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Secrets of the humus

Hervé Brunon

► **To cite this version:**

Hervé Brunon. Secrets of the humus. Luigi Latini; Simonetta Zanon. Soil as a landscape. Nature, crossings and immersions, new topographies, Fondazione Benetton Studi Ricerche/Antigua, p. 9-19, 2022, 978-88-8435-342-9. halshs-03927947

HAL Id: halshs-03927947

<https://shs.hal.science/halshs-03927947>

Submitted on 1 Sep 2023

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memorie

series founded by Domenico Luciani

directed from 2015 by Luigi Latini and Monique Mosser

20

Soil as a Landscape

excerpt

Hervé Brunon

Secrets of the humus

pp. 8-19

Soil as a Landscape
Nature, crossings and immersions,
new topographies

edited by
Luigi Latini and
Simonetta Zanon

Fondazione Benetton Studi Ricerche
Antiga

Treviso 2022

Soil as a Landscape

*Nature, crossings and immersions,
new topographics*

edited by
Luigi Latini and
Simonetta Zanon

published by
Fondazione Benetton Studi Ricerche
with Antiga
First published Treviso 2022
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© 2022 ISBN 978-88-8435-342-9

Editorial coordination: Patrizia Boschiero.
Editing and layout: Nicoletta Tesser.
Translations:
John Millerchip (from Italian into English:
preface, p. 7; contributions by
Simonetta Zanon, pp. 21-33; Anna Lambertini,
pp. 35-46; Antonio Perazzi, pp. 47-56;
Andrea Caretto and Raffaella Spagna,
pp. 57-71; Laura Zampieri, pp. 83-91;
Fabrizio Cembalo Sambiase and
Antonio di Gennaro, pp. 107-116; Rosario Pavia,
pp. 117-130; Giacomo Certini, pp. 131-142;
Paolo Pileri, pp. 143-155; Laura Fregolent,
pp. 157-167); Traduttori Associati
(from French into English: contribution by
Hervé Brunon, pp. 9-19; from German into
English: contribution by Tilman Latz, pp. 93-105).
Linguistic revision of English texts:
John Millerchip.
Index of names and places:
il Palindromo-servizi editoriali.

The volume is also published
in Italian (ISBN 978-88-8435-341-2).

Fondazione Benetton Studi Ricerche
Via Cornarotta 7-9
31100 Treviso
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fax +39.0422.579483
pubblicazioni@fbsr.it
www.fbsr.it

Distribution
Antiga Edizioni
Via delle Industrie 1
31035 Crocetta del Montello (Treviso)
editoria@graficheantiga.it
www.antigaedizioni.it

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1. Jan Bruegel the Elder,
The Garden of Eden, c. 1610-1612,
oil on panel, 59.4 x 95.6 cm.
Madrid, Museo Nacional
Thyssen-Bornemisza,
Carmen Thyssen Collection.

HERVÉ BRUNON
Secrets of the humus

What makes a garden? A quotation can help provide some answers to the question raised by the exhibition *Jardins* (Paris 2017): “A garden starts when someone steps onto the ground and enters the space of the vegetal, of the mineral. His action is fixed into the earth and the tiny realities that he has encountered on his path memorise his presence. Bushes moved by a force other than that of the wind, fallen leaves, snapped twigs, grass bent and crushed grass, and minute, invisible animal life, disturbed by his steps, all testify to his transit and reflect the route he takes. [...] Looking up, the images absorbed by the soil are projected into the sky and thoughts rooted in earth are laid on a horizon inscribed with trees and bushes through tilling of the soil”¹

For Giuseppe Penone, a champion of ‘poor art,’ a garden is like an ontological symphony in which the presence of the visitor and his physical capacity to ‘sculpt’ a place through his very movements have the same, albeit unintentional, effect as the actions of the gardener and disturb it almost imperceptibly. Many of Penone’s works bring into play this tactile relationship with living matter, such as the series *Soffio di Foglie* (A slight stirring of leaves, 1979-2004), where the body of the artist leaves a fugitive impression of his passage in a mound of boxwood leaves. And it is indeed the ‘tilling of the soil,’ by those who are in charge of the place, which enables this meeting with the elements in the garden.

