

Chapter 1

The Representation of Soil in the Western Art: From Genesis to Pedogenesis

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Preliminary remark on the word *soil*

Different people attach different significance to soil. Certainly this is the case for farmers as compared to typical city dwellers, and of course, for soil scientists compared to most other scientists and non-scientists. Consequently, the meanings and uses of the term *soil* are numerous. For the purpose of this chapter, *soil* when written with a lowercase letter, will be referred to the surface of the landscape. *Soil*, when capitalised, will refer to the Earth's surface layer—the pedological object—that if exposed in a vertical cut constitutes a pedological profile; a portion of that surface layer may include rock. A very large vocabulary is used for different Soils of the world and varies with the classifications. In this text the word “Lithosols” (French classification, Duchaufour 1982) is quoted, it refers to young Soils, mainly constituted from rocks debris by physical and chemical weathering of the initial rock; they are called Leptosols in the IUSS-WRB classification (1998).

1.1 Introduction

It is widely accepted that humans always have considered the natural environment a subject of great interest to art. Early pictorial examples include cave paintings done by Cro-Magnon man during the Upper Palaeolithic, about 30–40,000 years ago. However the vision of Soil, as an independent work of art, is recent and still extremely rare in the world of painting. For many years, artists have depicted

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actual or imaginary landscapes from which the trained eye of a pedologist, agronomist or geographer can recognise a schematic view of what is commonly called soil. The recognition of Soil must be restricted to surficial features, because deep cuts that exhibit the complete view of a Soil profile, as conceived by the pedologist, are rarely available. In fact, the three-dimensional view of Soil is not readily apparent on the landscape. What is commonly seen in the cultivated fields is what the soil specialist calls the “plough layer”, the upper 30 cm of Soil. This is the part that muddies your shoes and it is the reason why in English “soil” is called “dirt”! This image can hardly inspire an artist, except for a few such as Brueghel the Elder. What a Soil specialist, or more specifically a pedologist, has in mind is the Soil profile, a vertical cut at the surface of the earth that may show vivid, brilliant and contrasting colors. This is the sight that has inspired the abstract artists, so that Soil or soil has entered into art. In the scarce literature exclusively dedicated to soil and art, the work of the well-known Swiss-American pedologist Hans Jenny published in 1968 can serve as a basic reference to witness the evolution of the concept of soil in the figurative arts. Two other online publications are by Wessolek (<http://www.kunstundboden.de/>) and Hartemink (<http://www.alfredhartemink.nl/various.htm>).

While the lack of enthusiasm of artists for Soil is somewhat understandable, earth scientists in general, and soil scientists in particular, deeply regret that the Soil, as a physical entity in nature, is not given greater consideration within the entire education sector—from primary school to the college and university level. It is also regrettable that national and international policies do not systematically consider the soil as a natural resource to be protected; recently, however, some progress has been made at the European Union level, with discussion in progress on the “European Directive on Soils”. A good indicator of the current policy and of people’s perception of Soil is the absence of representation of soil in art, at least as a major focus in most artwork. There is also a lack of writing and documentation in art history on soil. As far as we know, no work dealing specifically with soil and art has previously been published, while there is abundant literature related to others natural objects and features, such as plants, terrestrial and aquatic animals, water, rocks and landscapes (Carli 1980). Famous artists of the past even specialized in such themes, like Brueghel de Velours with flowers and animals, or Paulus Potter with cows.

However, even if the Soil is not the chief subject of independent artwork, it is perceived and included as a part of the landscape. The depiction of Soil or soil can have either a symbolic or a realistic aspect in the context of religion, history, science, and art for a given historical period. This chapter will: (i) show representations of Soil or soil in Western Art from the Palaeolithic to the modern era, and (ii) show some recent artworks where the Soil is considered as the main subject, and has as its goal to present Soil in art from Genesis (the Bible) to Pedogenesis (the scientific approach of the Soil formation, from the Greek word *Pedon* meaning soil).

1.2 When Soil is Depicted by Chance in the Landscape: The Soil as a Surface

1.2.1 *Prehistory and The Bible*

Cave paintings were produced by upper-Palaeolithic artists about 40,000 years ago. These paintings are linked to Nature only through hunting or fishing scenes, with drawings of wild animals and sometimes with parts of human body, usually the hands. Scarcely represented are other natural subjects, such as plants, and features of the landscapes; to a larger extent, soils are neglected. However, one exception is observed on the web site “Memo, le site de l’histoire”, section “les cultures lithiques européennes” [http://www.memo.fr/Article.asp?ID=PRE_PAL_005 (in French)]. It concerns the Magdalenian and Hamburgian time periods (about 15,000 BP). Artistic representations from these periods, at Teyjat and Le Chaffaud in France, and Pekárna in Moravia, depicted herds moving on a landscape including a sketch of the soil surface. However, even if these depictions of hunting activities were extremely realistic, the specialists all agree that they were more symbolic than functional. In other words, except for the Lithosol of the pedologists which is the rock itself (!), no soil is represented in the caves.

