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# BLUE, YELLOW AND GREEN ON THE BARBIZON PALETTE

This interdisciplinary contribution investigates the art of the Barbizon school including painters such as Corot, Courbet, and Daubigny. Due to the nature of the »peinture en plein-air« our study focuses on the wide variety of green hues. From this perspective, the palette of around 25 paintings dated between 1830 and 1870 has been investigated. Our results are supported by documentary material and statements of the Barbizon artists themselves, which describe the pre-impressionist practice to use new pigments on the market. The palettes of Corot, Courbet and Daubigny proven by our analyses reflect the artists' individual personalities and economic situation. Besides their response to the »green« innovations, the distribution system by influential »marchands des couleurs« is described. The conscious use of modern pigments underlines the importance of the Barbizon school for impressionism.

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## The secret of the Barbizon palette

»Comment il inventait ces verts chatoyants« – how did Théodore Rousseau (1812-1867) get his shimmering greens? Narcisse Diaz de la Peña (1807-1876) asked himself this question when he saw his friend returning to Barbizon with a couple of oil sketches from the forest of Fontainebleau.<sup>1</sup> Rousseau's biographer Alfred Sensier reported that Diaz endeavoured to reach the refinement and colour intensity of Rousseau's greens. He finally believed in a magic »Il croyait presque à du sortilège, car lui, si amoureux de la couleur, cherchait sans les trouver la finesse et la force de ton des études de Rousseau«.<sup>2</sup>

The brilliant greens in Rousseau's paintings remained a secret to Diaz and can not be imagined today because most of them darkened after a few years. Sensier saw the reason for this in Rousseau's technique.<sup>3</sup> The originally intended effect of Rousseau's landscapes (Plate 1) was described by Charles Blanc in 1876 as: »De ce vert gai, jeune et clair qui caresse la vue et réjouit la pensée«.<sup>4</sup> He continues that a particular landscape by Rousseau with its scandalous greens hurt the eyes of the Parisian public which was used to the dull colours of academic landscape painting: »Ce paysage fit scandale. On eût dit que la primeur des verdure printannières avait quelque chose de blessant pour les yeux des Parisiens. Nos paysagistes avaient tellement habitué le public aux arbres roux, aux gazons salis, que toute autre couleur dans le paysage paraissait inconvenante«.

For us today, this scandal can no longer be easily comprehended, because the situation has been turned around completely since everyone is conditioned to the brilliant impressionist palette. To understand, what the secret of the Barbizon palette could have been, we have to take into consideration more closely the circumstances under which these works of art were painted.

In the first decades of the 19<sup>th</sup> century, the landscape as a subject in its own right became increasingly relevant in French painting. The ideal landscapes of the romantic period which were produced in the artists' studios were superseded by a more naturalistic point of view. The natural environment became important: due to the recently built railway, tourists as well as artists could escape the industrialised Parisian capital to the country-side. Soon, these artists working »en plein-air« became a part of the touristic sites –which is even mentioned in guide books as a special attraction. This movement encompassed the small village of Barbizon located in the forest of Fontainebleau.<sup>5</sup> These artists working around Barbizon laid the foundations for the art of impressionism, and can therefore be seen as the beginning of modern art. Our exhibition »Corot, Courbet and the artists of Barbizon«<sup>6</sup> as well as the symposium on



Plate 1 Théodore Rousseau, *Groupe de chênes, Apremont*, 1850/52, canvas 63.5 x 99.5 cm, Musée du Louvre Paris, Inv. No. RF 1447.

»The Art of Nature and the Nature of Art«,<sup>7</sup> both held in Munich in 1996, expressed the growing interest in the Barbizon movement. During the preparation, it became obvious that there was very little published on the Barbizon painting technique. This includes the palette, which is centered around the colour green. To understand the secret of the Barbizon palette we have to know more about it.

The new »peinture en plein-air«<sup>8</sup> far from the half-dark of the artist's studio asked for new ways of transforming »les impressions virginales de la nature«<sup>9</sup> directly to canvas. At first glance, the palette of Barbizon seems to be rather small and boring: many greens, few blues, browns, greys and blacks. However, a closer look reveals that a fundamental revolution opened new possibilities concerning the artist's palette. This revolution introduced pure greens thereby substituting the greens of the 18<sup>th</sup> century which were mixed from blue and yellow. What are the blues, yellows and greens used in the period from the 1820ies to the 1870ies?

