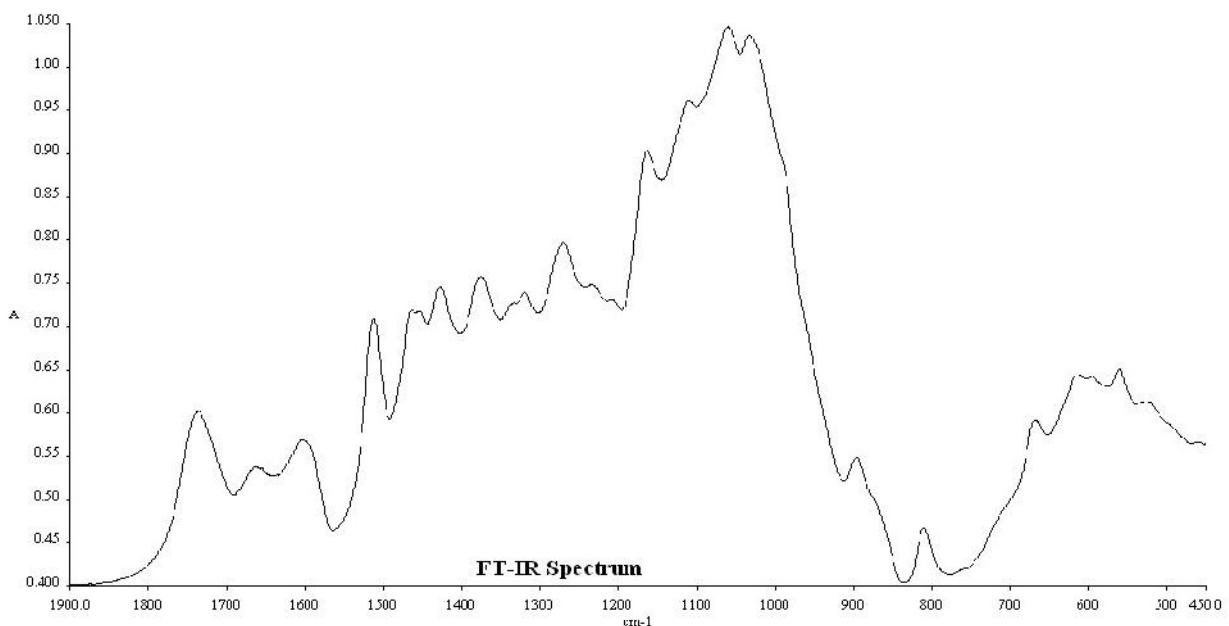
Thus one scientific dating of the wood by means of analysis of sampling was carried out from the top, bottom and left bar.

Spectroscopic dating shows the following results:

Species = conifer

Age of wood = 90 (+ / - 15 years)

(Spectrum as an attachment)