If the latter is “mise en ordre du monde” (putting the world in order),² it enters into the network of relationships that we humans weave with other visible and invisible existing organisms, age-old trees, flowers with sometimes delicate, sometimes flamboyant colours, playful birds, insects twirling in the air haloed with light, light or compact soils in which a singular form of language is expressed³ which, in my opinion, is essentially poetry. It is what I call ‘gardening relationships’ which are forged between humans and non-humans, to use the current vocabulary of social sciences, and which I would suggest are conducted more harmoniously in such a space.⁴

“Landscape gardening” writes Kant “is nothing other than the ornamentation of the soil with a variety of those things (grasses, flowers, shrubs, trees, even ponds, hillocks, and dells) which nature presents to an observer, only arranged differently and in conformity with certain ideas”⁵. The landscaper Isabelle Auricoste, for her part, currently raises the same issue by rightly connecting the garden with agricultural knowledge accumulated since Neolithic times, which the garden ‘sublimates’ to mould the material the world offers, thereby assuring mankind of a path from the sphere of labour to that of achieved oeuvre, according to the categories of *vita activa* (active life) posited by Hannah Arendt:⁶ “The garden is one of those forms which pass through history because it is, literally, an inscription, as precise as a magical drawing, which the tillage traces on the surface of the terrestrial globe, inheriting all the tradition of hand-to-hand combat with the rebel-

“To see a World in a grain of sand
And a Heaven in a wild flower.”
William Blake, *Auguries of innocence*, 1789.

This article by Hervé Brunon was previously published in *Jardins*, edited by LAURENT LE BON, MARC JEANSON, COLINE ZELLAL, Éditions de la Réunion des Musées Nationaux-Grand Palais, Paris 2017 (catalogue of the exhibition at the Galeries Nationales du Grand Palais, Paris, 15th March-24th July 2017), pp. 52-59.

1. PENONE 2003, p. 123.

2. This is a point that Pierre Grimal emphasises: “The garden seeks to be an image of the world; for this purpose it makes use of the radiance of the sky, the freshness of the water, the fruitfulness of the earth, the plants and the guests of the forests and the countryside. It is a putting the world in order. A garden starts from the moment in which a human will imposes a goal that is immediately sensitive to the ‘natural objects,’ in other words, to what is born, grows and dies according to the laws of nature. A statue borrows its material and its shape from nature (marble or wood, and also the model it represents – animal, man or plant), but it is not possessed of their life. The material of the garden, on the contrary, is free and its spontaneity escapes the laws of man” (GRIMAL 1974, pp. 395-396).

3. On the garden as language, see the ponderings of NYS 1999a and 1999b.

4. See BRUNON 2015. On relationships between humans and non-humans, see in particular the essential book by Philippe Descola, *Par-delà nature et culture* (DESCOLA 2005), as well as HOUDART-THIERY 2011.

5. KANT 1993, section 51, p. 184.

6. See ARENDT 1958. On this subject, I take the liberty of referring you to my *Jardin de sagesse en Occident* (BRUNON 2014, pp. 93 ff).

lions earth in order to coax it, fertilize it, perhaps enslave it. Each planted and cultivated garden describes the limits of a defined territory, of a reserved and closed domain in which, and through which, the mind has succeeded in understanding and dominating the laws of the universe.”⁷

Tilling the soil

This involvement of the body in the shaping of a place runs through the biblical myth of earthly paradise.⁸ According to the Jahwist tradition, at the time God made the earth and the sky, “there was no man [*adam*] to till the soil [*adamah*] (*Genesis* 2, 5) – as in Hebrew, the Latin words for ‘man’ (*homo*) and ‘soil’ (*humus*) come from the same Indo-European root. Adam was moulded by God with clay from the ground. Then “The Lord God took the man and put him into the garden of Eden to tend [*abad*] and watch over it [*shamar*]” (*Genesis* 2, 15): Adam is assigned the role of gardener. Curiously images of this theme, to my knowledge, are virtually non-existent, while there is a long tradition of depictions of the primordial couple. Jan Bruegel the Elder, for example, painted more than a hundred versions of the earthly paradise, of which one of the earliest (fig. 1, p. 8) features Adam and Eve in the background, picking the forbidden fruit. Around a large fruit tree – “the tree of life in the middle of the garden” (*Genesis* 2, 9) – overhanging a watering hole, a multitude of animals in pairs occupy the foreground on reddish brown earth, which references the material of which man was made. The view on the right opens out along a river to reveal bluish mountains on the horizon. Eden thus appears as the ideal gathering of terrestrial creatures inserted in the immensity of the world. The first occupation given to man was therefore “to till” a garden – the verb *abad* also means ‘to labour’ and ‘to serve’ – and “to watch over” it – *shamar*, ‘tend’ it, ‘protect’ it, ‘look after’ it –, in a word to nurture it. It is the Fall which causes labour to be a burdensome activity: “Accursed be the soil because of you! Painfully will you get your food from it as long as you live. It will yield you brambles and thistles, as you eat the produce of the land. By the sweat of your face will you earn your food, until you return to the ground, as you were taken from it. For dust you are and to dust you shall return. [...] So Yahweh God expelled him from the garden of Eden, to till the soil from which he had been taken” (*Genesis* 3, 17-23).