#### The pigments in the technical manuals of the 19<sup>th</sup> century

The main contemporary Parisian treatises by Pierre-Louis Bouvier of 1827<sup>10</sup> and Jean-François-Léonor Mérimée of 1830<sup>11</sup> demonstrate that for the blue colours Prussian blue (bleu de Prusse, Berliner Blau) is dominant. The far more expensive smalt (smalt,<sup>12</sup> Smalte), natural ultramarine (outramer, natürliches Ultramarin)<sup>13</sup> and its artificial substitute (1826/28 first synthesized by Guimet and Gmelin, outramer Guimet,<sup>14</sup> synthetisches Ultramarin), as well as cobalt blue (1802 invented by Thénard, bleu de cobalt, bleu de Thénard, Kobaltblau) and finally cerulean blue (Coelinblau) from the 70ies do not compete with the cheap Prussian blue. Concerning the yellow, ochres (ocre jaune, gelber Ocker) as well as Naples yellow (jaune de Naples, jaune d'antimoine, Neapelgelb) are important. These yellows were slowly substi-



tuted by new synthetic compounds, for instance chrome yellow (since the 20ies,<sup>15</sup> jaune de chrome,<sup>16</sup> chromate de plomb,<sup>17</sup> Chromgelb). This pigment had a tendency to turn green under light and was therefore often mixed with Prussian blue resulting in a new strong green (chrome green, vert de chrome, Chromgrün).<sup>18</sup> Another yellow is the intense cadmium yellow (sulfure de cadmium, jaune de cadmium, Cadmiumgelb), which is said to have been in use since the middle of the 40ies in France,<sup>19</sup> although mentioned earlier.<sup>20</sup> We suppose the even more intense strontium yellow (Strontiumgelb) was introduced in the late 50ies.<sup>21</sup>

Blue mixed with yellow yields green: the traditional method to mix those greens was described by many authors of technical treatises. For example, Etienne-Jean Delécluze wrote that green »se produit par l'amalgame du jaune avec le bleu«. <sup>22</sup> The same is stated by Arsenne in 1833, and, interestingly enough in his listing of the »couleurs employées le plus habituellement« no pure green is mentioned.<sup>23</sup> Even as late as 1867 the same applies to the artist Thomas Couture who only wrote about »cobalt« und »jaune de Naples«. <sup>24</sup> The method to blend greens from blue and yellow has continued throughout the 19<sup>th</sup> century:<sup>25</sup> The influential book on landscape painting written in 1878 by the landscape painter Georges Meunier – alias Karl Robert – still continues in this tradition, although powerful greens had been on the market for many years.<sup>26</sup>

Up to the 1820ies, the continuation of this tradition was partly due to the fact, that good pure greens were rare. For the few greens available, some authors reported technical

Plate 2 Gustave Courbet, *Paysage près de Maisières*, 1865, canvas 50 x 65 cm, Bayerische Staatsgemäldesammlungen München, Inv. No. 8649

problems, such as that the use of an oil medium with green earth or verdigris (vert-de-gris distillé,<sup>27</sup> Grünspan) had to be avoided.<sup>28</sup> The first indication for a change to pure green came with Scheeles green (since the end of the 18<sup>th</sup> century, vert de Schéele, Scheeles Grün), which unfortunately was a rather dirty and dull green.<sup>29</sup> Another expensive green, chromic oxide (1809, oxyde de chrome, Chromoxidgrün) again turned out to be too dull, too yellow and not intense enough.<sup>30</sup> Only with emerald green (1822, vert de Vienne, vert de Brunswick, vert de Schweinfurt,<sup>31</sup> vert Véronèse,<sup>32</sup> Schweinfurtergrün) a brilliant green was available.<sup>33</sup> Its fresh green, however, turned out to be poisonous as well although this didn't prevent its use. This is simply because there was no other green available. As a further milestone, in the early 1830ies<sup>34</sup> viridian (vert émeraude, Chromoxidhydratgrün) was invented by Pannetier in Paris. This powerful green was only available in large quantities from 1859 onwards thanks to the synthesis of Guignet. With »vert Véronèse« and »vert émeraude« the artist's palette changed from dull to intense greens! However, being too green to the contemporary observer as earlier mentioned, it became necessary to darken the greens in order to represent a landscape motif where dark greens or even greenish blacks occur. This is expressed by Saint-Victor in 1835: »Pour les verts sales ... l'on mêle du noir ou de la teinte neutre à ses couleurs pour les salir.«<sup>35</sup>