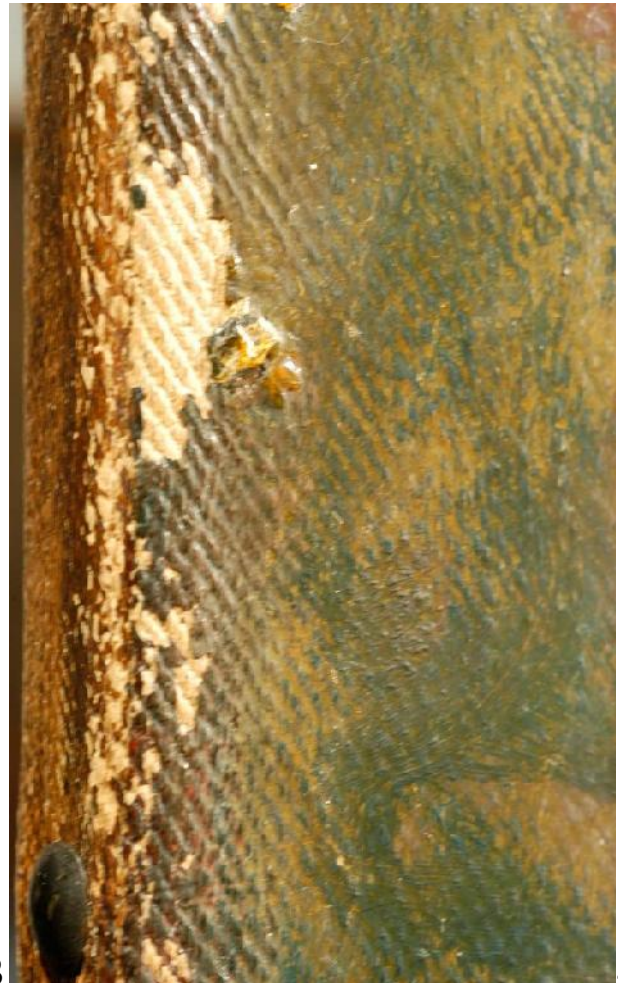


**The investigation of the paint layer (including a stereo microscope) led to the determination of the following characteristics:**

The paint layer is hardened due to drying of the ink binder and color. In recently pierced with a needle tends to paint layer more likely to crack than to deform. As I said, in some places the paint has flaked off, so that the background medium (photo No. 3), or even the canvas (Photo No.4) is revealed.



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In many areas of the image has a deep and coherent branched crackle formed: It is depending on the different colors to different depths (Photo No.5 and 6) and, in parallel to the formation of cracks running along the edges of the underlying canvas frame.

