



Unveiling the Plant Living in the Desert (Jer 17:6): A Multidisciplinary Approach

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Abstract: In the context of the study of plants in the Bible, some translation problems are related to the identification of the plant species referred to in the biblical text. One of the unresolved problems concerns the plant living in the desert of Jer 17:6, because the botanists' proposals have not been understood in the same way by the exegetes: it is not clear whether it is a tree, a bush or a shrub and to which plant species it refers. After presenting the general characteristics of the study of plants in the Bible, the research presents proposals for identification by botanists and how these have been received by exegetes. The study of the biblical context integrated with the dynamics of plant growth allows a better understanding of the two opposing metaphorical images of Jeremiah: the plant living in the desert and the tree that grows along streams. The analysis indicates a generic tree which, due to the difficult environmental conditions, cannot develop as such and remains smaller in size. The best translation is therefore a generic shrub, which also allows the different interpretations to be reconciled.

Keywords: Bible plants, tree metaphor, Jeremiah 17:5-8, opposing metaphorical images, forest interpretation

1. Introduction: Studying Plants in the Bible

The study of plants in the Bible is generally an area of research involving mainly botanists, agronomists or, in any case, experts in the Mediterranean and Middle Eastern environment, but also scholars in the religious sphere, as well as experts in medical and food sectors, or other professionals passionate about the topic. Therefore, the type of issued publication varies according to the professional experience of individual authors which may be of a popular or scientific nature. Historically, it has mainly been botanists and religious people who have dealt with the topic (for a historical review of major publications, see Musselman 2012, 3-12), but today studies are primarily conducted by environmental and natural experts. Usually, scholars of the Sacred Scripture draw on specific studies to try to translate botanical references as best as possible: the most useful publications for exegetical purposes are those helping to identify biblical terms referring to the botanical sphere, by even going so far as to indicate the plant species.

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The sources for studying plants in the Bible are various: the main one consists of dictionaries, guides and scientific articles published by botanists or other experts on the Mediterranean or Middle Eastern environment. In these sources it is possible to find the botanical species referred to in the biblical verses, but they are usually based on modern language translations of the Bible. Some authors also use other sources, such as Targum, Talmud, or Septuagint, as well as reference to other languages of Semitic origin or Jewish traditions or customs of neighbouring countries (see e.g. Zohary 1982; Musselman 2012). Evidently, the approach of these publications to the study of biblical plants is biological and not theological. Biblical dictionaries are another useful source: they can provide a synthesis between the exegetical and botanical areas. Especially in the past, biblical dictionaries supplied translations of botanical terms based on plant studies of that historical period, but which might not be up-to-date nowadays. Although the situation has improved in recent years, because some entries on plants have been completed directly by botanists, it is noted that some errors in biblical dictionaries are still being perpetuated (Musselman 2012, 12). Another source of investigation is exegetical research: the various translation hypotheses are very often found in Bible commentaries. In some cases, specific studies have also been conducted on the biblical context to confirm one plant species over other assumptions (see e.g. Tatu 2006, 106–14).

The study of these sources implies a multidisciplinary approach involving botanical issues and exegetical analysis: in this sense botany and exegesis are complementary for studying plants in the Bible. The positive effect of this approach is to provide a better understanding of the nuances of meaning of botanical terms and also to clarify and enhance the sense of the Scripture, particularly when vegetal elements are encompassed in metaphors and allegories. Nevertheless, there are issues that do not facilitate the exchange of knowledge between the two areas of study, botany and exegetics. Awareness of these problems makes it possible to use data from each area of study correctly, avoiding unpleasant misunderstandings. One of the main difficulties, as is well known, is that the Old Testament text is not stable, but susceptible to movement due to the presence of a plurality of witnesses (see e.g. Joosten 2010, 15–29) and other textual problems that force translation choices. For example, according to some authors in Isa 44:14 the term ארן (with the small final *nun*) indicates laurel (Zohary 1982, 120; Jensen 2020, 32), but the critical apparatus of *Biblia Hebraica Stuttgartensia* (Elliger and Rudolph 1997) marks the possibility that the word is ארז, cedar. Therefore, the plant species may change depending on the choices of textual criticism. Another difficulty is that it is not always possible to recognise botanical species because in the Bible there are also collective, generic or idiomatic names which do not help in the interpretation (Zohary 1982, 15). While in the past there was an attempt to speculate which plant species were being referred to, today the tendency is to comply more with the Masoretic Text (MT) and to also accept a non-specific name. Finally, it should be considered that research on plants in