### Pigment trade and colour merchants

Where were these pigments traded and where did the Barbizon artists get their pigments from? The place where the most important pigments except »vert Véronèse«, cadmium and strontium yellow were invented was Paris. They were produced by small companies that were occasionally the »marchands des couleurs« who distributed the end product. One of the most successful merchants was Colcomb-Bourgeois.<sup>36</sup> Arsenne reported that one could find there »les beaux jaunes d'antimoine et le vert émeraude de M. Pannetier.«<sup>37</sup> This statement, which has been overlooked so far, dates the invention of »vert émeraude« in 1833 or before. As well as Jean-François Millet (1814-1875),<sup>38</sup> Camille Corot (1796-1875) was a customer of Colcomb-Bourgeois. During his stay in Rome in 1826, Corot wrote about the difficulty of getting good colours and mentioned Colcomb-Bourgeois, where one should ask for »jaune d'antimoine ... l'once coûte 2 francs.«<sup>39</sup> To send colours from Paris was not unusual. In 1850, Millet asked Sensier to provide different earth pigments and again Naples yellow.<sup>40</sup> In October of the same year, he wrote to his »fournisseur habituel« Vallé, another Paris merchant,<sup>41</sup> and ordered colours in tubes: »4 tubes de blanc de plomb – 4 tubes de jaune de Naples – 4 tubes cobalt ...«.<sup>42</sup> This is an early documentary reference of this new type of packing ready-prepared oil colours, which have been delivered traditionally in bladders (»vessies«).<sup>43</sup> Ten years earlier, Charles-François Daubigny (1817-1878) was still asking for »5 vessies de blanc, 3 de jaune de Naples, ...«.<sup>44</sup> The change from bladders to tubes was a revolution which helped the »peinture en plein-air« to become established: the colours could be used much longer and allowed the artists to be more independent from Paris and its colour merchants.

Another colour merchant was Ange Ottoz, who founded his shop in 1827.<sup>45</sup> Ottoz is mentioned by Bouvier in 1832<sup>46</sup> as well as by Arsenne in 1833.<sup>47</sup> Thirty years later Ottoz sons Jérôme and Alexis<sup>48</sup> opened their own shops.<sup>49</sup> Colour merchants often acted as art dealers. For instance Charles Jacque (1813-1894) bought his colours and sold his paintings in Alexis Ottoz' shop. It should be mentioned, that the Ottoz family later supplied paint material to the impressionists.<sup>50</sup>

A further colour merchant and art dealer is the Maison Deforge<sup>51</sup> where Narcisse Diaz de la Peña (1807-1876) bought his colours and early paintings of Millet were sold.<sup>52</sup> In the beginning of the 1860ies the young Renoir acquired colours at the Maison Deforge and Monet as well after 1868.<sup>53</sup> To summarise, the artists of the Barbizon school had immediate access to the pigment innovations that were on the Parisian market.



### Corot's, Courbet's and Daubigny's individual use of the new pigments

How did the artists of the Barbizon school use these innovations? To answer this, documentary sources and pigment analyses of about 25 paintings by Corot, Courbet, Daubigny, Millet, Diaz, Jules Dupré (1811-1889) and Victor Dupré (1816-1879), Constant Troyon (1810-1865), as well as by Charles Jacque were investigated. All the following conclusions refer to our observations of these paintings, which, however, are only a small part of the total oeuvre of the artists. Our analyses have been conducted by microscopy, optical emission spectroscopy, microchemistry, x-ray diffraction (vertical goniometer and Straumanis), scanning electron microscopy and x-ray microanalysis by Karin Junghans, Carola Komar and one of the authors (AB). Our detailed results and new documentary sources will be published elsewhere.<sup>54</sup> Here, only the results concerning Courbet, Corot and Daubigny are dealt with.

The investigation of paintings by Courbet (Plate 2) revealed a rather conservative palette.<sup>55</sup> None of the new greens or yellows were found. Instead, traditional mixtures of Prussian blue and chrome yellow, yellow ochre or Naples yellow are dominant. In the blue hues no cobalt blue could be identified. A statement by Alfred Schanne in around 1849 may explain Courbet's palette which we observe as being traditional. He reported that his paint box contained huge bladders filled with the most ordinary colours bought by the kilo – »... contenait d'énormes vessies remplies des couleurs les plus ordinaires qui se vendent au kilo«. <sup>56</sup> Living for many years in straitened economic conditions, Courbet should have said that he did not intend to ruin himself as other artists did with the use of expensive pigments.<sup>57</sup> Another reason for Courbet's selection of cheap pigments may have been his rather large formats as

Figure 1 Camille Corot, *Vue prise à Riva*, 1835, canvas, 98,6 x 141,5 cm, Bayerische Staatsgemäldesammlungen München, Inv. No. 14581.