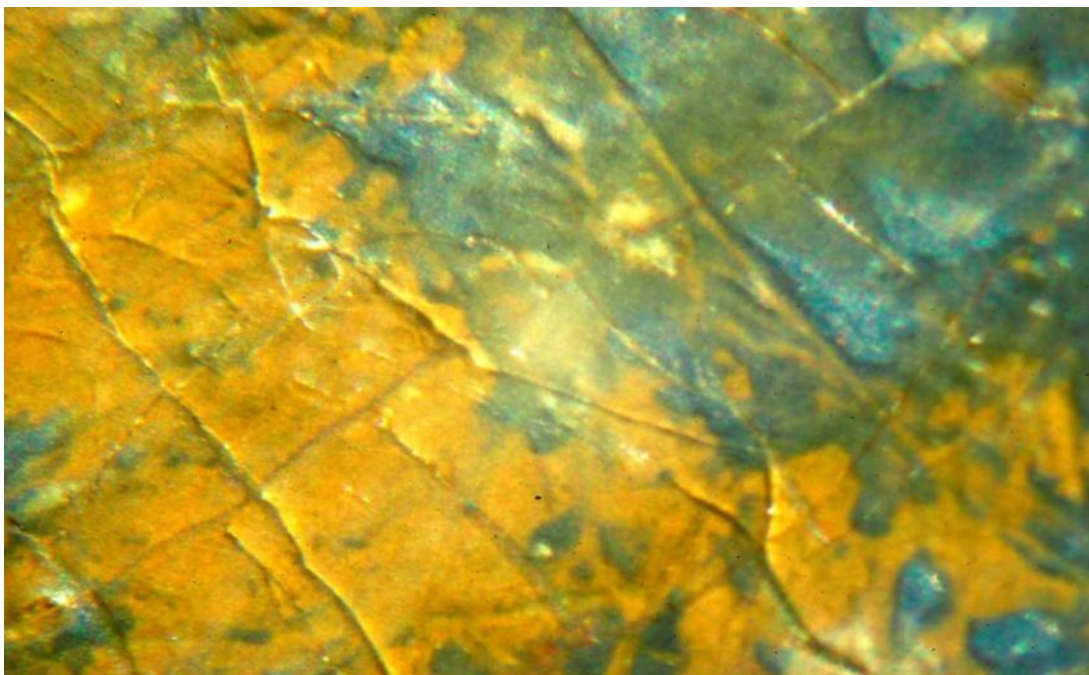


5



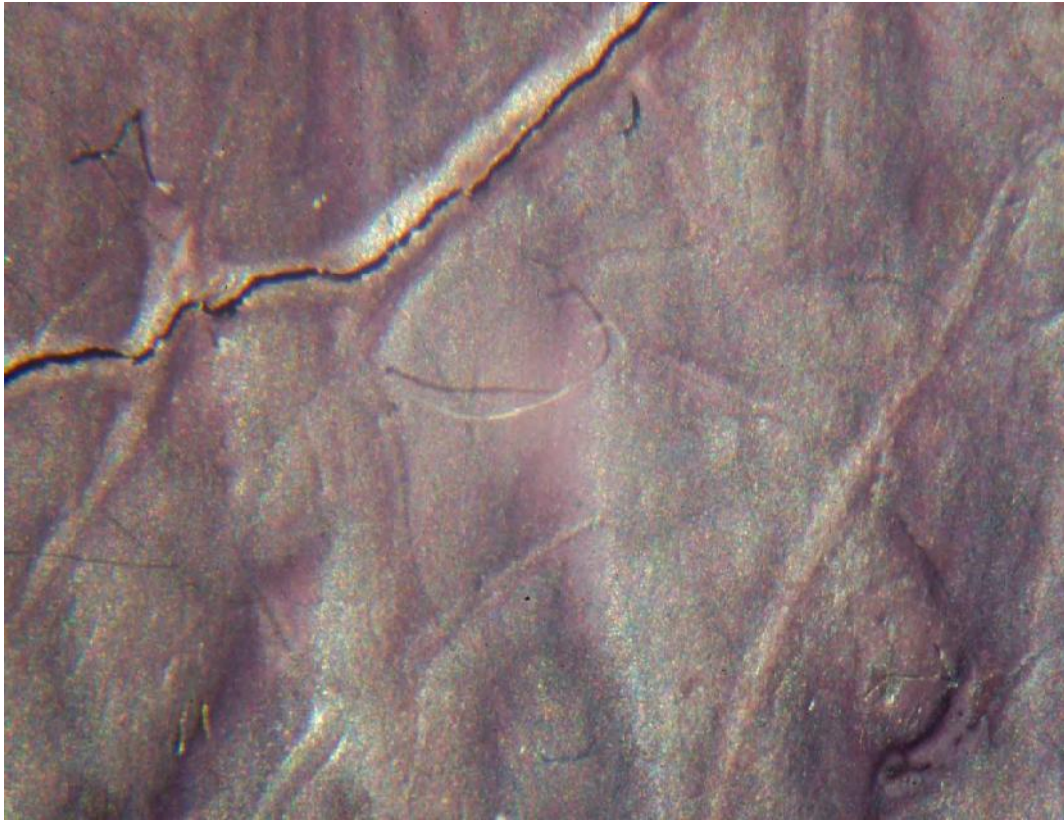
6

The varnish protective layer on the surface appears crystallized, oxidized and yellowed. (Photo No. 7)