the Bible is moving towards an identification of lists of plants mentioned in the Sacred Scripture, but they are under development and continue to be studied and updated. In this sense, Amots Dafni and Barbara Böck (2019, 11) revisited a list of medicinal plants from the Bible. Listing botanical species is also useful in the development of biblical gardens (Włodarczyk 2018, 230). Nevertheless, according to Zofia Włodarczyk (2007, 82), it is not possible to draw up a single list for the Bible, and only about half of the plant species were reported by all leading researchers between 1950 and 2000. Therefore, the Bible contains terms referring to both well-attested plant species, on which scholars and authors generally agree, such as the cedar of Lebanon (for more details, see Lamonaca 2023, 244–50), and other terms on which opinions differ. Usually, the greatest uncertainties occur on those names that are scarcely mentioned in the Bible and different opinions among researchers lead to a thicket of different translation proposals, resulting in disorientation.

A final remark concerns the interpretation of Bible plants by modern languages: there are different types of translations, depending on the purpose one wants to achieve and the type of professionalism of translators. Botanical authors use the scientific name of the plant species to uniquely identify the plant. When this is not possible, they indicate a genus or family plant: one of the most common cases where it is difficult to identify the species is the oak tree, and it is generally referred to as genus (see e.g. Musselman 2012, 104–6). Exegetical scholars point to the various translation possibilities but mainly enhance the biblical context. They also propose symbolic translations, which fit well with the metaphorical sense of the MT, or emphasise certain features of the Scripture, even deviating considerably from the literal meaning of the biblical text. For example, the root שבע, being sated, referring to trees (Ps 104:16), is interpreted by some scholars as being full of sap (see e.g. Alonso Schökel and Carniti 2007, 417; Beauchamp 2004, 185), thus indirectly alluding to the condition of the stem of tree and its diametrical dimension. The syntagma ארזי־אל (Ps 80:11), cedars of God, is translated by various scholars as “*cedri altissimi*,” very tall, towering cedars (see e.g. Alonso Schökel and Carniti 2007, 122; Lorenzin 2009, 301) or the “mighty cedars” (see e.g. Brueggemann and Bellinger 2014, 347). In the translation of Susanna’s appendix (Sus 1:54–59) Marco Settembrini (2019, 170–71) chooses to emphasise the wordplay between trees and the fate of the old men, without respecting the Greek botanical names.

The translation of plants in the Bible is also reader-dependent; therefore it varies according to the modern language used. In this sense, a native English reader’s perception of a certain kind of vegetation is not the same as that of a native Italian reader. Similarly, the translation of plant species from the Holy Land which are not found in the environment known to readers may be difficult because it is not understood. The diffusion of Biblical gardens around the world (Włodarczyk and Kapczyńska 2019, 850–51) and the planting in the past of certain species outside of their range such as the cedar of Lebanon (Hepper 2001, 198–216) has helped in the recognition

of the plant mentioned in the Bible, but has not solved the problem. Therefore, to facilitate understanding of the text, some plants have been translated using known species of European flora (Zohary 1982, 15).

One of the ambiguous cases in the Bible concerns the plant living in the desert, in a land of salt, cursed by God and unable to see good come (Jer 17:6). Proposals for interpretation are varied, and there seems to be no agreement as to whether it is a tree, a shrub, a bush or a scrub (see e.g. Carroll 1986, 350). Starting from the analysis of the proposals made for the translation of this plant, the aim of the study is to formulate a valid interpretation that reconciles botanical and exegetical requirements.