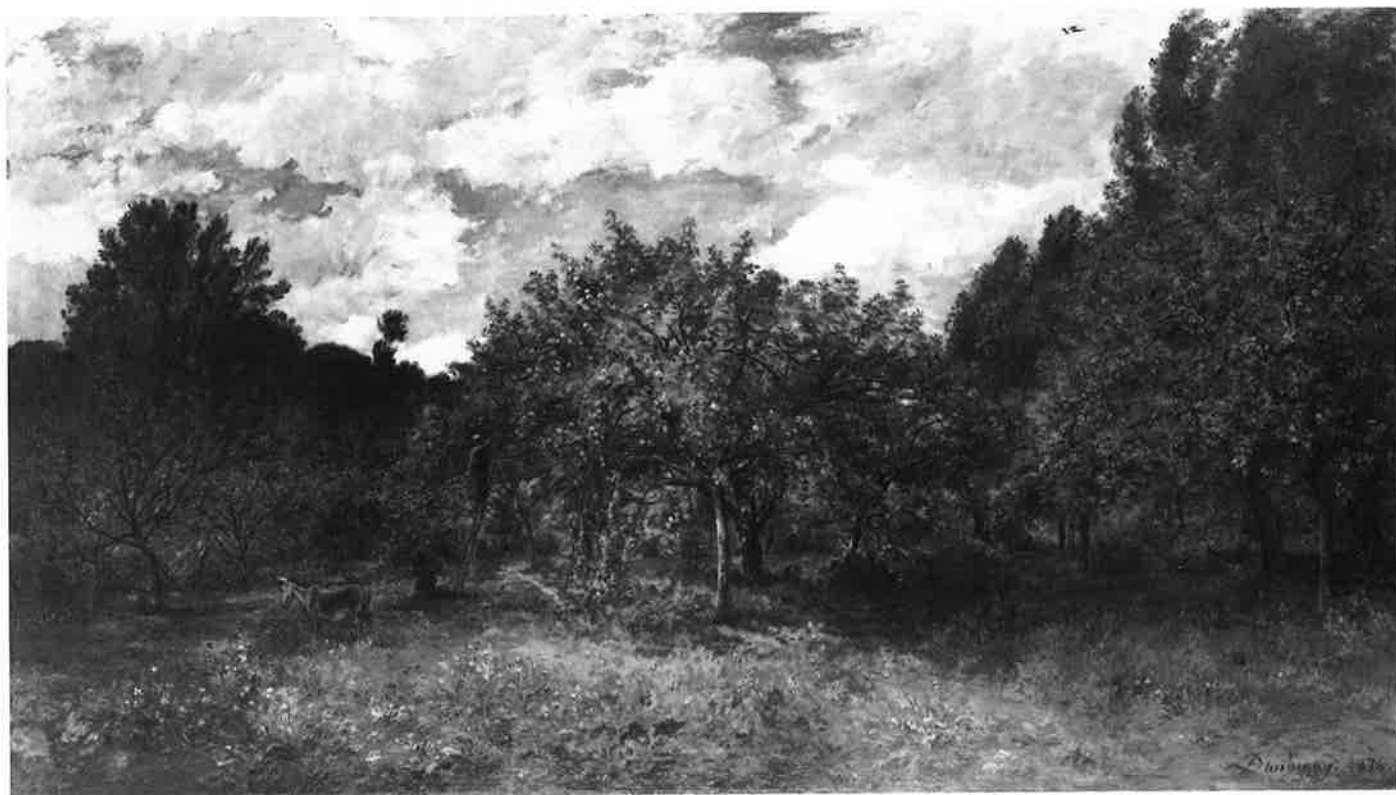


Figure 2 Charles-François Daubigny, *Le Verger*, 1876, canvas, 168 x 300 cm, Städelsches Kunstinstitut Frankfurt, Inv. No. 1444.

well as his later preference for the palette knife consuming large amounts of paint. And, his dull and dirty colouring strived for the negation of the academic ideal with the aim to provoke his contemporaries.<sup>58</sup>