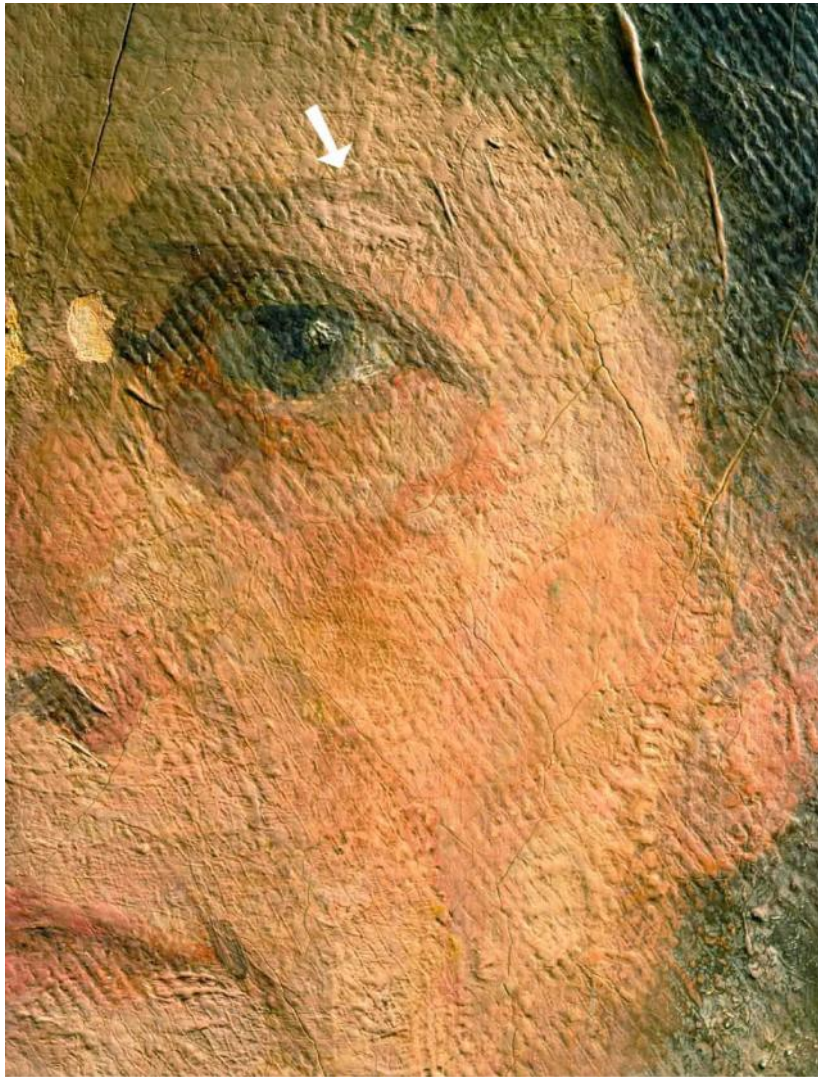


7

In other areas, a layer of color is seen, which was applied at a later date on the original painting. This crackle cracks were covered, which shine through in this layer (macro photo No. 8). These are particularly common in the purple dress and in many places the flesh tones available.



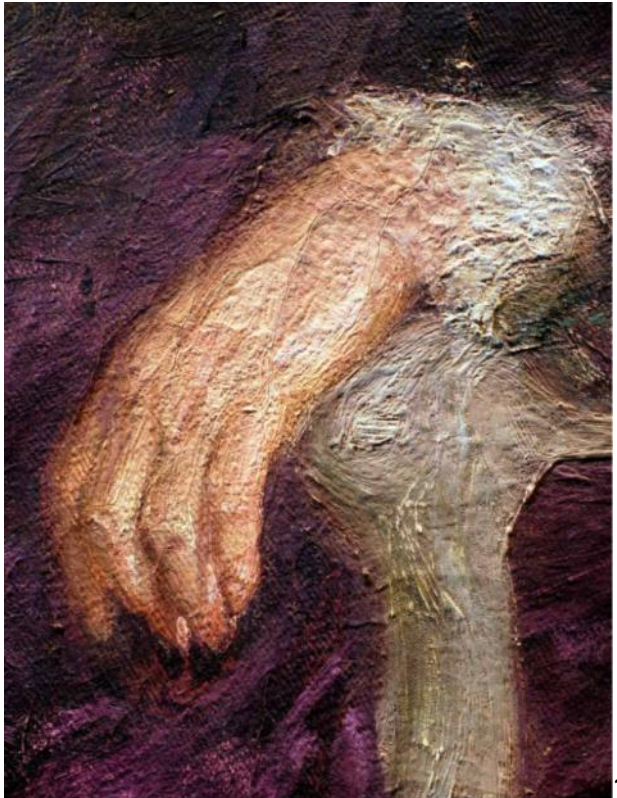
For closer examination and for a possible deepening of art history in terms of technique we add some detail shots, having the characteristic elements of the image: the left eye, in which the customer indicates a scar (Photo No.9, arrow), and the two hands (Photo No. 10 and 11).



