

Flavius Josephus' *saccharon*: Aramaic *šakronā*, Akkadian *šakirū* and Greek *huoscúamos*

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[One of the most detailed descriptions of the Aramaic plant *šakronā* transcribed *saccharon* (σακχαρόν) is included in the account about the vestments of the Jewish high priest the 1st century CE historian Flavius Josephus gives in his *Judean Antiquities*. The plant is called in Greek *huoscúamos* (ὄσ δὲ κύμον), identified with henbane (*Hyoscyamus* sp.), and Josephus uses its shape to describe the elaborate headgear of the high priest. This contribution compares the description of Josephus with the information about the plant according to Dioscorides' *De materia medica* and Akkadian sources according to which it is called *šakirū* and addresses the importance of the context for identifying ancient plant terms.]

Keywords: Josephus Flavius, Dioscorides, Akkadian plant descriptions, henbane (*Hyoscyamus niger*), ashwagandha (*Withania somnifera*).

1. Introduction

Flavius Josephus, born in Jerusalem as Yosef bar Mattathياهو (37–ca. 100 CE), wrote the 20 volumes of his *Judean Antiquities* (*Ant.*) during the year 94-95.¹ An aristocratic chief priest himself he gives an elaborate description of the high priest's vestments in book 3.151-180, 184-187.² Far from being a simple report on the priestly garment's unique beauty and preciousness, Josephus provides an interpretation of each part of the attire as a model of the cosmos.³ The communicative role of dress as a marker of extraordinary beings goes back to ancient Mesopotamia where especially the use of gold "endowed these garments with the aura of sacredness".⁴ According to Josephus the high priest wore several layers of clothing: a fringed linen tunic, breeches, a tunic of bluish purple colour (presumably made of wool) interwoven with gold and adorned with a fringe of alternating golden bells and pomegranates, a sash, a short cape with gold embroideries, a breast-

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1. See Mason 2003: xvi-vxi fn. 1.

2. See e.g. the discussion of Robertson 1991: 221-237; Sanders 1992: 92-102; or Hayward 1996: 149-151.

3. See e.g. Swartz 2012: 33-54; Weissenrieder 2017; Pena 2021.

4. Oppenheim 1949: 191.

piece containing twelve precious stones, a cap and a golden crown. As for the headgear it comprised a cap made in the same fashion as that of all priests to which another cap or turban with bluish purple embroidery was stitched. A golden crown that consisted in three forged rows encircled both. Apparently held by the crown and ranging from the neck to the front was the last piece of the headgear and this is described as follows:

“A golden calyx, fashioned after a plant called by us *saccharon* (σακχαρόν), sprouted upon it. Those of the Greeks who are skilled in cutting roots call it henbane (ύόσ δὲ κιάμον).”⁵

The term *saccharon* (σακχαρόν) corresponds to Aramaic *šakronā* and belongs to the small corpus of new loan words Josephus introduces into Greek, possibly to set up Aramaic as the language of the priests.⁶ It is a hapax and apparently an *ad hoc* creation of Josephus. Josephus’ account provides an accurate plant description displaying his profound knowledge of the Judean flora.⁷ This description is couched in terms to the plant’s similarity to five other plants with which *saccharon* is compared. In this regard one could speak of an early example of plant morphology in that the physical form and external structure is compared with that of other plants. In lieu of drawings, morphological plant comparisons help to identify plants not only in antiquity but also today.

Such detailed descriptions provide precious information for the difficult identification of ancient plant names and help corroborating or correcting suggestions that are based on linguistics criteria only. The discussion is meant to help clarify the value of the linguistic approach and to underscore the importance of the study of the context in the identification of Aramaic *šakronā* and Akkadian *šakirū*.

2. Linguistic approach

It is useful to differentiate in the lexical study of terms between the search for affinities between the different Semitic languages and the etymological study of names. Etymology provides the meaning or translation of the term, by contrast comparative Semitics gives clues about the identification of a plant name.