The situation was quite different for Corot, who from 1821 onwards received an annual pension of 1.500 Livres.<sup>59</sup> His formats were mostly small and he always aimed at an ambitious colouring. These three factors may be responsible for Corot's very early use of »vert émeraude« on »*Vue prise à Riva*« (Figure 1) painted at the beginning of his career in 1835. This is the earliest occurrence of »vert émeraude« published to that date. However, the strength of the green of this brand-new pigment disappears in the dark green shadows of »*Riva*« (Plate 3) where Corot mixed »vert émeraude« with the rather expensive cobalt blue. This gives us an excellent example of the traditional way in which these new pigments were employed shortly after they had been introduced to the market. But »vert émeraude« was not the only innovation on Corot's palette. In a letter of 1849 to Constant Dutilleux he became enthusiastic about cadmium yellow which had been recently introduced.<sup>60</sup> His innovative approach was accompanied by the use of old-fashioned but nevertheless good pigments such as smalt. Although we only could include four paintings by Corot in our study,<sup>61</sup> the results and the documentary sources prove his openness towards the pigment innovations, which, however, was only made possible by his excellent economic situation.

This correlation between the individual use of newly introduced and colourful pigments and the economic situation of the artists is more than obvious in the case of Daubigny. His later »rich« palette opened new colouristic possibilities far more advanced than those reached by Corot and Courbet. Daubigny's economic situation, however, improved only slowly. In a letter dated 1839, no expensive pigment except »une demi-once d'outremer« is mentioned.<sup>62</sup> Our investigation of seven paintings<sup>63</sup> allows us to form a rough picture of the way in which Daubigny used the rapidly changing palette. From the mid 1850ies the use of the expensive cobalt blue could be identified in his paintings. Daubigny's palette rarely contained Prussian



blue: we never found any in the blue colours and only occasionally in the greens. In a painting of the late 1850ies we identified chromic oxide which, however, later had been substituted by »vert émeraude«. As observed by others as well,<sup>64</sup> both occurred in combination with »vert Véronèse«. Daubigny used cadmium and strontium yellows in his late paintings of the 1870ies (Figure 2 and Plate 4). The identification of the latter in »Le moisson« of 1872 is, at the same time, our earliest occurrence.

### The secret reconsidered

In general, our analyses showed the extensive use of 'vert Véronèse« by Diaz, Corot, Courbet, Daubigny, Troyon, Dupré, Jacque und Millet. However, as mentioned for Corot, these strong greens were in most cases used as »verts sales«; Sensier reported that Rousseau used them mixed with browns.<sup>65</sup> »Vert Véronèse« is mentioned in artists' letters and can be found in descriptions of the palettes of Corot,<sup>66</sup> Dupré<sup>67</sup> und Rousseau.<sup>68</sup> The disadvantages of »vert Véronèse« – too poisonous and too yellow – were only overcome by the introduction of »vert émeraude«. This powerful green turned out to be the key for a fundamental change of the palette of the Barbizon artists. In 1833, Arsenne had already foreseen its considerable importance for landscape painting: »Cette ... couleur ... donne des verts d'un très-puissant. Lorsqu'elle sera connue elle sera d'une grande utilité pour le paysagiste.«<sup>69</sup> He pointed out that the transparency of »vert émeraude« makes it suitable for glazes.<sup>70</sup> Especially with regards to this, the Barbizon artists used 'vert émeraude« from the 1850ies.

This leads us back to the secret of the Barbizon palette. According to Sensier, one day Diaz courageously asked Rousseau, what the secret of his palette was. Rousseau told him about the pigments he was using. At first, he mentioned »vert émeraude«! Sensier continued, that »vert émeraude« – literally translated – is the fuse that leads the flame to the gunpowder which transforms the ignorant and distracted man into an artist full of poetic visions.<sup>71</sup>

»Vert émeraude« and all other new pigments mentioned were masterly used by the Barbizon artists such as Daubigny and Troyon. This laid the foundations for impressionism. Claude Monet, when visiting the Paris salon of 1859, was fascinated by the colourful and luminous works of Troyon. He exclaimed »C'est superbe; c'est surtout très lumineux.«<sup>72</sup>

Plate 3 Detail of Camille Corot, *Vue prise à Riva*, 1835, canvas, 98,6 x 141,5 cm, Bayerische Staatsgemäldesammlungen München, Inv. No. 14581.