In the biblical Genesis story of the World creation, the whole of humanity is “soil”. In fact, Adam (meaning “soil” in Hebrew) was created from red dust and returned back to it. In addition, Chouraqui (1989), in his literary translation of the Bible, called the first man “Adam the Glebe” (Glebe in the archaic sense of soil or earth, or dirt, mud or clay), so that the depiction of Adam can be considered as a “soil” representation. But without going so far back in history, it should be mentioned that numerous past engravings and paintings depicted Adam coming out of the soil. As descendants of Adam and Eve, people are “doubly soil”, since Eve (meaning “life” in Hebrew) was made from Adam, who in turn was made from soil. Thus, Adam and Eve were soil and life.

1.2.2 *Antiquity*

The few extremely schematic representations inherited from the Assyrian civilisation (11th to 7th BC) depict natural scenes in which the soil surface is represented by schematic rocks and hillocks, drawn as shaped curves (Parot 1961, p. 40). Such representations are also observed throughout the Middle Ages (see below). Although it is known that the Greeks made decorative paintings, very few traces have been found, except for frescoes of Aegean art coming from Santorini (also known as Thera), dating from the 5th century BC (Carli 1980, p. 21). Later on, paintings on pottery remains have aided in deciphering the Greek perception of soil. Landscape was seldom represented on the ceramic objects, so no soil appeared. In the representations

of agriculture and the goddess Demeter (Ceres in the Roman mythology), the only symbols displayed were those of the plough and the grain bundle.

Wall paintings were widespread in the Roman civilisation as decorative art designed in a truly realistic style that would never be seen again until the Early Renaissance. Beyond the pleasure of the flesh depicted at Pompeii, Nature was represented through flowers and birds, as well as other animals. However, relatively few representations of the landscape stood the test of time (Carli 1980, pp. 12 and 24). They were probably simply lost. It cannot be imagined that the Roman society with its large concern for agriculture (*e.g.*, agronomic writings of Cato the Elder, Pliny the Elder, Varro, Columella, Virgil and others) failed to have any pictorial representation of the landscape.

1.2.3 *The Middle Ages*

The Middle Ages period produced many representations of rural landscapes that included the soil surface. However, religious or mythological works presented in this section need to be distinguished from the secular ones, which could be considered rather as technical and pre-scientific representations. These latter illustrations came either from treatises on agriculture or the “Très Riches Heures”, a famous illuminated manuscript of the 15th century that will be discussed later in the chapter.

From the Byzantine period of the Early Middle Ages (6th century), many mosaics depicted rocky landscapes. Thus, at Ravenna in “Moses Receiving the Tablets of the Law on the Mount Sinai”, the schematic forms anticipated what would appear in the mosaics or paintings of the Late Middle Ages (Carli 1980, pp. 28 and 32), with soil represented only with a single line, and rocks and/or hillocks drawn as shaped curves. However, between the 5th and 12th century, the representations of soil surface or landscapes are very often strongly schematised with undulating lines or hillocks, as in religious miniatures (Fig. 1.1). During the Middle Ages, under the influence of Christian cosmology, the landscape painting styles inherited from the Romans and the Byzantines moved to an oversimplification, as the World vision of that period became more spiritual. Actually, Nature cannot be objectively represented unless is freed from its magical aspect; we have to wait until the Renaissance before this occurs (Lenoble 1969).

During the Roman period, rocky landscapes were drawn in a way that today would be described as either infantile or stark modern (Carli 1980, p.36: Nepi, Fresco, late 11th century, the three horsemen of the Apocalypse). An example is a detail of a miniature by Stephanus Garcia in “The Apocalypse of Saint-Sever”, a French Romanesque illuminated manuscript from the 11th century. In “The Fall of Hail, Fire and Blood On The Earth” soil and roots were simply depicted with an undulated line on a large yellow colored area (Carli 1980, p.35: The Apocalypse of Saint-Sever, a miniature from the collection of “Bibliothèque Nationale de France”). Until the 14th century, there was almost no realistic design in soil representation. Artwork from that period was meant to be read as a group of



Fig. 1.1 « Tentation du Christ » (*Temptation of the Christ*), 12th century, Anonymous, Bibliothèque nationale de France (Manuscripts occidentaux, Copte 13, fol. 9v), Paris, France (see as color plate following *Index*)

symbols, even representations that seemed realistic, such as animals on the decorated Romanesque capital letters written on parchment. This tradition has continued until the 16th century. Famous painters continued to depict soil symbolically in their work related to religion and mythology as in “Adam and Eve” and Cranach (1472-1553) in “Venus in a landscape” (Fig. 1.2).