2.1. Comparative linguistics

Akkadian and Aramaic terms are usually identified by transferring the identification of a plant term sharing the same root in other Semitic language, commonly Arabic, Syriac and/or Hebrew. The Arabic cognate of Aramaic *šakronā* and Akkadian *šakirū* is *saikurān* or *saikarān*. This term is translated by the dictionaries of Classical and modern written Arabic with two different plants, viz. henbane (*Hyoscyamus niger*)⁸ and ashwagandha or winter cherry (*Withania somnifera*).⁹ However,

5. *Ant.* 3.172, the translation follows Feldman 2000: 277-278. The Greek plant term is written ύόσ δὲ κιάμον instead of the common ύόσκούαμος. See for the botanical description of the headgear Feliks 2002.

6. See Weissenrieder 2017: 168.

7. See for the study of plants mentioned in Flavius Josephus’ writings Neuburger 1919: 67-70; Kottek 1993; Kottek 1994.

8. Wehr 1976: 448.

9. Lane 1867: 1392.

both names received more names in Arabic. The botanists A. Al-Rawi and H.L. Chakravarty record in their study on medicinal plants in Iraq for *Hyoscyamus niger*, black henbane, the current names *sukrān* and *banj barry*, and for *Hyoscyamus albus*, white henbane, the name *banj*. As for *Withania somnifera* they list the term *samm al-ferakh* which is a descriptive name referring to the plant's growth meaning literally "sprouting plant".¹⁰ The Hebrew cognate *šikron* refers to *Hyoscyamus niger*.¹¹

The ambiguity of the plant name is due to the fact that both henbane and ashwagandha possess narcotic properties and are or were used similarly.¹² In contrast to contemporary and modern folk plant taxonomy the explanation of ambiguous terms in ancient cultures is limited. Only synonyms and describing adjectives help to differentiate species called by the same name. An illustrative example is the ancient Greek name στρύχνον which refers to a soporific plant.¹³ Classified as κηπαῖον "growing in gardens, garden-" it is thought to refer to hound's berry (*Solanum nigrum*), when described ὑπνωτικόν "somniferous" it refers to ashwagandha or winter cherry (*Withania somnifera*), and followed by μανικόν "maddening" to thorn apple (*Datura stramonium*).¹⁴

According to a comparative linguistic approach the Aramaic and Akkadian terms could stand for two different plants.

2.2. Etymology

Plant names have often a meaning that refer to the properties of plants; names that can be translated are commonly those which are most important for humankind. The motivation for naming plants can be divided into three groups: (a) environmental characteristics taking into account the blossoming period or harvest time; (b) physical properties alluding to shape, fragrance or colour; (c) functional properties such as the usage of the plant.¹⁵

In his discussion of *Hyoscyamus* Löw 1924: 359 refers to the etymology of the plant name *šakronā* connecting it to the root *škr* "to become intoxicated, drunken"; the verb is understood as nominal derivation from *šakrā*, a designation for an "intoxicating drink not made from grapes".¹⁶ According to Löw's references this secondary explanation or reinterpretation as plant that intoxicates or makes sleepy was current among Syriac lexicographers. Also the Hebrew term *šikron* has two meanings, one is black henbane, the other denotes drunkenness or intoxication;¹⁷ and the Akkadian term *šakirū* can be associated with the verb *šakāru*, "to get drunk, inebriated", and *šikaru* "beer".¹⁸ The plant term was borrowed into Sumerian (*šakira*) either directly from Akkadian or from another early Semitic language.¹⁹ The meaning of the name, that is its etymology, is not

10. 1964: 53-54 and 98.

11. Dafni & al Khatib 2020.

12. For the confusion of Arabic *saikarān*, henbane, and Arabic *saukarān*, hemlock, see already Löw 1924: 361.

13. Aliotta et al. 2005: 306-308 give the following identifications *Solanum nigrum*, *Cucubalus bacciferus* and *Solanum dulcamara*.