2. Different Interpretations for the Plant Living in the Desert

2.1. Botanical Dictionaries on Bible Plants

The translation of the term עֶרְוֹרָה (Jer 17:6) has been widely debated by specialists, particularly which botanical species it refers to. One indication that has marked the research since the 18th century was that the Arabic term *ar-ar* referred to juniper (Celsius 1748, 77). In the following century, John Hutton Balfour (1885, 28–29) identified it with *Juniperus sabina* L., known as savin, a species of juniper growing on rocky areas of the desert. But according to George E. Post and John Edward Dinsmore (1933, 801–2), the plant referred to by various authors in the late 1800s and also called *ar'ar* by the Arabs (the transliteration of the Arabic term changes depending on the author quoted) was *Juniperus oxycedrus* L., suggesting that there had been a misidentification. Harold N. Moldenke and Alma L. Moldenke (1952, 121–22) confirmed the observation of Post and Dinsmore: the plant of Jer 17:6 was cade juniper (*J. oxycedrus*), and in recent years other researchers have also endorsed this proposal (see e.g. Duke, Duke, and duCellier 2008, 226). In general *Juniperus oxycedrus* is a shrub or a small tree, growing in forests, shrub lands and coastal marine environments, at altitudes ranging from sea level to around 2200 m (Farjon 2013). Its current range includes the Mediterranean basin, with the coastal part of Syria, Lebanon, and northern Israel, but it is also present around the Black Sea, in the Caucasus area and in a few scattered populations in the Middle East (Caudullo, Welk, and San-Miguel-Ayanz 2017, 663–64). In Israel it is only reported in *Pinus* and *Arbutus* woodlands of the Upper Galilee (Danin 1992, 24), and it can reach 7 m in height (Maillat and Maillat 1999, 108). According to some authors, it can also be found in deserts and in impervious places promoting the idea of an isolated tree in the desert (Moldenke and Moldenke 1952, 122; Maillat and Maillat 1999, 108). But F. Nigel Hepper (1992, 64) disagrees with the cade juniper hypothesis due to its Mediterranean-type distribution.

The second proposal that has met with success among botanists is the Phoenician juniper (*Juniperus phoenicea* complex). The main representative who proposed this plant species was Zohary (1982, 117), but the identification was based solely on the Arabic name given to various juniper species, including Phoenician juniper. Furthermore, the author recognised that this species was not found in the desert of Israel, as it was required by the biblical text. Therefore, the hypothesis was that in the past the Phoenician juniper was present in the Negev, and single stands or solitary plants had survived in dispersed areas of the desert. The hypothesis that Phoenician juniper had a wider distribution than it does today was confirmed by the study of Montserrat Salvà-Catarineu et al. (2021, 5081–87). The research on fossil charcoal by Uri Baruch and Nigel Goring-Morris (1997, 257–58) also confirms the past occurrence of *Juniperus phoenicea* in the Negev Highlands. Other authors also point to Phoenician juniper (United Bible Societies 1980, 131–32; Hepper 1992, 64). In general, the Phoenician juniper is a large shrub or a small tree, up to 7–8 m high; growing on rocky and sandy shores, mainly below an altitude of 400 m, but it also reaches above 2200 m in the mountains. Its current range includes the Mediterranean basin and the mountains of the Arabian Peninsula at the southern limit of its distribution (Salvà-Catarineu et al. 2021, 5076–81). According to Hepper (1992, 64), Phoenician juniper looks more like a cypress tree than a juniper. It is reported in northern Sinai, where trees grow in the crevices of limestone outcrops and in wadis, in woodlands of Edom and Jordan, and in the western ridge of the Jordanian plateau, associated with other plant species (Danin 1999, 112–13). The botanical nomenclature of *Juniperus phoenicea* is currently under revision: botanists have recently considered Phoenician juniper as a complex of species, and the study by Małgorzata Mazur et al. (2018, 469–79) confirms that they are separate taxonomic positions. The Phoenician juniper growing in the Holy Land is now also identified as *Juniperus turbinata* Guss., one of the three species of the *Juniperus phoenicea* complex (the others are *J. phoenicea sensu stricto*, and *J. canariensis*).

Two other proposals for translation have been made, but they have remained in the minority, without finding favour with specialists. The first one is based on the translation of the Greek from the Septuagint and indicates a tamarisk (see e.g. Walser 2012, 78–79). This plant is identified as *Tamarix aphylla* (L.) Karst., an evergreen tree of arid environments up to 10 m high: it grows in wadis in desert areas of the Negev and the Dead Sea, and thanks to the depth of its root system it is able to survive in places with low rainfall and high salt content of soils (Grilli Caiola, Guarrera, and Travaglini 2013, 134). But according to Moldenke and Moldenke (1952, 122), tamarisks can be discarded among the translation possibilities for this verse of Jeremiah.