Throughout the ages, the Edenic myth has given rise to countless interpretations, many of which have focused on the relationship between Adam and the earth. What does a gardener do? The Czech writer Karel Čapek (1890-1938), a prolific author who was especially well known for his contribution to the science fiction genre, provides this answer: “While I was only a remote and distracted onlooker of the accomplished work of gardens, I considered gardeners to be beings of a peculiarly poetic and gentle mind, who cultivate perfumes of flowers listening to the birds singing. Now, when I look at the affair more closely, I find that a real gardener is not a man who cultivates flowers; he is a man who cultivates the soil. He is a creature who digs himself into the earth, and leaves the sight of what is on it to us gaping

7. AURICOSTE 1983.

8. The Bible quotations are taken from The New Jerusalem Bible.



good-for-nothings. He lives buried in the ground. He builds his monument in a heap of compost”⁹

Constantly bending over, he is only worried about his plot of land. It is a figure often portrayed in the 19th century, for example by Demetrio Cosola, *The Garden (Summer)*, 1879: this Piedmontese artist, a painter of everyday life, uses contrasting light and echoes of colours to suggest invisible familiar links between the humble silhouette bending towards the ground, in the shade of a pergola, and a luxuriant kingdom.¹⁰ Pissarro similarly depicts the patient tending of the earth in the kitchen garden of his house at Éragny-sur-Epte, in Oise¹¹ (fig. 2), to which he moved in 1884: it is probably his wife who appears on the canvas, wearing an apron in the same colour as the plants she is stooping over, as if to indicate a loving relationship, a certain affection for them.

“Tilling the soil consists, on the one hand, in various diggings, hoeings, turnings, burings, loosening, parrings, and smoothings, and on the other in ingredients,” namely “dung, manure, guano, leafmould [...], sand, straw, lime. All this is continually mixed, stirred in and flavoured.”¹² This recurring idea of care constantly lavished on the plot of land and often presented with humour in Čapek’s book *The Gardener’s Year* (1929), leads up to the importance given to different qualities of soil in a specific chapter: “You should

2. Camille Pissarro, *The Artist's Garden at Eragny*, 1898, oil on canvas, 73.4 x 92.1 cm. Washington, National Gallery of Art, Ailsa Mellon Bruce Collection.

9. ČAPEK 2000, p. 34.

10. On this picture see HENNIG 2006.

11. See WILLSDON 2005, p. 214.

12. ČAPEK 2000, p. 36.



3. Matthias Grünwald school, *Blumenbeet* (Flower Bed), first half of the 16th century, 24.6 x 28.9 cm. Potsdam, Stiftung Preussische Schlösser und Gärten Berlin-Brandenburg, Anf. 16. Jh., SPSSG, GK II (5) 536c.

have a garden the size of a postage stamp... you should have at least one small flowerbed to learn what you are treading on. [...] You would be able to recognise soil which is acid, viscid, clayey, cold, stony and nasty; you would be able to distinguish topsoil as airy as gingerbread, as warm, light and good as bread, and you would say that it was beautiful, as you now say about women or clouds”¹³

An apprenticeship begins, during which it is apparent “that you have to give more to the soil than you take from it”. So, continues Čapek, “You will burst into enthusiasm over the black humus, fondly rub the smooth woodland leafmould, balance in your hand the compact sod and weigh the feathery peat”¹⁴. In other words, comments the literary historian Robert Harrison, “To garden is to come to understand the efforts by which life forced a foothold for itself in a hostile and resistant clay”¹⁵. Certain images reveal the presence of a garden’s telluric substrate in greater detail. In a study attributed to the Grünwald school¹⁶ (fig. 3), which breaks with the customary Renaissance botanical illustrations that isolate the plant from its environment, a border along a wall, placed at eye level, creates a miniature garden in which the human being has grouped together a harmonious collection of plants,

13. ČAPEK 2000, pp. 118-114.