14. According to Beck 2017: 276-278 (Dioscorides 4.70-73; Wellmann 1906: 228-232). See also Fitch 2022: 198-199.

15. See e.g. Debowiak & Waniakowa 2019: 174.

16. Sokoloff 2009: 1559.

17. Koehler, Baumgartner & Stamm 1994-2000: num. 9605 and see the discussion to no. 9606.

18. Reiner 1989: 157 s.v. *šakāru*; Reiner 1992: 420 s.v. *šikaru*.

19. For Akkadian and early Semitic loanwords in Sumerian see Civil 2007 and Falkenstein 1960; for the discussion of the Sumerian term see Böck 2021: 128-129.

sufficiently distinctive as to suggest an identification. The name was possibly motivated by the soporific effect of either henbane and/or ashwagandha.

3. Contextual approach: Plant descriptions

As one name may refer to several species of plants and one plant may have more than one name, a linguistic approach alone does not lead to a clear identification. The methodology for identifying plants should therefore consist of a combination of comparative Semitics, etymology, the study of the texts in which the plant name is attested, the analysis of the uses ascribed to the plant and the history of the flora of the region.²⁰

Josephus provides two essential clues for the identification, first by referring to the Greek name of the plant and, second, by providing a morphological plant description. The Greek term (ὕος δὲ κυάμιον for ὑοσκύαμος) belongs to the names that can be identified with certainty; it refers to *Hyoscyamus* sp.²¹ Some centuries later Sergius of Rēš'aynā would choose the same equation of *šakronā* in his translation of Galen's *On the Powers of Simple Drugs* into Syriac. Galen treats the plant ὑοσκύαμος in book 8.20.4;²² the heading of the subchapter providing the plant name is preserved in the Syriac manuscript British Library Add 14661 fol. 56b.²³ It gives the reproduction of the Greek term in Syriac written *huasquamos* and the Aramaic name proper: *šakronā*.

In addition to the correspondence between the Aramaic and Greek plant name Josephus offers a morphological plant description. Given the importance as medicinal plant it may not come as a surprise that Josephus was well acquainted with the appearance of *šakronā* (σακχαρόν), henbane. However, he was not the only writer who used this comparative method. His (more or less) contemporary, Dioscorides, is well known for his plant descriptions, a method used centuries earlier by Assyrian and Babylonian healing experts as the Akkadian text material shows.

3.1. Josephus Flavius

According to Josephus *saccharon*

“is a plant that often grows to a height of more than three spans and has a root similar to a turnip and leaves similar to those of rockets. However, from its branches it causes a calyx to sprout adjacent to the twig, and it envelops it in a husk that separates itself by itself from it when it has begun to turn into fruit; and it is similar to a mixing bowl in contour. I shall this, too, for those who have not become acquainted with it. If a ball has been cut into two, it has, around the stem, the other incision, growing rounded from the root. Then coming together little by little, with an indentation becoming splendidly curved, it widens, in turn, gently at the rim, having incisions similar to the navel of a pomegranate. Its hemispherical lid is precisely fixed on it so that one might say that it has been made exactly round, and it has tips surmounting, which I said arise very similarly to a pomegranate, thorn-like and terminating in an absolutely sharp point. Beneath the lid

20. The research for the development and application of this novel and interdisciplinary methodology was funded by the three consecutive research projects I-LINK1007, PGC2018-097821-B-100 and PID2021-125678NB-I00. The collaborative effort has led to the identification of medicinal plants in cuneiform texts for which see Böck, Ghazanfar & Nesbitt 2023.