The final proposal was formulated by Hareuveni (1991, 67–72) who pointed to the apple of Sodom (*Calotropis procera* (Ait) R. Br.), and revisiting researches conducted in 1938 by his botanist parents. This indication is based on the biblical role

of the plant according to the Bedouin tribes of the wilderness of Jericho and the position of the leaves on the tree that resemble the palms of hands raised in prayer: this analogy is based on Ps 102 where the Hebrew term is used with the meaning of a derelict, helpless, destitute person (Ps 102:18). The plant is a small tree up to 3 to 5 m high, growing in oases with high temperatures, common in the Dead Sea areas and the lower Jordan Valley (Zohary 1982, 122; see also Danin 1999, 114–15). However, according to specialists this proposal encounters some problems. Solange Maillat and Jean Maillat (1999, 108) note that if one understands the Hebrew term in the sense of an isolated tree, then any tree or shrub growing in isolation could be appropriate. According to Zohary, the apple of Sodom is only mentioned in the Jewish War and not in the Bible and it would be a symbolic concept (Zohary 1982, 122).

In conclusion, most authors consider the plant of Jer 17:6 to be a juniper. The resulting image is that of a small tree growing isolated in inaccessible desert locations. However, the translation with juniper does not seem to be so safe among insiders: there are indeed a few discrepancies. Some authors, while indicating juniper as the main choice, express doubts about the identification of the plant species (United Bible Societies 1980, 131; Segura Munguía and Torres Ripa 2011, 69–71), pointing out the difficulties of interpretation. The Arabic term referring to junipers seems more generic: some authors (Maillat and Maillat 1999, 114; Musselman 2007, 280) report that in Morocco it also refers to tree thyme (*Tetraclinis articulata* (Vahl) Masters). Recently, other authors have not mentioned Jer 17:6 among biblical passages containing references to plants, and they prefer to treat junipers in a general way, either as a genus or as a hypothesis of translation for other Hebrew terms (Jensen 2020, 32, 37–41; Musselman 2012, 78–79). Furthermore, in antiquity, juniper may have been confused with other plant species (see e.g. Meiggs 1982, 410–20). The systematic of the genus *Juniperus* is actually controversial and still subject to verification (Grossoni et al. 2018, 314). Moreover, Zohary, as well as indicating juniper, also quotes Jer 17:6 for salt deserts in relation to *Suaeda* spp., known as sea blite, a plant growing in the desert, especially with saline ground (Zohary 1982, 150).

2.2. Exegetical Interpretations

The exegetical interpretations of certain Hebrew terms referring to the plant world, especially in the past, may have been misleading in the search for the botanical species (Musselman 2012, 2), but the information that can be gleaned from them is useful. In fact, the translation indicated by scholars can be considered a symbolic interpretation of a plant image: this allows one to understand the general idea that the scholar had, despite not having the necessary expertise in botany.

For the term of Jer 17:6 lexicons have generally accepted indications from botanists, albeit with some exceptions and for this reason the prevailing translation is

juniper. William McKane's (1986, 388–94) proposal to interpret Jer 17:6 in a different way from the vegetal sphere has not found favour among scholars. This translation, referring to a destitute man (Ps 102:18), was already assumed in the past (Keil 1880, 281–82). In general Hebrew dictionaries point out the two meanings for the term עֲרֵבָה based on the biblical reference: juniper referring to Jer 17:6 and helpless for Ps 102:18. Sometimes the meaning was combined with that of the term עֲרוֹעֵר (Jer 48:6), which, however, has textual criticism problems. Some lexicons also mention the translation with tamarisk (Koehler et al., 1994, 887; Reymond 1995, 323), while other dictionaries propose alternative translations, such as thistle (Alonso Schökel 2013, 656) and broom (Chávez 1997, 334): these last two proposals are an attempt to make the image of a plant understood using plant categories familiar to readers. In this sense they can be considered symbolic images and not botanically correct.

