10. *Boating on the Seine*

Artist Pierre-Auguste RENOIR (1841–1919)
Medium Oil
Support Canvas
Size 71 x 92 cm
Date About 1879–80

This artist had access to a wide range of new colours made by chemists in the 19th century.

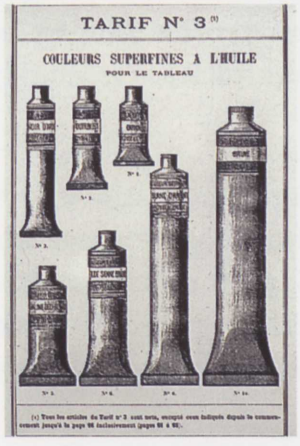
The scene is traditionally supposed to be on the Seine at Asnières, but is more probably at Chatou. The painting was acquired by the National Gallery in 1982. The **priming** is mostly **lead white**.

Pigments

The pigments used by Renoir in this painting were identified from paint samples by using optical microscopy, **laser microspectral analysis** and **X-ray diffraction**. Other than lead white, they are: **cobalt blue**; **viridian**; **chrome yellow**; **lemon yellow**; **chrome orange**; **vermilion** and a crimson coloured **lake** pigment. No black pigment was found, nor any **earth** colour. Interestingly, in his biography of Pierre-Auguste Renoir, the great film director Jean Renoir states that he never saw his father use chrome yellow. It does seem to be missing from Renoir's paintings after this date, replaced by **Naples yellow**. Jean also writes that his father was suspicious of 'newly-introduced materials'. This seems unlikely; of the pigments in the list above, only vermilion and the lake pigment would have been known to painters in previous centuries, although most would have been available before Renoir started painting.

Ready-made new colours in tubes

A pig's bladder used for storing paint

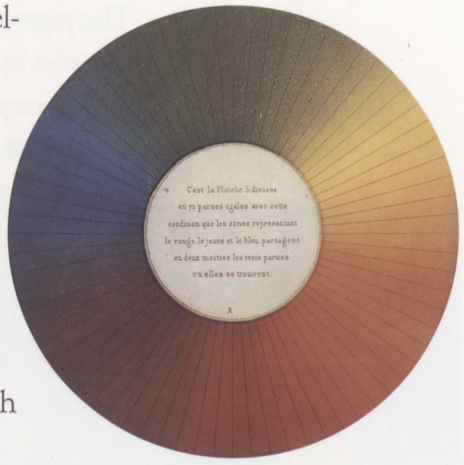


19th century paint tubes

Two new factors gave 19th century painters greater freedom than their predecessors had ever had, and encouraged the Impressionist revolution. One was the production of paint in squeezable metal tubes, with the pigment already mixed with the oil medium. Although, in the past, painters had taken ready-made paints out of doors in bladders or glass cylinders, these new paints came in tubes, could be squeezed directly on to the palette, and probably had a longer 'shelf life'. They were also actively marketed, and became attractive to amateur painters as well as professionals. The other factor resulted from the work of inorganic chemists, in experiments subsidised by the French government, who made a whole range of completely new, brilliantly coloured, stable pigments based on chromium, cadmium, cobalt, zinc, copper – and even arsenic!

Renoir exploited these new colours to the full, and in this painting he puts cobalt blue alongside chrome yellow and chrome orange to achieve something which probably no painter had ever managed before – the dazzle of sunshine reflecting off water.

Colour theories



According to the colour theory of Michel-Eugène Chevreul, as expressed in his 'colour wheel' (1839), orange and blue are complementary colours; so, when they are placed together, the intensity and hue of each is enhanced. We see Renoir using this idea here. He also uses another idea of Chevreul's: by putting pink, *ie* a tint of red (the passenger's dress), next to orange – which is near red on Chevreul's wheel – he emphasises the contrast between the two colours.

How the paint was applied

The **X-ray** image of the painting shows that there were minor alterations to the prow of the boat, the reeds in the foreground, the oar and the passenger – who may originally have been lying back in the boat. The **canvas** is scarcely 'wetted' by the paint; indeed, in places the weave of the almost bare canvas shows through the paint layer, with its darker colouring having some effect on the overall appearance of the picture. The **ground**, which is lead white in oil, is thin and uneven. After the ground, next to be painted were the high-tone blues and the reflections of the women. The painting is quite fluid, and was done 'wet in wet' – *ie* an upper layer put on before the lower layer is dry. The reflection of the villa is dragged over the dry underpaint of the river. Some of the final highlights are not carefully positioned, but simply *flicked* on to the painting. For the boat and those in it, the river and the reflections, paint is applied thickly, often with brushstrokes piled on top of each other.

The surface brilliance of the painting is achieved by using opaque, almost unmixed colours. Although the range of pigments used is limited (see above), there is very little intermixing of them in most of the picture. Much of the paint has been put on 'direct from the tube' (via palette and brush!). The effect depends on unblended bright colours close together rather than on physical mixing.

The river is pure cobalt blue, with added white for lighter tones. The translucent crimson lake pigment gives a purplish undercolour on the right of the picture, but mostly the underpaints are pale yellow-green. Brilliant chromate colours are used for the boat and its reflection. Chromium pigments are also found in the greens and yellow-greens of the foreground reeds and of the river bank – the reed bank is pure viridian with some chrome yellow and lead white. The distance has the same pigments, less pure and with cobalt blue or viridian in the shadows – no black pigment at all is used. The garden walls and the sail are thick lead white.