21. Scarborough 2012: 248.

22. Kühn 1821: 147-148 δ.

23. Merx 1885: 300 l. 4.

it protects its fruit through all of the calyx, being similar to the seed of the plant *sideritis*, and it produces a flower that can be compared with the broad petal of a poppy."²⁴

In botanical terms, Josephus describes two major organ systems of the plant, viz. the root system and the shoot system consisting of the stem and leaves. In addition, he provides details about the flower and seeds. The root is compared to *bouniás* (βουνιάς), French turnip (*Brassica Rapa* L. or perhaps *Brassica Napus* L.). The leaves look like that of *eúzōmon* (εὐζωμον), rocket (*Eruca sativa*), the calyx like a pomegranate (*rhóa*, ῥόα), the petals like those of a poppy (*mēkōn*, μήκων), and the seeds like those of *sidērītis* (σιδηρίτις), *Sideritis syriaca* or *hirsute* (according to Galen *Achillea magna*).²⁵

3.2. Dioscorides

About 40 years before Josephus would write the *Judean Antiquities*, his contemporary and likewise Roman citizen Pedanius Dioscorides of Anazarbus (ca. 40-80 CE) redacted the *De materia medica*. The five books comprise healing remedies of mostly vegetal and to a smaller percentage of mineral and animal origin.²⁶ In book 4.68 Dioscorides describes ὑοσκύαμος as follows:

“It is a shrub that sends out thick stems and its leaves are wide, oblong, split, dark, and rough. The flowers, which are fenced in with little disks, grow on the stem in a row, just like the flowers of the pomegranate; they are full of seed like the flower of opium poppy. There are three kinds of this plant: for one kind has somewhat purple flowers, leaves like bindweed (μίλαξ),²⁷ black seed, and the calyces are hard and thorny; another has quince-yellow flowers, softer leaves and capsules, and yellowish like hedge-mustard. Both these plants cause madness and are soporific; they are difficult to use. But the third one is highly useful for treatments, being very mild, fatty, soft, and downy, having white flowers and the seed is white; it grows by the sea and among ruins.”²⁸

After the description comes a list of the medicinal application of the plant according to plant parts used.

3.3. Akkadian plant descriptions

Comparable to Josephus' and Dioscorides' morphological reports are the Akkadian plant descriptions collected in the *Šammu šikinšu* treatise, literally “On the appearance of the medicinal plant”. So far 15 cuneiform manuscripts are known; none is completely preserved. The cuneiform texts date to the 1st millennium BCE and come from Assyrian and Babylonian libraries.²⁹ The texts offer descriptions of about fifty plants in comparative terms. A typical entry opens by comparing the plant's general appearance with another plant, which is followed by a description or comparison of the seed, leaf, fruit, root, flower and growth with that of other plants. The entries

24. *Ant.* 3.173-177; the translation follows Feldman 2000: 278.

25. See for the identifications Kottek 1993: 99-100 and Kottek 1994: 129-130; see also Feliks 2002.

26. See for the study of the book Riddle 1985.

27. Possibly the same as μίλαξ λεία, Dioscorides 4.143 (Wellmann 1906: 286, 143.8), identified with Great bindweed. The leaves of bindweed are compared to that of ivy.

28. Beck 2017: 275; Wellmann 1906: 225, 4.68.1-2, 1-12.

29. See the edition of Stadhouders 2011.

close with a reference to the principal ailments for which the plant was used and a short indication how the medicine was to be prepared and administered. As evident from this description, the structure and content of the Akkadian entries is very similar to Dioscorides' and Josephus' accounts.

The degree of usefulness of such morphological plant descriptions depends, of course, on how much is known about the plants used for comparison.

Šammu šikinšu includes a paragraph on the plant *šakirû* but the part of the morphological description is not preserved:

“The plant looks like ... *šakirû* [is its name]”.³⁰

However, *šakirû* is used in another entry as comparative plant. The leaves of *imhur-ašra* (literally ‘it-faced-twenty’), possibly black bryony, look like those of *šakirû*. As black bryony has heart-shaped and somewhat 3-lobed leaves, the leaves of *šakirû* should look similar. It should be noted that the leaves of the purple-coloured species of Dioscorides' ὄσκούαμος resemble those of bindweed (μῦλαξ) which are heart-shaped. The entry about *imhur-ašra* reads:

“The plant creeps over the ground like the colocynth, the leaves look like that of henbane, its berry is red. It is called [‘it-faced-twenty’ or *naphu*].”³¹