1.2.4 The 14th Century and the Renaissance: Realism in Landscape and Soil Representations?

The Florentine painter Giotto (1266-1337) made a decisive break with the static Byzantine style, introducing realism. His paintings of rocky landscapes were among the first that included some perspective. Other Italian painters from the contemporary Giotto’s Siennese school developed a similar naturalistic style: Duccio di Buoninsegna (1260-1318), Simone Martini (1284-1344) and the Lorenzetti Brothers (1280/1285-1348). Duccio, and more than a hundred years later, Andrea Mantegna (1431-1506) were leaders realistic representation of rocky landscapes. For that period, Ambrogio Lorenzetti’s fresco “Good Government, Bad Government”

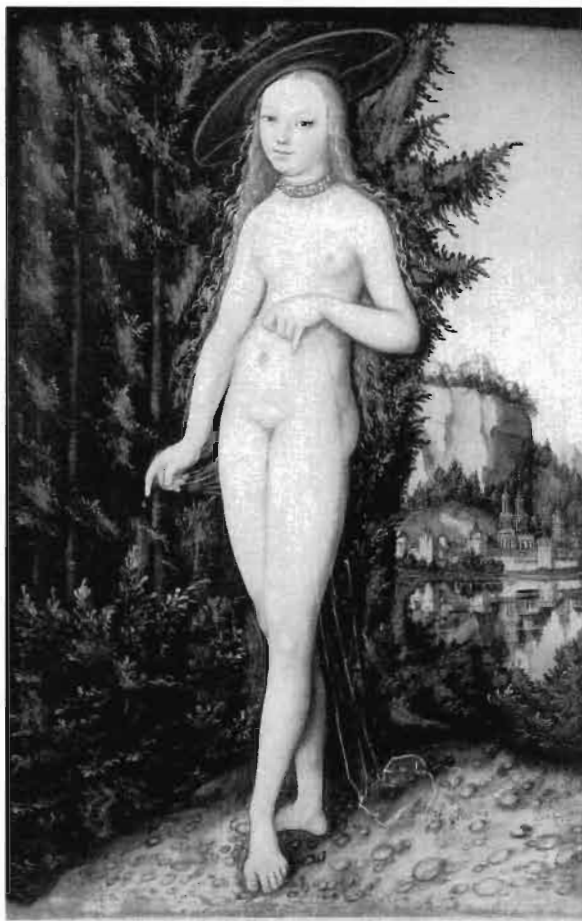


Fig. 1.2 « Vénus debout dans un paysage » (*Venus standing in a landscape*), circa 1529, Cranach the Elder, Musée du Louvre (Inv. 1180), Réunion des Musées Nationaux (RMN), Paris, France. Photo J.G. Berizzi (see as color plate following *Index*)

(1338) was a pioneering landscape representation, with striking realism in the depiction woody hills and fields surrounded by cypress trees.

A century later, realism in landscape painting was more fully expressed in the “Miraculous Draught of Fishes” (1444), a memorable work by Konrad Witz (1400-1446). With the artist-rendered landscape perfectly depicting the surroundings of Geneva, the painting is considered a landmark in the history of Western landscape painting. The representation of natural sceneries was afterwards more realistic and the soil surface was depicted with numerous forms. The landscape watercolors by Albrecht Dürer (1471-1528) became famous for their modernity, as did the summer and winter landscapes painted by Peter Brueghel the Elder (1527/28-1569). Dürer’s paintings were imbued with realism when depicting still

life rather than religious or mythological subjects, but like Cranach, his soil representation was elementary, as for example in “Adam and Eve” (1507) (http://en.wikipedia.org/wiki/Adam_and_Eve).

During the Renaissance, the soil, as a surface, is generally represented in a highly realistic way, even for symbolic and/or imaginary landscapes. Such realism sometimes allows one to discern the Soil profile with different colours given to the surface soil and to deep horizons, as, for example, in the works by Hans Memling (1430-1494) of “The Last Judgment”, *circa* 1470) ([http://en.wikipedia.org/wiki/The_Last_Judgment_\(Memling\)](http://en.wikipedia.org/wiki/The_Last_Judgment_(Memling))) and Hieronymus Bosch with his “St John the Baptist” (*circa* 1500) (see section 1.3.2).

1.3 When Soil is Depicted by Choice in the Landscape: the Soil as a Profile

Three reasons motivated the representation of a soil profile:

- to explain the resurrection of the dead,
- to display the roots,
- to show ploughing.

1.3.1 Soil Profile for the Resurrection of the Dead

In the “Last Judgment” by Rogier Van der Weyden (1432) [Fig. 1.3, detail (a)] the resurrection of dead required the artist to show the Soil profile. The complete painting exhibits numerous such soil profiles. A detail [shown in Fig. 1.4, detail (b)] is so true to reality that it might be titled “Birth of a Pedologist”, and can be compared to a photograph of a desiccated and polygonally cracked clayey soil surface (see photo in lower right corner, Fig. 1.4).