Despite dictionary entries, commentaries generally prefer to remain generic, and in this case the prevailing translation is shrub or bush. John Goldingay (2021, 408–9) reports that tamarisk and juniper are unlikely because they are well adapted to the environmental conditions of the desert. In recent years, the translation proposed by botanists with juniper has also become established, but scholars often mean a bush or a low shrub (see e.g. Holladay 1986, 492; Kaiser and Rata 2019, 127, 129–30), and not a small tree. Septuagint and Vulgate point to the tamarisk. Because of the doubts of translation, some scholars report a few hypotheses among those proposed by botanists, but the best proposal seems to be the one formulated by Lundbom: after presenting all the different translation possibilities, albeit without a critical comment, the scholar prefers to translate with juniper and concludes that it is “a scrubby tree in the wilderness.” (Lundbom 1999, 783). This translation allows a synthesis of the different hypotheses, in particular by combining the image of the tree with that of the shrub.

The image derived from exegetical studies is therefore that of a shrub or bush growing in the desert, different, however, from the image proposed by botanists compatible instead with a small tree. The plant adopted seems to be the juniper, but without going so far as to indicate the species, while the hypothesis of the tamarisk is also less frequently accepted. In any case, caution prevails among the exegetes, as they do not go as far as a specific translation, preferring instead a generic botanical term. The different interpretations between botanists and exegetes raise doubts, as the metaphorical image varies depending on the translation: is the man cursed by God compared to a shrub or to a tree? Is the comparison with the man blessed by God between two trees or between a tree and a shrub? The study of the biblical context helps to answer these questions.

3. Biblical Context

The passage in Jer 17:5–8 describes a wisdom-type image that contrasts the fate of the wicked who trusts in man with that of the righteous who, on the contrary, trusts in God; in reality, blessing and curse are covenant categories and not sapiential: according to Gianni Barbiero (2012, 79), the two categories are used here in a covenant context. This passage is often related to Ps 1:3 where the righteous is compared to a tree planted along waterways, while its proximity to Ps 92 is less frequently reported. Other passages with which Jer 17:5–8 has been associated are Ps 107:33–43, the allegories of the prophet Ezekiel in Ezek 17:5–10; 17:22–24; 19:10–14 (for these and further suggestions see Carroll 1986, 351–53; for other formal antitheses see Allen 2008, 199). The structure of Jer 17:5–8 is constructed as an antithesis between the cursed man and the man who is blessed, giving rise to two opposing metaphorical images based on the similarity between man and trees. This type of structure, reported by various scholars, was made explicit by Lundbom (1999, 781–82): the passage is divided into four stanzas, two describing the cursed man, while the other two identify the blessed man. The division into stanzas is based on the repetition of the following expressions: “Cursed / Blessed is the man who trusts in [...]”; “For he shall become like [...]”; “It will not see / fear when [...]” (Lundbom 1999, 782). The two parts become equal if a colon is assumed to be missing in v. 6b.

On the basis of this oppositional structure, it is possible to derive some information by comparing v. 8 with v. 6. If the blessed man is characterised by an abundance of water, the cursed man on the contrary lives in arid places with an absence of water. If the man who trusts in God is not afraid of the dry season, because the water reserves enable him to overcome difficulties, the other has drought as a fearful habitual friend. If the blessed man continues to bear fruit without ceasing, the cursed man will live in a saline environment characterised by the difficulty of development and a consequent strong reduction or absence of fruit production. Similarly, if the blessed man is compared to a tree, it can be inferred that the cursed man is generically compared to a non-tree. Therefore, the non-tree category can be interpreted in four ways:

1. The definition is taken in a narrow sense to mean a plant with a non-arboreal habit, such as a shrub, bush or herbaceous plant.
2. Another interpretation considers the developmental capacity of the plant: it is a tree that cannot fully develop under difficult environmental conditions and therefore assumes a reduced size or a different shape. A common example is the vegetation growing on the coast, which due to wind and sea aerosol takes on prostrate forms.
3. The comparative term רֹשֵׁב (v. 8) is not to be considered as a tree, but as a generic plant; therefore, the translation would not indicate a plant. But this interpretation had already been discarded earlier, because it did not find favour with scholars.

4. Non-plant should be understood as the loss of some of the plant characteristics that keep the plant alive. Based on external appearance, one of these characteristics is the loss of leaves, but also a pronounced form of decay evidenced by dryness of plant tissue. This interpretation has been proposed by some scholars when they mean a bare or naked shrub (Carroll 1986, 350; Barbiero 2012, 77, 81; Rossi 2022, 902), hence leafless or decaying.