Plate 4 Detail of Charles-François Daubigny, *Le Verger*, 1876, canvas, 168 x 300 cm, Städelsches Kunstinstitut Frankfurt, Inv. No. 1444.

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## Anmerkungen

- 1 Alfred Sensier, *Souvenir sur Théodore Rousseau*, Paris 1872, 96.
- 2 Sensier 1872, 96.
- 3 »Une œuvre trop distillée trop surmentée, se venge et pousse au noir; c'est ce qui est arrivé à quelques splendides travaux de Rousseau« (Sensier 1872, 125).
- 4 Charles Blanc, *Les Artistes de mon temps*, Paris 1876, 440.
- 5 (a) Nicholas Green, *The Spectacle of Nature. Landscape and Bourgeois Culture in 19<sup>th</sup> Century France*, Manchester 1990 and (b) Simon Schama, *Landscape and Memory*, New York 1995, 546.
- 6 Christoph Heilmann, Michael Clarke und John Sillevis (Eds.), *Corot, Courbet und die Maler von Barbizon*, Catalogue Munich 1996.
- 7 In co-operation with the Zentralinstitut für Kunstgeschichte Munich (Dr. Michael F. Zimmermann).
- 8 John Leighton, *Bienheureux les paysagistes!: Landschaftsmalerei unter freiem Himmel*, in: Heilmann et al. 1996, 23-32.
- 9 Sensier 1872, 278.
- 10 Pierre-Louis Bouvier, *Manuel des jeunes artistes et amateurs en peinture* Paris 1827, Paris 1832 und Strasbourg 1844<sup>3</sup>. Our contribution refers the German verbatim translation by Prange, *Vollständige Anweisung zur Ölbmalerei für Künstler und Kunstfreunde*, Halle 1828 cited as Bouvier-Prange.
- 11 Jean-François-Léonor Mérimée, *De la peinture à l'huile*, Paris 1830.
- 12 Frédérique-Auguste-Antoine Goupil, *Traité méthodique et raisonné de la peinture à l'huile ... suivi de l'art de la restauration*, Paris without date, but may be 1858, 8.
- 13 Mérimée 1830, 178 f. or Bouvier-Prange 1828, 131 f.
- 14 Goupil 8.
- 15 David Bomford, Jo Kirby, John Leighton and Ashok Roy, *Art in the Making: Impressionism*, London 1990, 63.
- 16 Paillot de Montabert, *Traité complet de la Peinture*, Paris 1829, Vol. 9, 221.
- 17 »Le chromate de plomb est jaune, et celui de mercure est rouge, et celui d'argent pourpre« (Mérimée 1830, 104).
- 18 Bouvier-Prange 1828, 323.
- 19 Bomford et al. 1990, 63.
- 20 »... malheureusement le cadmium est jusqu'à présent très rare en France, mais on peut en découvrir, comme on a découvert du chromate de fer. Le sulfure de cadmium est, à ce qu'on assure, déjà employé en Allemagne, et l'on trouve ici chez les princeps fabricans de produits chimiques« (Mérimée 1830, 118 f.).
- 21 A first electrolytic preparation of strontium was conducted in 1855 by Bunsen.
- 22 Etienne-Jean Delécluze, *Précis d'un Traité de Peinture*, Paris 1828, 76.
- 23 Louis-Charles Arsenne, *Manuel du Peintre et du Sculpteur. Ouvrage dans lequel on traite de la Philosophie de l'Art et des moyens pratiques*, Paris 1833, Vol. 2, 223 f. and 244.
- 24 Thomas Couture, *Méthode et Entretiens d'Atelier*, Paris 1867, 34.
- 25 Goupil 39 proposed a mixture of »Bleu de prusse clair... mélangée avec le jaune de chrome« to paint leaves and greens.
- 26 Karl Robert, *Traité pratique de peinture à l'huile. Paysage*, Paris 1878.
- 27 Bouvier 1844<sup>3</sup>, 403 f.
- 28 Bouvier-Prange 1828, 323.
- 29 Bomford et al. 1990, 58.
- 30 Mérimée 1830, 190 describes the limited use of chromic oxide: »Enfin l'oxide de chrome est un couleur verte, précieuse pour la porcelaine et les émaux ...« and »L'oxide de chrome est employée principalement dans la peinture en émail; on peut cependant l'employer à l'huile, et si on ne le fait pas, c'est à cause du prix élevé de cette couleur, et aussi parce qu'elle n'a pas beaucoup d'éclat; mais elle a plus de corps qu'aucune des autres couleurs vertes, et, dans quelques circonstances, ce peut être un avantage«.