1.3.2 Soil Profile for Displaying the Roots

In the paintings of the Renaissance, the representation of a ditch or a soil cut in a painting served very often as an excuse to picture roots. In the “St John the Baptist” by Hieronymus Bosch (1450-1516) the figure of St John leans towards a sharp vertical exposure of soil which includes a strange large root. (http://en.wikipedia.org/wiki/St._John_the_Baptist_in_the_Wilderness).

A large root also appears in “The Tempest” painted by Giorgione (1477/78-1510) ([http://en.wikipedia.org/wiki/The_Tempest_\(painting\)](http://en.wikipedia.org/wiki/The_Tempest_(painting))) and in “The Fall of Icarus” (Fig. 1.5) by Peter Brueghel the Elder (1525-1569), just at right and behind the



Fig. 1.3 Detail (a) from « Le Jugement Dernier » (*The Last Judgement*), circa 1432, Van der Weyden R., Musée Hôtel-Dieu, Hospices Civils de Beaune, Beaune, France (see as color plate following *Index*)

ploughman. These works were just some examples of paintings in which large forked roots were made evident.

The representation of roots was not due to chance, but chosen for its symbolic value. The root presented in detail in the foreground of the “St John the Baptist” painted by Bosch or “The Fall of Icarus” by Brueghel (Fig. 1.5), could be from the mandragora as suggested by Marjnissen and Ruyffelaere (1987). The roots of *mandragora* genus (mandrake) were extensively used in magic rituals.

The famous French dictionary Le Robert (1966, p. 250) gave the following definition (translated from French):

Mandragora- n., Bot. A dicotyledonous plant, of the *Solanaceae*, family with generally forked roots showing a basic similarity to a doll (Fig. 1.6); it produces yellowish fruits with an unpleasant smelling and taste. *Mandragora officinarum* has narcotic and purgative



Fig. 1.4 Detail (b) from « Le Jugement Dernier » (*The Last Judgement*), circa 1432, Van der Weyden R., Musée Hôtel-Dieu, Hospices Civils de Beaune, Beaune, France. The box in the lower right corner is a photograph of a desiccated and polygonally cracked clayey soil surface (see as color plate following *Index*)



Fig. 1.5 « La chute d'Icare » (*The Fall of Icarus*), circa 1568, Bruegel P.I., Musées Royaux des Beaux-Arts de Belgique, Brussels, Belgium (Inv. 4030). Photo : RoScan, J. Geleyns (see as color plate following *Index*)

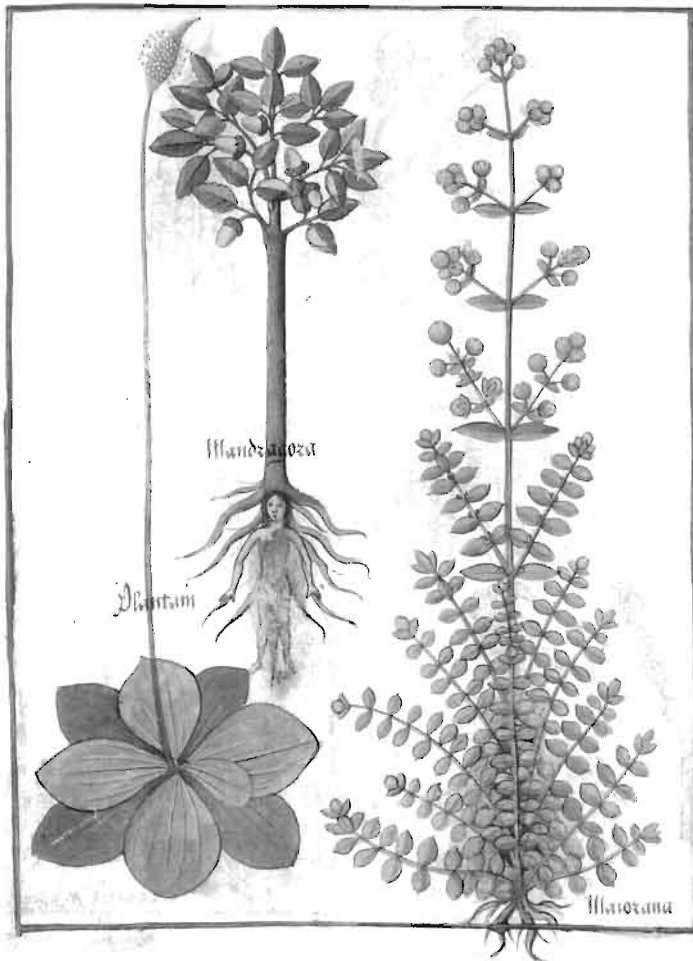


Fig. 1.6 « Flore Mandragore » (*Mandragora flora*), 15th century, Anonymous, Bibliothèque nationale de France (Manuscrits occidentaux français 12322, fol. 180v), Paris, France (see as color plate following *Index*)

properties. Formerly used as a talisman when carved. (French) vernacular: Main-de-Gloire, aphrodisiac and fertility properties were assigned in past times to the mandragora...