Therefore, the interpretation of the non-tree category has three possible solutions, looking at the external form of the plant, but based on three different conditions: the first hypothesis is based on the plant species, which is not a tree; the second hypothesis is based on the possibilities of development and growth, it is a tree, but fails to establish itself as such; the fourth hypothesis is based on the physiological state of the plant, which shows a state of decay, typical of diseased plants. By analysing the two plant metaphors, the most suitable solution can be derived.

The man who trusts in God (v. 8) is compared to a tree through three elements: roots, leaves and fruits. The order in which the plant elements are mentioned indicates a process of development and growth: first the roots stretch out towards the water, thanks to this the leaves of the foliage are green, hence indicating full plant activity, which in turn allows the fruit to be produced without interruption. On the contrary, the man who trusts in himself (v. 6) is compared to a plant, but without mentioning the plant elements: the text cites neither the situation of the root system, nor the foliage, nor the fruits, and remains silent on any other plant element that might characterise the metaphor. In this case, the biblical text has a gap and the only information given concerns the place and environmental conditions where the plant lives (in the plant metaphor, the fate of the wicked can be linked to the place where they live, see e.g. Job 8:18; Ps 37:35–36; Ezek 17:3–10; Zech 11:1–2). Therefore, the man cursed by God does not grow, does not develop and does not bear fruit. It follows that the interpretation of the non-tree category for the plant living in the desert is based on its capacity of development and growth: it is a tree that, due to the adverse environmental conditions, is unable to develop as such, appearing smaller in size or as a shrub. The fourth hypothesis, which involves the translation with a bare or naked shrub, is valid if the plant elements are considered in isolation and not all together. In this case, it could be applied to both leaves and fruits, but it is difficult to image a plant without a root system living in those environmental conditions. Moreover, studies on halophytic (salt-tolerant) plants tend to consider the plant as a whole (Poljakoff-Mayber and Lerner 1999, 125–52).

The location of the plant living in the desert is identified by various scholars as the area around the Dead Sea (see e.g. Voth 2009, 274; Goldingay 2021, 413), also due to the presence of generic expressions such as salt land and scorched places. The term הַרְרִים, parched places, is a *hapax legomenon*, but the root הָרַר, to burn, could mean a place burning for the sun (Holladay 1986, 492). The Septuagint uses ἀλίμοις,

seaside (Muraoka 2009, 26), favouring the indication of the Dead Sea (see also McKane 1986, 390). The term עֵרְבָה is generally translated as steppe: although in Hebrew the article accompanying the name may indicate a wider area, from the Jordan valley to the Gulf of Aqaba, the Hebrew term takes on a generic meaning when combined with other terms such as desert (Seely 1992, 321–24). Other scholars prefer not to comment on the location, maintaining a generic profile, while other proposals were not followed up (for other location proposals see Holladay 1986, 492). The described environment requires an ecological adaptation of plants to survive in such high salinity locations, typical of halophytic vegetation. However, the interpretation of the category “non-trees” leads to the exclusion of this type of plant, in favour of plant species that seek to survive outside their optimal range, under adverse environmental conditions. Furthermore, laboratory studies show that salinity inhibits plant growth, in particular affecting shoots more than roots (Poljakoff-Mayber and Lerner 1999, 129–31), and confirming that plants develop and grow less under these difficult environmental conditions.

