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Madder lake

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History of Madder lake :

Natural: Madder lake

Dyes derived from the extract of the madder plant's root (*rubia tinctorum*) were in use by the ancient Egyptians, Greeks and Romans for coloring textiles. Madder has been cultivated as a dyestuff since antiquity also in central Asia, where it was grown as early as 1500 B.C. Cloth dyed with madder root pigment was found in the tomb of the Pharaoh Tutankhamun and in the ruins of Pompeii and ancient Corinth. Madder was said to have been introduced into Italy by the Crusaders. By the 13th century, madder was being cultivated on a fairly large scale in Europe, but there is not evidence of its use in medieval or Renaissance painting. Madder lake was most widely used in the 18th and 19th century, though never as extensively as the ruby-like lakes made from kermes, cochineal, brazilwood, and lac. In the middle ages, Charlemagne encouraged madder cultivation. It grew well in the sandy soils of the Netherlands and became an important part of the local economy.

In the mid-eighteenth century, most natural madder (*Rubia tinctorum*) was grown in Holland. England was importing all of the madder used in their textile production from Holland at a cost of three hundred thousand pounds per year.

By 1804, the English dye-maker, George Field, had developed a technique to lake madder by treating it with alum. This turned the water-soluble madder extract into a solid, insoluble pigment. This resulting madder lake had a longer-lasting color, and could be used more versatilely, for example by blending it into a paint.

Artificial: alizarin

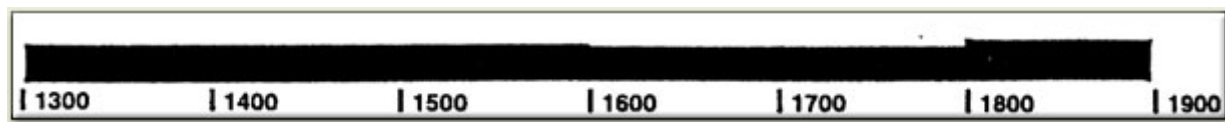
In 1826, the French chemists Colin and Robiquet first isolated the coloring principle from the madder plant and published their findings in *Annales de Chimie XXXIV*, "Recherches sur la matière colorante de la garance" in 1827. In the madder root, there are two coloring agents. One is the permanent alizarin and the other rapidly fading purpurin. It was the alizarin component that was made synthetically by the German chemists C. Graebe and C. Lieberman in 1868 and patented in England the same year. The synthesis caused the rapid decline and almost total disappearance of the madder-growing industry.

Although alizarin had superior permanence over the madder lake because of the absence of purpurin, both madder lakes were used in oil and watercolor painting. Some painters complained that the synthetic variety was less saturated and brilliant than madder. Both varieties were non-toxic, slow drying in oil and the deeper shades were more lightfast than the lighter ones. Both were compatible with all other pigments.

When was Madder lake used?

Discovery	Used until
Antiquity (Egyptian), artificial (1868)	continues in use

Use of Madder lake among paintings in the SchackGallery, Munich:



Source: Kühn

Other reds

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