“Transcendental Magic, its Doctrine and Ritual” is a treatise written in 1855 by French occultist Eliphas Levi; chapter 16 therein (Levi 1896; in English) is concerned with mandragora and can be consulted for more information on the subject.

The perception of mandragora as the subject of superstitions is presented in the “Encyclopédie des Symboles” (1996) through the following comments (translated from the French):

Mandragora is a plant with a high symbolic value, inspiring both fear and fascination. Its forked root which crudely resembles the human form has been credited since ancient times with a divine origin. It is considered as a universal medicine. The mandrake grows only at night, releasing some toxins (hyoscyamin, atropin, scopolamin) with a narcotic effect. For this reason, the root was used by medieval witches to concoct potions, and it played a remarkable role in the occult practices. According to the legend, the root grew only beneath gallows trees as it was believed to be produced from the semen involuntarily ejaculated by a hanged man. It has to be gathered with high caution, and it was said that the mandrake gave forth an extremely piercing and fatal cry. It was uprooted, therefore, by a dog that died immediately after. During Antiquity, the mandrake was considered as one of the attributes of the sorceress Circe. The root was used by the Jews to overcome infertility. In general, mandrake was associated with black and supernatural forces that man would approach with many precautions.

The book by Jeanne Bourin (1990) on “The Rose and the Mandragora” provides additional information on the supernatural powers ascribed to mandragora. A history of the scientific properties and medical usage (pharmacology and anaesthetic effects) of mandrake was recently published by Hotton (2003).

The short book by Gustave Le Rouge (1912), one of the pioneers of science fiction, is a well-documented source, providing additional some useful information on beliefs about mandragora:

- The perfume of the mandragora’s flowers can resulted to giddiness and a death-like sleep for anyone who inhaled it (p. 8), while the root has erotic and aphrodisiac virtues (p. 18).
- According to the alchemists and physicians of the Middle Ages, the first men were gigantic mandragores. In other words, humans originated from the mandragora that in an evolutionary sense, was a transition between the plant and animal (human) worlds.
- Snakes are especially loathed to mandragora, and its root can serve as an antidote for their bite; in fact, Eve could have used the mandragora as an antidote for the serpent (p. 22).
- Its root is thick, hairy and forked (p. 13), in a humanoid form;
- According to rabbinic traditions, the mandragora has grown in the Terrestrial Paradise in the shadow of the Tree of Knowledge of Good and Evil. Man has come from the silt of the Earth, so that he was probably molded at an early stage in a root.
- The fame of the mandragora reached its apogee during the Middle Ages. Just the mention of the *mandragora*’s name sent men trembling, and people avoided thinking of the “plant-human”. When gathered, the root shrieked, and beads of blood squeezed out on its rootlets. But the one who got it became rich and happy forever...and stored it safely in a moneybox. Therefore, the mandragora became the source of a thriving trade. The mandrake could worth 2 to 3 times its weight in pure gold, especially if its form perfectly resembling the human body or attributes (p. 23-24).
- The mandragora was associated with Saturn (p. 29-30).
- It is associated with, or even mistaken for, other magical creatures such as “Teraphim”, “Androids”, “Golem”, “Homunculus” (p. 35). The alchemists tried

to produce such viable creatures, and numerous narrations reported the production of an artificial humanoid in an alembic after mandrake distillation.

- Finally, many pages of Le Rouge's book (p. 117-144) described in detail the process of gathering the root beneath a gallows, either by the alchemist himself, or by a virgin. The young lady used her blond hairs to braid a rope that she tied to a dog's tail. She attached the other end to the plant stem, and then she scared the dog, so that in running away, it pulled out the sought-after root. The root was replanted in a red soil, and to maintain its vitality, it was doused with the blood of an animal whose sacrifice was dedicated to Saturn. Many details are presented above to underscore the importance of the symbolism surrounding the mandragora root, not just in the realm of magic and the hidden forces of nature, but also for the link to the Bible, and in particular to Genesis.