The oppositional comparison between the two arboreal metaphors reveals another detail: the root שָׁתַל describes the tree planted by the water (v. 8), while no indication is given for the plant in the steppe (v. 6), keeping silent about any kind of action. Various scholars understand this verb with the sense of transplanting (see e.g. Holladay 1986, 492; Miller 2001, 708; Goldingay 2021, 408), particularly in relation to Ps 1 (see also Ezek 17:22–23; 19:10–13), emphasising a nuance of meaning: transplanting indicates a displacement, a change due to a different initial place of growth, the starting growth period of the tree took place in another location (Barbiero 2012, 83–84; Lamonaca 2023, 251–52). Applying the meaning to the metaphor, it follows that the blessed man is open to change; he is thus willing to be transplanted into better soil. The change of soil from which nourishment is absorbed refers to man’s inner conversion, hence the decision to walk in God’s ways. In contrast, the man cursed by God does not move, besides not growing, he is not open to change, perhaps convinced that what he has is the best place for him. This antithesis between the blessed man and the cursed man can also be understood as the opposition between life and death (Brueggemann 2015, 161). The result is a refusal to follow God’s ways and to rely on the arm of man. Therefore, the absence of movement in the cursed man is not only a lack of development and growth over time, but also a refusal to move: if the righteous man stretches out his roots towards the water, the cursed man is still. According to Allen (2008, 200), “the antithesis has the force of a missed opportunity” (Jer 3:19–4:4). The biblical context emphasises that the cursed man is dependent on the environment in which he lives: in the metaphor, the severely limiting environmental context is predominant over the plant, which is forced to adapt to the difficult conditions. In other words, man chooses to be a slave to his environment, unable to free himself: relying on his own strength, man also becomes a slave to it because he does not recognise the good (Isa 30:1; Jer 4:22; Ps 146:3).

Therefore, the metaphor focuses attention on the comparison between the two vegetation dynamics. The biblical text emphasises the development of the plant that represents man blessed by God, while it shows the absence of development for man who, rejecting God, trusts only in himself. The difference lies in the soil in which the plant decides to grow: abundant water on the one hand, heat, salt and drought on the other. The discriminating factor between the two plants is therefore the place, the type of soil in which they sink their roots to absorb the nourishment for their life (Ezek 17:23; 19:13; Ps 80:10; 92:13–14): God blesses those who rely on him, but those who reject him live in hardship, a life far from God, a life without that life-giving water, a non-life. The plant species describing the accursed man is therefore of secondary value, because the important thing is to preserve the sense of the antithesis between the two places to live. In this respect, the text favours a generic interpretation of the plant living in the desert. Also the remark on the wordplay (Carroll 1986, 350), linking the plant name עֲרֵבָר with אָרוּר, cursed (v. 5), goes in the direction of a generic and non-specific translation. In favour of this interpretation is also the fact that in the biblical passages that have been juxtaposed with Jer 17:5–8, the tree metaphors used for comparing the fate of the righteous and the wicked specify the plant species of the negative term when the positive term is also specified; in other cases the negative plant term of comparison remains generic. For instance, in Ps 1, the righteous is likened to a tree planted along streams, while the wicked are like chaff, one of the products of grain processing. In Ps 92 the righteous is compared to the cedar of Lebanon and the palm tree, while the wicked are like grass. In Ezek 17, both the vine that will dry up and the cedar of Lebanon that will become a magnificent tree are mentioned. Even in other biblical passages, which cannot be directly connected with Jer 17:5–8, the botanical part with a negative value is specified when the positive part is also specified: in 2 Kgs 14:9, both the cedar of Lebanon and the thistle, crushed by a wild beast, are mentioned; in Jdg 9:8–15 the horticultural plants of olive, fig and vine are mentioned together with the bramble (*Ziziphus* tree) and cedars of Lebanon, burnt by fire. Therefore, since the positive term is generic, the negative term will also be generic. Consequently, the best translation for the plant living in the desert is “shrub,” which maintains the antithesis relationship with the tree representing the blessed man. The term “shrub” indicates a generic tree species that, in the difficult environmental conditions described in the text, fails to develop as a tree and remains in a small and stunted condition. This interpretation also allows the hypotheses of botanists and exegetes to be reconciled.

4. Plant Species Hypothesis

A further requirement to enable a better understanding of the metaphor, however, is to attempt to identify some plant species that may fit the biblical text of Jeremiah: these are evidently hypotheses that can explain the generic term “shrub,” based on the biblical and botanical characteristics highlighted. The main difficulty lies in the fact that the Dead Sea area has undergone changes in vegetation over time due to various causes, such as human action, climatic fluctuations and earthquakes (for further details, see Neumann et al. 2009; Neumann et al. 2010; Litt et al. 2012). Therefore, the environmental situation today may not correspond to that of the past.