Further information about *šakirû* can be deduced from the alternative names it received. In the plant glossary *Uruanna-maštakal* it is called or described as follows:³²

- “A shoot of a kind of reed that grows out of a wall – *šakirû*”³³
- “Red bryony of the field – root of *šakirû*”³⁴
- “Black plant”³⁵
- “(Plant with) yellow flower(s)”³⁶
- “Plant of the sun god Šamaš”³⁷
- “‘Chameleon-tree’ on whose surface grow thorns – *šakirû*”³⁸

I suggest that these names serve to characterize distinctive features of the plant. Accordingly, *šakirû* grows close to walls like the shoot of reed. The root is similar to that of red bryony; the plant or parts thereof are black, it has yellow flowers and thorns or spikes and it looks like or has feature of a chameleon.

30. Gurney & Finkelstein 1957: 93 ll. 35'-36' [U₂ GAR-š_u ...] ... [...] / [x] 'x x x x x' U₂.ŠAKIRA 'x x' [... MU.NI].

31. Gurney & Finkelstein 1957: 93 ll. 63'-64': [*šammu šikinšu kīma*] *irri ana pān qaqqari illak arātūšu kīma šakiri inibšu sām šammu šū* / [*imhur-ašra* ^{na}] *p̄hu šumšu*.

32. For a short description of the glossary see Böck 2015: 22-25.

33. Thompson 1902: 32 K.4180B obv. 9: *habbūr qān šalāli ša ina ig[āri ašū]*.

34. Köcher 1955: 22 ii: *šammu imhur-līm ša eqli* – [*šuruš*] *šakiri*.

35. Köcher 1955: 4 obv. 23 *šammu šalmu*.

36. Gurney & Hulin 1964: 391 i: 15 [*šammi*] *girimmi arqi*.

37. Köcher 1955: 1 i: 6 [*šammu šam*] *mi* ^d*šamaš*.

38. Köcher 1955: 22 ii: 17 *šammu hulamēšu ša kakkīšu ana pāntūšu illakū*.

4. Conclusion

In synopsis with the different descriptions the following picture emerges:

Plant part	J	D	C
Root	• French turnip		• Red bryony
Leave	• Rocket	• Wide, oblong, split, dark, rough • Bindweed • Softer leaves • Soft, fluffy • Black bryony	
Flower	• Pomegranate • Petals like poppy	• Purple • Quince-yellow • White	• Yellow
Calyx	• Like joint of little finger • Like a bowl • Thorns, spikes	• Hard, thorny	
Seed	• Full of seed like ironwort	• Full of seed like poppy • Black • Yellowish like hedge-mustard, in capsules • White	
Growth		• Stem fenced with little disks between the flowers like the pomegranate • Grows among ruins	• Growing out of walls • Spikes, thorns like a “chameleon-tree”
Not specified			• Black

J: Josephus

D: Dioscorides

C: Cuneiform sources

To summarise, the root is thick, round, tender and fleshy like that of red bryony or French turnip. The leaves are lobular, rough and hairy or soft and fluffy; they are compared to rocket, black bryony and bindweed. Both bindweed and black bryony have heart-shaped or 3-lobed leaves. The flowers grow in a row directly from the stem like the flowers of pomegranate; the calyx is as big as the joint of a little finger and has a peculiar shape that looks like a bowl and reminds of a pomegranate fruit. The rim of the calyx is fenced with spikes or thorns. The petals are broad like those of a poppy; the colour of the flower varies according to species being purple, white or yellow. The colour of the seed is black, white or yellow according to species. The flower contains as many seeds as poppy or ironwort. One of the species grows in rocky places. The Aramaic and Akkadian

morphological descriptions and the connection between the Aramaic and Greek term suggest the identification with henbane and rule out the identification with *Withania somnifera*.³⁹

The photo below showing the flowers of henbane illustrates well the accuracy of the ancient plant descriptions.



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39. Pace Ghazanfar & Kogan 2021: 122, 133-134 who identify Aramaic *šakronā* and Akkadian *šakirū* with *Withania somnifera*.

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