The mandragora was depicted in manuscript illustrations dating to the Middle Ages (Fig. 1.7). Inherent symbolism in paintings that pictured the mandrake is well established:

- It was associated with people closely related to the life of Jesus, such as in "The Worship of the Shepherds" by Peter Brueghel the Elder or in the "St John the

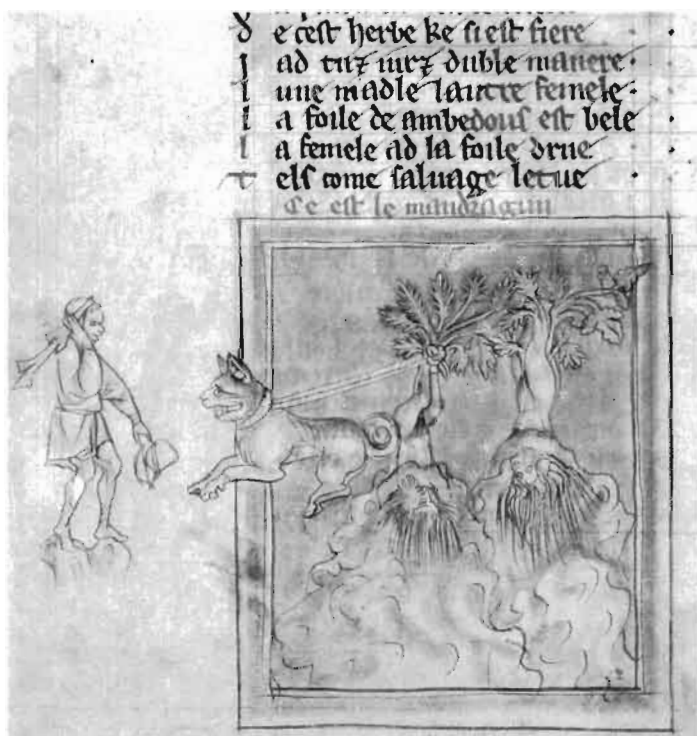


Fig. 1.7 « Récolte de la Mandragore » (*Mandragora harvesting*), 15th century, Anonymous, Bibliothèque nationale de France (Manuscrits occidentaux français 14969, fol. 61v), Paris, France (see as color plate following *Index*)

- Baptist” by Hieronymus Bosch. In such cases, the mandrake might be the symbol of the fight against sin (antidote for the serpent). Moreover, the figures often wore red fabrics, the red being the colour referring to Adam and to Christ. For instance, during the mid 18th century, Johan Gottschalk Wallerius (1753) mentioned “Adamic Humus”, meant to be refer to a reddish earth, in his “mineralogical” classification of “humus”.
- The painted figures associated with mandrake are generally presented as having a melancholy temperament. Moreover, according to popular belief, “melancholia” is a disease affecting the artists. But the mandrake is also a symbol of Creation; its positive and negative aspects, as depicted in Bosch’s “St John the Baptist”, show that mandrake might be associated with both melancholia and the creation (in reference to Christ). As a last example, in his painting “The Magpie on the Gallows” (1568), Brueghel the Elder felt a need to depict a soil profile as well as a mandrake under the gallows (http://en.wikipedia.org/wiki/The_Magpie_on_the_Gallows).

In conclusion, the mandrake as an edaphic (and telluric) object is a significant symbol in the paintings of the Middle Ages and Early Renaissance. A more complete study of its symbolic importance in the arts is needed. That is also the case in literature; the mandrake is a central subject in the book “Vendredi et les limbes du Pacifique” by Michel Tournier (1972).

1.3.3 Soil Profile Displayed by the Ploughing

From the 14th and during the 15th century, especially in the “Très Riches Heures” and the “Calendriers” (calendars), we see representations of agricultural tasks and toils. Here, the soil is depicted with a clear concern of realism and technical specificity (Fig. 1.8), including the tilling of the soil. Herein is an early artistic and technical representation of what agronomists and pedologists describe as an agricultural profile. In addition to this example, Peter Brueghel the Elder (1525/30-1569) might be newly cited for “The Fall of Icarus” (Fig. 1.5). Icarus is the tiny figure at the bottom on the right-hand corner, with only his legs visible, while in forefront of the canvas, attention is centered on the good Flemish ploughman tilling furrows. That was the triumph of daily working life over Utopia (“falling from the sky”). Beside the ploughman serving as a reference for agriculture, Brueghel the Elder did not fail to symbolize other of the world’s riches—animal husbandry in the form of the shepherd leaning on his staff, and the wealth of the sea shown in the form of a busy fisherman. It should be also noticed that forked roots are included in the agricultural profile—perhaps meant to be mandrake!

The symbolism associated with mandragora, in line with the heavenly utopia of Icarus, might be related to the earthly utopia that includes a desire for wealth and power. Nothing is better than a good ploughing to obtain resources from the Earth, rather than expecting those from Heaven. Icarus is seen flailing in the water, but is ignored. Other explanations were given, such as an illustration of an ancient Flemish proverb “No plough stands still because a man dies”. Brueghel the Elder



Fig. 1.8 « Les Travailleurs » (*The Workers*), 1450, Maître de Talbot, Bibliothèque nationale de France (Manuscripts occidentaux français 126, fol. 61 v), Paris, France (see as color plate following *Index*)

was surely not the first artist who depicted ploughing, but he probably was the first who did it in the non-technical context.