The plant species that seems to best fit the description of the biblical text is the tamarisk, also based on its current distribution. Trees of *Tamarix aphylla* are occasionally reported in sandy areas and in the wadis that cross them, covered by sand mounds, with a maximum height of 5 m (Danin 1999, 114), about half their potential. In reality, there are also other tamarisk species with a distribution compatible with the Dead Sea area and reported by other authors (Grilli Caiola, Guarrera, and Travaglini 2013, 134), such as *T. nilotica*, common in southern Israel, *T. palaestina* and *T. tetragyna*. Other low frequency tamarisks, such as e.g. *T. amplexicaulis*, on the other hand, seem too well adapted to saline soils, even in hot desert areas (Danin 2004, 214–16), to be considered for the text of Jeremiah. In favour of the interpretation of *Tamarix aphylla* are the numerous finds of charred wood in the Northern and Eastern Negev, confirming its presence as early as the 10th–8th centuries BCE (Liphschitz and Waisel 1973, 31–34).

The other proposed plant species is the Phoenician juniper; unfortunately its current absence in the Dead Sea area (Danin 2004, 21) compromises its evaluation. According to the study of Baruch and Goring-Morris (1997, 253), the region of the Central Negev Highlands is very similar to two areas where this juniper is present today: the neighbouring regions of Edom and northern Sinai. A recent study on Sinai measured the mean height for Phoenician juniper trees much lower than its general tree heights (El-Bana et al. 2010, 172–73). Together with findings in the past, this could be a confirmation that Phoenician juniper is also potentially a plant species compatible with the biblical context. In contrast, *Juniperus oxycedrus* seems unsuitable due to its greater moisture requirements (Baruch and Goring-Morris 1997, 256; Farjon 2013).

Tamarix aphylla and *Juniperus phoenicea* are also plant species that are not specialised for the saline and desert environment (for a descriptive ecological record of the environments in which they vegetate, see Danin 2004, 21, 215); therefore they are two trees that can survive in border environments. Moreover, the leaves of tamarisk and juniper are filiform and resemble the image of a bare shrub, but the plant is alive and retains its peculiarities.

Conclusion

The study is a model for analysing doubtful cases of the translation of plants in the Bible, integrating botanists' proposals with the analysis of the biblical context. Starting with translation suggestions that arose in the botanical field, the study analyses how they were received by exegetes. In-depth exegetical study is essential to understand the best translation among those proposed.

In the case study (Jer 17:6), the interpretation of the exegetes differs from that of the botanists: the scholars mainly consider it to be a shrub or a bush, while the botanists understand it to be a small tree. The analysis of the biblical context indicates a generic translation as "shrub" for the plant living in the desert: it is a plant that potentially is a tree but due to adverse environmental conditions cannot develop as such. This interpretation allows the two points of view to be reconciled. In any case, lately there seems to be a tendency in botanical studies of biblical plants not to indicate the botanical species of Jer 17:6 and consequently to accept a generic translation. The hypotheses formulated by botanists (tamarisk and juniper) are both possible, although tamarisk seems more likely on the basis of currently available data. The two species compatible with the biblical text are *Tamarix aphylla* and *Juniperus phoenicea*.

The comparison of the two metaphors describing the cursed man and the man blessed by God helps to shift the focus from the species of the plant living in the desert to the place where the two trees live: a fertile soil irrigated by water against a sunburnt salt land. The type of natural environment expresses man's ability to trust in the Lord or his reticence: in this case, man trusts in himself, rejecting God's abundance and fertility. The soil from which trees get nourishment through their roots expresses the presence or absence of God in man's life. But the soil is closely linked to climatic aspects; therefore God can also intervene in human life through wind, sun and other atmospheric phenomena and change the human situation (Isa 40:24; Ezek 17:10; Job 8:16–18). The two different natural environments of Jer 17:5–8 show how man's choice to trust or not to trust God has consequences not only on the fertility of the soil from which to take nourishment, but also on the environmental and climatic conditions that enable development. In other words, man's choice has consequences for the living environment: fertile or sterile, able to bear fruit or unable to generate.

The multidisciplinary approach to the biblical text also makes it possible to highlight how man who trusts in himself is blocked in his development, static and firm in his position, clinging to what he has because he is incapable of recognising the good. The results obtained from comparing the two different development models of man who relies on God and man who relies on himself, together with botanical data, show the usefulness of this approach, in which exegetical analysis is combined with data from environmental disciplines.

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