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11

## Examination with Wood's light

Through a comprehensive analysis of the painting with Wood's light recent restorations have come to light that appear as dark spots. The different intensities of the dark portions could originate from restoration works were carried out at different times.

(See Photo No. 12, which was recorded with the help of special filters and digitally remastered)

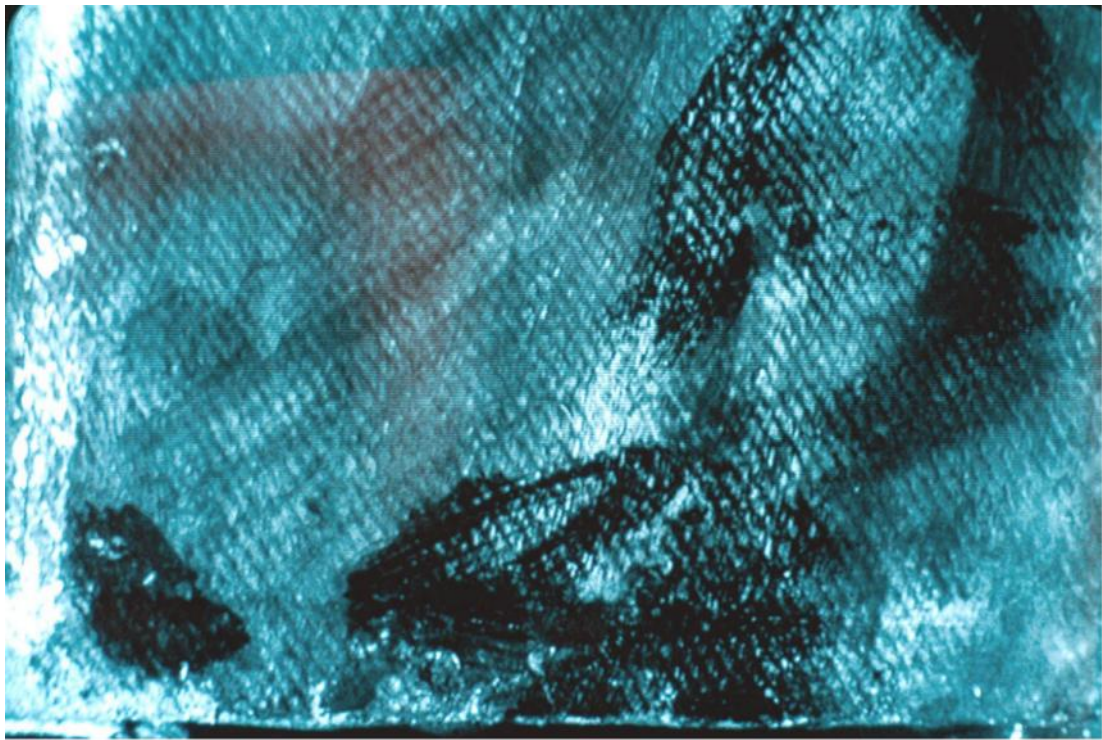


12

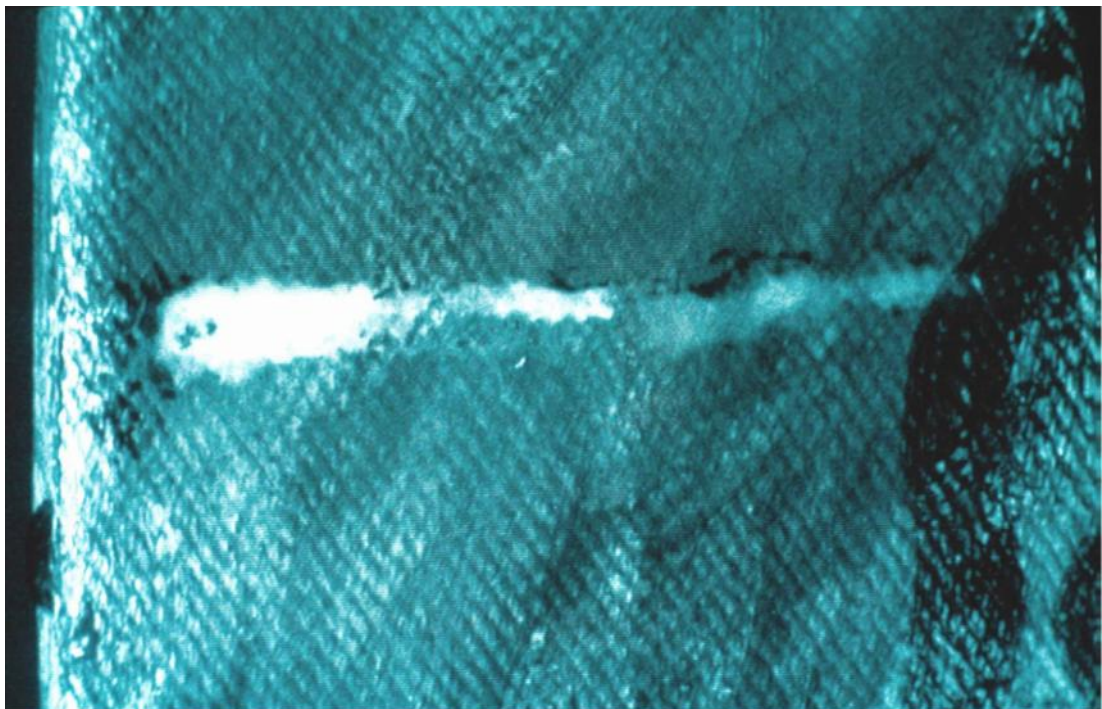


The **IR reflectography analysis** shows some characteristics of the deeper layers of the painting.

Photo No.13 shows the bottom right corner of the image, No.14 the same corner only slightly higher. On the latter photo come some strokes of letters to light that may have heard about a writing or signature, but was removed by scraping the paint.