1.4 The soil by Hieronymus Bosch and his Disciples

The work of Hieronymus Bosch (*circa* 1450-1516) abounds in “earth” or “soil/Soil” representations. For instance in the triptych “The Temptation of St Anthony”, bare soil represented a large proportion of the whole painting (Fig. 1.9). A detail of “The Temptation of St Anthony” shows a humanoid creature as a mixture of soil (a hill), man and plant (Fig. 1.10). The erotic symbolism of such a creature is quite evident. The soil in Bosch’s work was not only represented as a surface, but often either as a Soil profile in a slope cut (see above), or in adobes that are associated with thatched roofs. Here he emphasized the decomposition and decay of the sides of huts, in the same way that plant debris is decomposing on the top of the soil (Fig.1.10). The whole of Bosch’s work is influenced by “decomposition” and soil depiction contributes to this process. The work of Bosch would deserve an independent study of his “soil”, or “Soil” vision.



Fig. 1.9 Central panel of « Tentações de St. Antônio » (*The temptations of St Anthony*), circa 1500, Hieronymus Bosch (1505-1506), Museu Nacional de Arte Antigua, Divisão de Documentação Fotográfica - Instituto dos Museos e da Conservação, Madrid, Spain, (Inv. 1498 Pint), Photo José Pessoa (see as color plate following *Index*)

As Hieronymus Bosch is said to have been an inspiration for the surrealist movement of the twentieth century, some Surrealists might be considered as his disciples, not only by the “fantasy” genre they shared, but also throughout their vision of soil or earth’s uses. For instance, in Salvador Dalí’s work, in the “Soft Construction with Boiled Beans”: Premonition of Civil War” (1936. Oil on canvas. Museum of Art, Philadelphia; (<http://www.philamuseum.org/collections/permanent/51315.html>), or in “The Spectre of Sex-Appeal” (1934. Oil on canvas. Gala-Salvador Dali Foundation, Figueras, Spain; (<http://www.salvador-dali.org/eng/cat1104-2/finici.htm>), or also in the “Metamorphosis_of_Narcissus” (http://upload.wikimedia.org/wikipedia/en/2/21/Metamorphosis_of_Narcissus.jpg).

Other examples are the “Extinction of Useless Lights” (“Extinction des lumières inutiles”) by Yves Tanguy (1927. Oil on canvas) and “The Magician” by Jean Dubuffet (1954. Slag and roots, including slag base), both on view at The Museum of Modern Arts, New York (<http://www.moma.org/collection>).



Fig. 1.10 Detail of « Tentações de St. Antão » (*The temptations of St Anthony*), Hieronymus Bosch (1505-1506), Museu Nacional de Arte Antigua, Divisão de Documentação Fotográfica - Instituto dos Museus e da Conservação, Madrid, Spain (Inv. 1498 Pint), Photo José Pessoa (see as color plate following *Index*)

1.5 The Soil, Yesterday and Today

Paintings during the 16th, 17th and 18th centuries reached realistic excellence in representing the soil surface that could never be equaled. During this period and until the 20th century, artists have not considered the Soil as a chief subject, not even the Impressionists who have rendered it only as a landscape component.

During the 20th century, the soil surface was well represented in the Land Art movement [see chapters 4 (Toland and Wessolek) and 10 (Lafon), *this volume*].

The early scientific depiction of Soil in painting dated from the beginning of the 20th century, either prepared for educational exhibitions, generally as canvases representing different types of Soil, or as splendid illustrations in books on Soil. We explore here the interface between Science and Art. In a recent art exhibition on "The Earth" (2005, Uzès, France), C. Feller presented, without any technical explanation, two oil canvases (60 x100 cm) representing soil profiles; these canvases were previously published as illustrations in the Soil science book of

Demolon (1952) and were anonymously displayed in the 1940's for a Soil science course or exhibition. The 2005 exhibition visitors generally found these canvases splendid, and considered these paintings solely as contemporary art—never thinking of them as scientific illustrations.

Today, Soil is depicted as an object *per se* especially by some naturalists, agronomists, pedologists and others who have developed a substantial artistic talent besides their scientist's profession. Many works of contemporary artists - paintings, sculptures, performances, or art installations - centered on the Soil can be seen at <http://www.kunstundboden.de/>.