14. ČAPEK 2000, pp. 114-115.

15. HARRISON 2007, p. 47.

16. See CONRAD 2006.



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the layout of which can only be maintained by constant care. The painting is striking for its contrast between the abstract dimension of the rendering of the wall and the insistence, in the lower part, on the path painted in dark brown. Two centuries later, Jean-Baptiste Oudry depicts a flowerbed of tulips beside which stands a vase filled with a bunch of flowers, thus juxtaposing growing and cut flowers (fig. 4): the different colours highlight the contrast between the soil of the flowerbed, rich and dark, and that of the path, far lighter. The carnation fallen or rather placed beside the vase, positioned on the diagonal made up of the parrot and the two butterflies, closes the cycle – the flower returns to the soil from where it had blossomed. However, the garden cannot of course be limited to this horizontal medium, as Michel Tournier reminds us: “As soon as we start talking of gardens we must go beyond the geometric plane and introduce a third dimension into our thinking. For the man whose vocation is the garden digs the ground and examines the sky. To have complete understanding it is not enough to design and rake. We must learn the hidden secrets of the humus and know the passage of the clouds. But for the man-gardener there is a fourth dimension, by which I mean metaphysics.¹⁷ It is a question of applying a certain ‘science of the concrete’ according to the formula established by Claude Lévi-Strauss, to change a place and to give it a new beauty. “The absolute of the garden” adds the author of *Météores* “does not extend for an infinite time, it is compressed into one mystical moment” during which “the present becomes eternal”¹⁸.

For a long time, this knowledge of the soil would seem to be the first duty to which gardeners must apply themselves, as shown by treatises of the

4. Jean-Baptiste Oudry, *Corner of Monsieur de la Bruyere’s Garden*, 1744, oil on canvas, 129 x 162 cm. Detroit, The Detroit Institute of Arts.

17. TOURNIER 2005, p. 301.

18. TOURNIER 2005, pp. 301-302.

modern era. “The foundation of agriculture is the knowledge of the nature of the land that we wish to cultivate”,¹⁹ confirms Olivier de Serres at the beginning of his treatise on husbandry (1600), mainly distinguishing between sandy and clayey soils. And to specify: “The quintessence of the relationship with the earth being the fruit of the garden, so to speak: special agriculture is therefore necessary to treat the land, more delicately than any other part of the estate. Hence it is that the gardener is called the goldsmith of the earth: because the gardener surpasses the simple ploughman as the goldsmith does the common blacksmith”.²⁰

The *Théâtre des plans et jardinages* (Theatre of Plans and Gardening) by Claude Mollet, written approximately between 1623 and 1633 and published in 1652, also opens with a ‘treatise on soils,’ which summarises practical knowledge.²¹ The treatise by Jacques Boyceau de la Barauderie (1638), the superintendent of the King’s gardens, places the garden in a cosmic environment, first considering the four elements, heritage of ancient physics, and the three alchemical primes – mercury, sulphur and salt –, then earth, water, sun, air and the winds, the sea or even the moon.²² Detailing the “qualities required by the gardener” he specifies: “All those sciences must be learned when young, if possible, so that when old enough to work in the gardens, he starts with the spade to work with the other labourers, learning to prepare the land, to bend, straighten and bind wood for works in relief”. Here again it is the tilling that appears as the primary and main task: “to lift the earth, which sags and hardens under its own weight, and through ploughing and disturbance, it is enabled to receive help from other elements, which makes access to it easier, mitigates opposing conditions and powers that are in them, and through this tempering it becomes more fertile and capable of conceiving and nourishing that beautiful and happy production, which it creates during the seasons of the year, according to the temperature thereof”.²³

This preoccupation over the quality of the land is also shown by the agronomist Louis Liger, at the beginning of the 18th century: “Before, therefore, you think of marking out a parterre, you ought to consider of what nature the soil is you intend to make use of, for thereon depends the good or bad success of such a design, the soil being the principle of vegetation, where the plants thrive more or less, according as the moistures of the place where they grow are more or less proportioned to the texture of their fibres”.²⁴