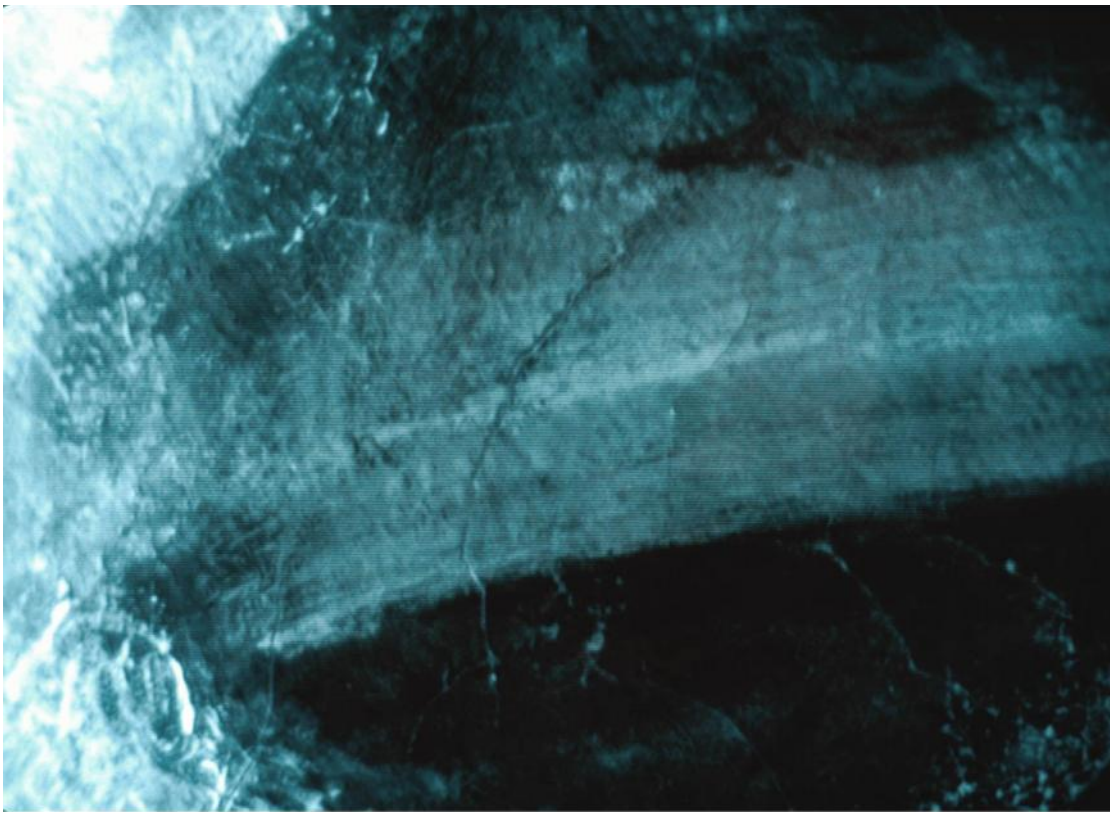


13

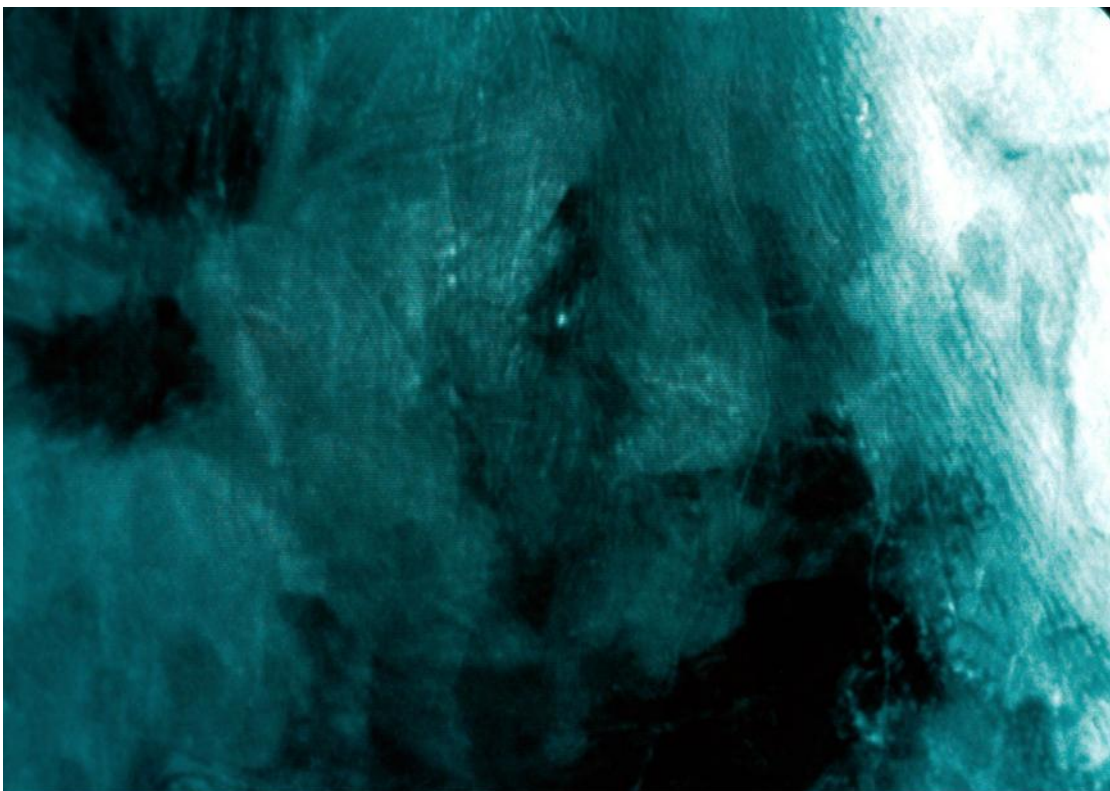


14

At the express request of the customer, we put in two close-ups of the right and left side of the neck.