The World Soil Museum at the International Soil Reference Information Centre in Wageningen, the Netherlands, displays many attractive renditions of pedological landscapes, unfortunately from anonymous artists. Among the works of our French scientific colleagues that can be cited: "Le Sol" (*The Soil*; Fig. 1.11) by Guy Paillotin, perpetual secretary of the French Academy of Agriculture, or "Tempête sur Jupiter" (*Tempest on Jupiter*; Fig. 1.12) by pedologist/mineralogist from INRA (the French National Institute for Agricultural Research) Folkert Van Oort who was able to create compositions with Soil collected in the forests of Orleans (or on Jupiter?). Before ending this chapter one must mention an "artist's book" by Martine Lafon called "Des taches et des concrétions...le sol est bourré de complexes" (*Stains and concretions... the soil is full of complexes*) (Lafon and Feller 2004; see illustrations in Lafon's chapter (10), *this volume*) that consisted of a transparent glass cylinder containing a rolled booklet made with Japanese paper. The artist engraved the glass cylinder (that represents a core) with an imaginary Soil profile, as well as creating etchings in the booklet that depict Soil features; the booklet's text was by C. Feller.

Of course, the representation of Soil in contemporary art cannot escape abstraction. In the near future, one can expect artists working with scientists will create computer-generated images of soil based on mathematical models aimed at depicting Soil processes. Hence, Science meets Contemporary Art. The abstraction of Nature is an old idea based on the ancient atomist philosophy of nature founded by Democritus (*circa* 460-370 BC). He highlighted the distinction between Reality and Appearance, because all reliable knowledge is based on this distinction (Lenoble 1969). To atomize Nature—this is what has been done for a century in Art as in Sciences, is it not so?

1.6 Conclusion

Our look at soil or Soil in art confirmed that in Western culture, most artists did not view soil as the complex and subtly beautiful medium that holds the interest of agronomists or pedologists. It was usually only considered as a surface. The below-ground layers were generally not represented, while rocks and other natural objects fascinated artists. However, as underlined by Jenny (1968) in his paper's conclusion: "*Whoever said that soils lack beauty is behind the times. Soil in art has arrived. It is an enrichment of art that is here to stay*".

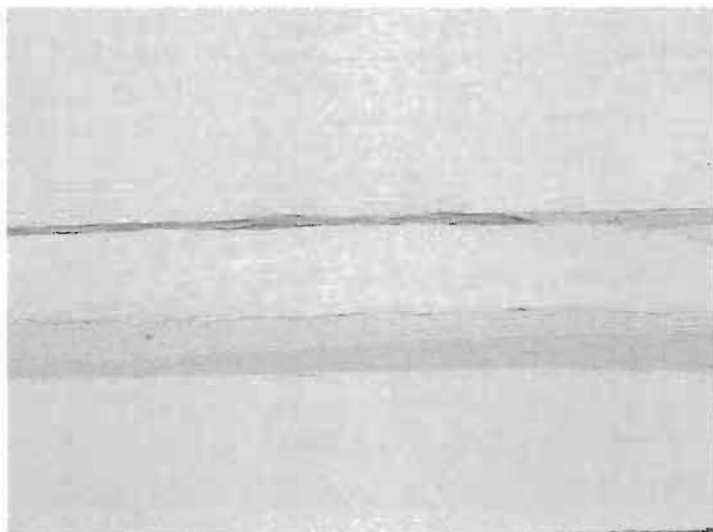


Fig. 1.11 « Le Sol » (*The Soil*), ca 1985. Oil on canvas. Guy Paillotin, Académie d'Agriculture de France. Private collection. With permission of the artist (see as color plate following *Index*)

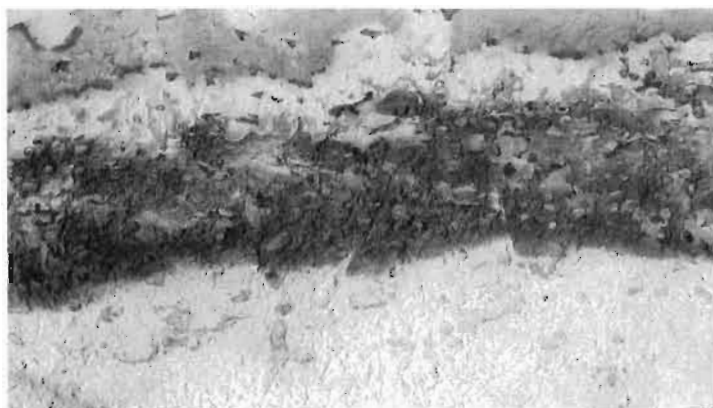


Fig. 1.12 « Tempête sur Jupiter » (*Tempest on Jupiter*), circa 2000. Soil material attached to canvas, Van Oort F., INRA. Private collection. With permission of the artist (see as color plate following *Index*)

Finally, it is predicted that we will increasingly see more artists and Soil scientists interacting at the interface of their expertise and consciousness, to produce images and objects that will capture the attention of audiences. If a successful exhibition on “The Soil” could be hosted by the Grand Palais in Paris, or the Museum of Modern Art in New York, Soil science texts would surely become best-sellers the day after the opening reception!

Never stop dreaming...

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