With the development of chemistry, the issue of nourishing juices became the subject matter of a debate starting in the Age of Enlightenment. Certain authors defend the ‘humus theory,’ which states that most of the nourishment necessary for plants reaches them directly in solution, starting from the organic fraction of the topsoil. One of its main defenders, the German Albrecht Daniel Thaer (1752-1828), the creator of agronomic education, popularises the word ‘humus’ to specify this organic matter of the soil, whereas others rightfully maintain that plants draw their carbon from the air.²⁵



5

Turning the soil or not

Turning the soil has for a long time been the first act of preparation of the land, frequently depicted in paintings as with Pieter Bruegel the Younger, *Allegory of Spring* (early 17th century).²⁶ Intended to illustrate a French translation of *Liber ruralium commodorum*, an agricultural treatise written around 1304-1309 by Piero de’ Crescenzi of Bologna, a miniature (fig. 5) also shows the different activities which allow living forms to survive in the space: in a herb garden laid out in squares, six gardeners are at work; one of them, in the foreground, is digging a grassed plot using a tool with a wooden handle.

On the scale of a garden, the counterpart of the agricultural plough is the spade, consisting of a large flat iron blade with a cutting edge attached to a long wooden handle, the first tool cited in the treatises and a symbol of the profession of gardener, associated from the 14th century with images of Saint Fiacre, who during the 17th century became the patron saint of gardeners.²⁷ An author from the late 18th century specifies the forms that it can

5. Pietro de’ Crescenzi, *Le livre des prouffis chamepestres et ruraux*, Bruges, c. 1470, book vi. New York, The Morgan Library and Museum, ms. M.232, c. 157r.

19. SERRES 1996, p. 23.

20. SERRES 1996, p. 739.

21. “The basis for all sorts of plans, plants and gardening is to know the soil types well, so that with this expertise you can handle and work the earth with the required artifice, using opportunely both money and toil.” The author adds: “I leave the rest of my discussion to the Philosophers, who know better than I what needs to be said on the matter; I will only tell you what experience has taught me.” MOLLET 1652, pp. 1-2, 11.

22. See on this subject BENSUADE-VINCENT 2006.

23. BOYCEAU 1638, pp. 31-32.

24. LIGER 1706, vol. 1, p. 6.

25. With regard to this argument, see BOULAINÉ 1989, pp. 65 f., and the overview of PEDRO 2007.

26. On this picture, see ERTZ 1998.

27. See ALLAIN 2006, p. 80; LEMPEREUR 1992.

take: “The spade, in its simplicity, only allows some diversity according to its usages, or the soils where it is used. In sand the spade must be quite wide and slightly raised on both sides to hold this light soil better and to stop it sliding off. In strong, hard ground, it must be narrower to penetrate more easily and to lessen the burden on the arms, taking up less quantity of this heavier soil”²⁸

We note that it is a tool which appears most often with the hoe, intended for more shallow tillage and used since Neolithic times, for example in the iconography of Christ the Gardener illustrating the gospel episode of the *Noli me tangere*. In a panel by Bronzino (1561), whose composition is inspired by Michelangelo, which also served as a model for a painting by Pontormo, the focus seems to be placed in the foreground on the ground being touched by the bare feet of Magdalene and the Risen Christ, the second Adam according to the correlation established between the Old and the New Testament, by whom humanity will be saved.²⁹ The spade refers to the primordial function of man, to make the earth bear fruit.

The use of this tool was called into question in the late 20th century, however, by new knowledge of the soil. Indeed, scientists gradually revealed its living component and use of the microscope made it possible to study the invertebrates and microorganisms producing the humus, previously considered an inert chemical material. In 1875, the works on nitrification by Jean-Jacques Théophile Schloesing and Charles Achille Müntz encouraged research in pedology, an area of study that was already in the process of becoming independent,³⁰ and with this development agronomy turned a biological corner. Six years later, Darwin published his last work, dedicated to the role of earthworms in the formation of topsoil, showing that they play a truly essential rather than harmful role, as was thought previously.³¹ The upsurge of agri-chemicals and mechanisation, however, led to the positive role of humus on soil fertility being forgotten; the use of synthetic fertiliser became widespread after the Second World War. The development of soil ecology resulted in awareness, a century later, of the need not to disturb the fragile balance of these living environments³² and therefore to devise other ways of preparing and maintaining the land. André Grelin in 1963 thus patented a new tool. Unlike the spade, the broadfork allows the earth to be loosened and aerated without inverting it. This aids the root development of the plants and avoids upsetting the distribution between aerobic microorganisms, needing oxygen and located in the surface layer, and anaerobic microorganisms, being able to live only protected from air and proliferating in the lower layers. The 1950s in the United States saw the development of mulching, which consists of covering the soil with organic or mineral matter, as in the natural environment, so as not to leave the earth bare as in the natural environment. Nowadays some, like Claude and Lydia Bourguignon in France, campaign for agriculture finally to become respectful of soils depleted by overproduction,³³ and there are many handbooks that explain the best ways of looking after garden soils.³⁴