- 31 Mérimée 1830, 197.
- 32 Bomford et al. 1990, 59.
- 33 »Depuis quelques années, on trouve dans le commerce un vert de cuivre extrêmement brillant, que l'on vend sous le nom de vert de Vienne, vert de Brunswick, ou vert de Schweinfurt« (Mérimée 1830, 197).
- 34 Bomford et al. 1990, 61.
- 35 Chevalier Saint-Victor, *Aquarelle-Miniature Perfectionnée*, Mailand, Paris 1835, 56. Many different browns and blacks are mentioned in the literature on this subject. In general, for more details about the pigments of the period see Bomford et al. 1990 and the far more extended version of this contribution by Andreas Burmester and Claudia Denk, Comment ils inventaient ces verts chatoyants? Blau, Gelb, Grün und die Landschaftsmalerei von Barbizon, in: Andreas Burmester, Christoph Heilmann und Michael F. Zimmermann (Hrsg.) *Malerei der Natur - Natur der Malerei*, Klinkhardt & Biermann, München 1999.
- 36 Bomford et al. 1990, 34.
- 37 Arsenne 1833, Vol. 2, 247.
- 38 Etienne Moreau-Nélaton, *Millet raconté par lui-même*, Paris 1921, Vol. 1, 99.
- 39 Alfred Robaut, *L'Œuvre de Corot, Catalogue raisonné et illustré, précédé de l'histoire de Corot et de ses œuvres par Etienne Moreau-Nélaton*, Paris 1905, Vol. 1, 38f. in a letter of 29<sup>th</sup> of October 1826.
- 40 Julia Cartwright, *Jean François Millet. Sein Leben und seine Briefe*, Leipzig 1903, 114.
- 41 Vallé's shop was in rue de l'Arbre-Sec.
- 42 Moreau-Nélaton 1921, Vol. 1, 84.
- 43 Bomford et al. 1990, 32.
- 44 Etienne Moreau-Nélaton, *Daubigny - Raconté par lui-même*, Paris 1925, 26 of 13<sup>th</sup> of October 1839.
- 45 Ottoz' shop was at rue de la Michodière 2 in Paris.
- 46 Bouvier 1832, 121.
- 47 Arsenne 1833, Vol. 2, 227 not. 1.
- 48 At rue Notre Dame de Lorette 46.
- 49 Bomford et al. 1990, 43 f.
- 50 Bomford et al. 1990, 43.
- 51 In Boulevard Montmartre 8.
- 52 Moreau-Nélaton 1921, Vol. 1, 76.
- 53 Albert André, *Renoir*, Paris 1919, 21 f. and Bomford et al. 1990, 42.
- 54 Burmester and Denk 1999.
- 55 The following paintings have been investigated: (1) Gustave Courbet, *Schleuse im Tal von Optevoz (Ecluse dans la vallée d'Optevoz)*, 1854, canvas, 63,6 x 84,5 cm, Bayerische Staatsgemäldesammlungen München (in the following BStGS), Inv. No. 8584. Courbet painted this painting closely together with Charles-François Daubigny, see Konrad Laudenbacher, Beobachtungen zur Maltechnik an ausgewählten Bildern der Schule von Barbizon, in: Andreas Burmester, Christoph Heilmann und Michael F. Zimmermann (Hrsg.) *Malerei der Natur - Natur der Malerei*, Klinkhardt & Biermann, München 1999, (2) Gustave Courbet, *Durchgehendes Pferd (Le piquer ou le cheval dérobé)*, 1859/61, canvas, 193 x 228 cm, BStGS, Inv. No. 8651, (3) Gustave Courbet, *Landschaft mit Fluß und Brücke (Paysage près de Maizières)*, 1865, canvas, 50 x 65 cm, BStGS, Inv. No. 8649, (4) Gustave Courbet, *Sommerlandschaft*, around 1868, canvas, 28,5 x 36,7 cm, BStGS, Inv. No. 8403, (5) Gustave Courbet, *Dorfausgang im Winter*, around 1868, canvas, 44,5 x 54,0 cm, Städtisches Kunstinstitut Frankfurt, Inv. No. 1406 and (6) Gustave Courbet, *Apfelstilleben (Pommes)*, 1871, canvas, 50,4 x 63,4 cm, BStGS, Inv. No. 8623
- 56 Alexandre Schanne, *Souvenirs de Schaumard*, Paris 1886, 287.
- 57 »Courbet is said to have painted the Burial at Ornans with color bought at the common shop (drogiste), very ordinary and costing little. It was on the chimney-piece in pots. He jeered at painters who ruined themselves