15



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**For determining the pigment composition FT-IR spectroscopic analysis of the different colors have been carried out at several points.**

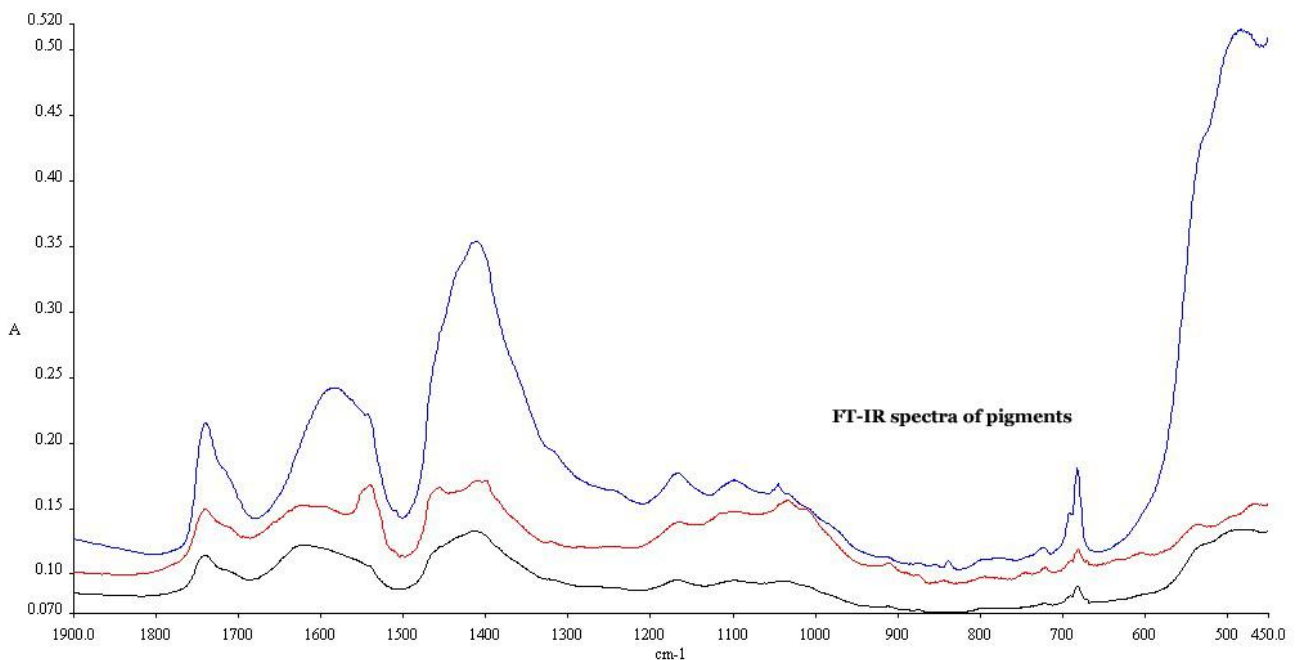
In particular, the white was examined by the two places where the dress of the surface samples taken from: the white of the lace on the sleeves and the collar, the green color of a point near the right-hand edge.

The investigation revealed that the White consists of white lead and zinc white.

(See spectrum)

No Titanium White was found that only in 1920 will use in painting.

Furthermore, you could a small amount of paint binder (peak at 1735 cm<sup>-1</sup>) notice confirming a dehydration of the oil.



**Final results:**

The above considerations and the results of scientific analyzes suggest a natural aging process of the painting:

Hardening of the color due to drying of the ink binder and an extended crackings.

Different color repaints were found, especially at the purple dress and in some places the flesh tones.

The pigment on locally performed FT-IR spectroscopy points to a drying out of the paint binder.

Listed considerations suggest that the age of the image corresponding to the wooden frame, which is obtained by the spectroscopic wood dating to 90 years (+ / - 15) is estimated.