Among the gardeners who have turned to these alternative cultivation methods are Annick Bertrand and Yves Gillen in the gardens of Marais at



6. The gardens of Marais, started in 1975, Hoscas, Herbignac (Loire-Atlantique), one hectare: the layers of the garden are covered with mulch.

Herbignac, in Loire-Atlantique, where they settled in 1975 (fig. 6). They have a radical approach, stimulated by a genuine ecological conviction and based on real horticultural know-how. A self-raught gardener, Yves knew how to improve the acid, somewhat infertile peat-land soil by carefully studied additions of clay and compost. Following the above-mentioned principle of mulching, the soil is always protected by an abundant bed of dead leaves and vegetable debris, which limits evaporation and avoids the need for watering. Most of the food yielded by the orchard and the kitchen garden is produced according to the criteria of organic cultivation, which uses neither phytosanitary treatments nor chemical fertilisers. A wind turbine and solar panels also provide the small amount of electricity needed by the couple – no motor-driven machine is used for maintenance. Ticket sales for visitors to the garden, open to the public since 1996, are their only income. This completely self-sufficient existence, whose freedom was gained by giving up the superfluous, puts into practice traditional knowledge and tools to invent a lifestyle other than the polluting and energy-hungry western model.

In a book published in 2009, Annick gives an account of her experience and insists on this scrupulous approach to the earth, which recalls the philosophy of Karel Čapek: “You have to give to the garden before taking from it. Work the soil again and again... The soil is not a medium but a living organism on which we all depend, and this noble material deserves the closest scrutiny to understand it better.”³⁵ As a result, it is not tilled, “so as not to disturb the microorganisms, the prime auxiliaries of the organic gardener and the most precious”.³⁶

35. BERTRAND-GILLEN 2009, pp. 10-12.

36. BERTRAND-GILLEN 2009, p. 32.

28. LA BRETONNERIE 2003, p. 72.

29. Likewise “For as in Adam all die, so also in Christ shall all be made alive,” wrote Saint Paul (1 Corinthians 15, 22).

30. See BOULAINÉ 1989, pp. 88 f.

31. See DARWIN 1881.

32. On the current state of knowledge, see GOBAT-ARAGNO-MATTHEY 2003.

33. See BOURGUIGNON 2002. Also, among the growing bibliography on the subject, see DHENEZ 2014.

34. See for example BACHET-LECLERC 2009.

Now that gardeners have come to see soil as a living being, it commands respect, is worked by hand and collected on the palms, as illustrated by a photograph often shown on the Internet, as if to reverse the divine malediction following the Fall. Undoubtedly, with lots of gardeners, reference is even made to *biophilia*, this “innate tendency to focus on life and lifelike processes”³⁷ of which Edward Osborne Wilson talks and which is manifested, in many of them, by their search for close contact with what anthropologists call the nonhumans.³⁸ “To repair and care for the earth are our duties from now on,”³⁹ maintains Gilles Clément, the theorist of the planetary garden. And this almost ethical consideration of humus can be complemented by a sensual relationship, the intensity of which stirred Colette: “The dampness of the earth rises to my nostrils: a smell of mushrooms, vanilla, and orange... you might think that an invisible gardenia, feverish and white, is opening its petals in the darkness, it’s the very aroma of this dew-drenched night [...]. Mine the rich underside of the soil, the deep home of the worm, the winding mole corridor, mine, even deeper, the rock that has never seen the light; mine, if I want, the water trapped and black, buried at one hundred feet.”⁴⁰

37. WILSON 2012, p. 9.

38. See for example the survey on New-Zealander gardeners provided by FREEMAN et al. 2012, pp. 135-143.

39. CLÉMENT 1999, p. 116.

40. COLETTE, *La Retraite sentimentale* (Retreat from love, 1907), quoted in GOBAT-ARAGNO-MATTHEY 2003, p. 3. I wish to thank Philippe Mangeot, Monique Mosser and Laure Vermeersch for their friendly support and assistance.

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