- ves by fine colors.« (Bernard Dunstan, *Painting Methods of the Impressionists*, London 1976, 10)
- 58 Klaus Herding, *Farbe und Weltbild. Thesen zu Courbet Malerei*, in: Werner Hofmann (ed.), *Courbet und Deutschland*, Catalogue Köln 1978, 478-492.
- 59 Robaut 1905, Vol. 1, 24.
- 60 Pierre Courthion, *Corot – Raconté par lui-même et par ses amis. Pensées et écrits du peintre*, Genf 1944, 198.
- 61 The following paintings have been investigated: (1) Camille Corot, *Landschaft bei Riva am Gardasee (Vue prise à Riva)*, 1835, canvas, 98,6 x 141,5 cm, BStGS, Inv. No. 14581, (2) Camille Corot, *Simende*, 1850-55, canvas, 46,2 x 38,4 cm, BStGS, Inv. No. 11259, (3) Camille Corot, *Sommerlandschaft (L'Orme au Bord du Lac)*, 1855-60, canvas, 37,3 x 42,5 cm, Städtisches Kunstinstitut Frankfurt, Inv. No. 1404 and (4) Camille Corot, *Brücke und Mühle in Mantes (Sur le pont de Mantes)*, um 1860/65, canvas, 25,5 x 34,0 cm, BStGS, Inv. No. 8844.
- 62 Moreau-Nélaton 1925, 26.
- 63 The following paintings have been investigated: (1) Charles-François Daubigny, *Schleuse im Tal von Optevoz (Ecluse dans la vallée d'Optevoz)*, 1854, canvas, 48,2 x 81,3 cm, Staatliche Kunsthalle Karlsruhe, Inv. No. 2581, (2) Charles-François Daubigny, *Les Environs de Chartres*, 1858, canvas, 94,0 x 161,0 cm, in private possession, (3) Charles-François Daubigny – attributed, *Landschaft bei Auvers*, um 1865/69, canvas, 119,9 x 225,6 cm, BStGS, Inv. No. 14994, (4) Charles-François Daubigny, *Normannische Küstenlandschaft (Villerville-sur-Mer)*, 1868, mahogany, 37,4 x 67,5 cm, Städtisches Kunstinstitut Frankfurt, Inv. No. 1956, (5) Charles-François Daubigny, *Le Moisson (Getreideernte)*, about 1872, canvas, 46,5 x 81,7 cm, in private possession, (6) Charles-François Daubigny, *Le Verger (Französischer Obstgarten zur Erntezeit)*, 1876, canvas, 168 x 300 cm, Städtisches Kunstinstitut Frankfurt, Inv. No. 1444, and (7) Charles-François Daubigny, *Abendstimmung am Meer*, 1877, canvas, 172,0 x 233,5 cm, in private possession.
- 64 Bomford et al. 1990, 61.
- 65 Arsenne 1833, Vol. 2, 247 described the pure »vert Véronèse« as »il se rapproche du vert de Schéele, mais il a plus d'éclat«. However, both new strong greens »Vert Véronèse et Vert émeraude« have been commonly used mixed with browns – »mêlés avec les Bruns« (Sensier 1872, 201).
- 66 Robaut 1905, Vol. 1, 300.
- 67 Jules Claretie, *Peintres et Sculpteurs contemporains. Deuxième Série. Artistes vivants en janvier 1881*, Paris 1884, 187 Not. 1.
- 68 Philippe Burty, *Théodore Rousseau*, in: *Gazette des Beaux-Arts* 24 (1868), 320 Not. 1.
- 69 Arsenne 1833, Vol. 2, 247.
- 70 »Elle est assez transparente pour obtenir des glacis d'une grande richesse.« (Arsenne 1833, Vol. 2, 247)
- 71 »C'était la mèche qui met le feu aux poudres et qui métamorphose un homme ignorant et égaré, en un artiste plein de visions poétiques.« (Sensier 1872, 97).
- 72 Gustave Cahen, *Eugène Boudin. Sa vie, son œuvre*, Paris 1900, 25.