

## Silphion revisited

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### Introduction

The logo of the Medicinal Plant Specialist Group shows the ancient Silphion plant, the first useful plant species said to have become extinct through over-utilization. Much has been written about this plant from the Cyrenaica in Northern Africa, starting from early sources like Herodot (5th century BC) or Theophrast (3rd century BC). SCHIPPMANN (1995) well summarized the knowledge about Silphion available at this time in his “Silphion story” in the first volume of this journal.

A closer look at the different stories about Silphion – evaluating ancient sources and combining this with a scientific botanical background – has identified a number of so called “facts” about the Cyrenaic Silphion as erroneous (KIEHN 2006). There are two main fields of confusion: utilization in ancient times (especially medicinally), and botanical characters and identification (incl. the question whether and when the species became extinct).

The aims of this paper are to identify some of the most popular misperceptions and to give more details about this enigmatic plant.

### The Silphion story in short

Silphion was the main trade product of the Northern African region of the Cyrenaica (in today’s Libya) for more than 200 years, after the foundation of the city of Cyrene (631 BC according to Herodot). The image of the plant is frequently found on Cyrenian coins. Subsequently, during the Ptolemaic and Roman reign, traded quantities of Cyrenaic Silphion were becoming smaller, and the original Silphion was more and more replaced by a substitute (*Ferula asafoetida*) from Persia, Syria and Media (home of the Medes, an ancient Iranian people resident from west to north of Iran). Several ancient authors like Pliny the Elder (23-79 AD) gave reasons for this successive extinction: overharvesting, trade, and profit making.

### Images

Cyrenaic coins provide indicative pictures of the Silphion, showing fruits or whole plants, sometimes also with fruits and roots. In addition, plants held by small clay figurines from Apollonia possibly represent Silphion; and a stylized Silphion root is found in the Codex Vindobonensis. But none of these images gives additional botanical information about ancient Silphion.

All other reports of Silphion images do not stand a closer inspection (KIEHN 2006). This explicitly holds true for some often cited items like the capital of Al Beidha, the

capital of Battos in Cyrene, a column at Delphi, a cup from Naukratis, the “goddess with Silphion” from the Louvre, Mycenaean signet-rings, Minoan letters and even famous “Arkesilas cup”. In some of these cases, earlier authors already provided decisive arguments against an identification of the vegetable element as Silphion, but that did not prevent others (especially in the last decade) to repeat erroneous assumptions. As an example, already ELDERKIN (1941) showed how unlikely it is to assume that plant parts on a column at Delphi represent Silphion (and, therefore, named the column “Akanthos Column”). But, nevertheless, an identification as “Silphion column” is even found in a recent university lecture (LYKODIS 2006).



**Figure 1.** Cyrenaic tetradrachm (minted 435-375 B.C.) showing a silphion plant (Illustration taken from ROBINSON, BMC, 1927, plate IX, fig. 11).



**Figure 2.** Capital at the Asclepios sanctuary in Al-Beidha, Libya. The plant in the center of this relief was wrongly identified as silphion. The botanical characters fit for a member of the monocots (e.g., Liliaceae in the broad sense) and for sure not for an Umbelliferae (Photo: M. KIEHN, Libya 2001).

The probably most prominent case of a misidentification relates to the so-called “Arkesilas cup”. Solely based on the spelling of the names of persons on this cup, a whole story was developed – this cup would show the survey of weighting and shipping of Silphion by a king Arkesilaos from Cyrene. Besides other possible interpretations of the spelling of the names (for details see KIEHN 2006), the most important argument against the Silphion subject on this cup relates to the traded goods, which are packed in nets – however, Theophrast and Pliny wrote that Silphion was packed in jars. And, how should a resinous substance reasonably have been packed in a net?

Not even the sticky stalks of Silphion could have been transported that way. It is much more likely that the handling and shipping of a woollen substance is shown (as already proposed by LANE 1933/34).

### Medicinal uses

The multiple medicinal potentials of Cyrenaic Silphion were highly estimated in antiquity and listed by different ancient authors. Pliny the Elder called it “one of the most precious gifts of nature” (Plin. nat. XXII 101). He also reported the substitutes from Media and Syria to be weaker (Plin. nat. XIX 40: “sed multo infra Cyrenaicum”). Only two aspects of medicinal uses (birth control and aphrodisiac effects) will be dealt with here in more detail, as the recent literature about both subjects urgently deserves clarifications and corrections.

#### Birth control

A new interest in Silphion was created by a publication of RIDDLE (1992) entitled “Contraception and abortion from the ancient world to the renaissance”. In this book and in follow-up scientific articles Riddle and co-authors argue that Cyrenaic Silphion was a powerful agent for birth control in the Roman society, and it would be evident from the ancient sources that the most prominent use of products of this plant was abortion. They also claim this use to be the reason for the high price of Cyrenaic Silphion and its final disappearance. This supposed use of Silphion and its implications have been taken up, mostly uncritical, in numerous other papers.

RIDDLE (1992) assumes that not only substances explicitly mentioned as abortive were used that way, but also others which were, i.a., reported to initiate menstruation. But his arguments are not conclusive. He, e.g., interprets Dioscorides’ report of Cyrenaic Silphion to cause menstruation as an evident and intended indication of its abortive function. Such an assumption might be logical for societies tabooing contraception or abortion. However, this was not the case in the time of the Roman Empire, as Dioscorides himself names several plants with abortive effects. And, as he does not mention any such potential in his description of Silphion, this plant hardly can be considered the most effective tool for this purpose.

Regarding other ancient authors, RIDDLE (1992) quite correctly deduces from the texts of Pliny the Elder that this author disregarded all negative impacts of plants. But if the assumptions of the “birth control” effects of Silphion and its products would be correct, would Pliny have such a high opinion of Silphion, and would he not warn women to use Silphion, e.g., in cases of pregnancies?

And what about other ancient medicinal sources cited by RIDDLE (1992) to corroborate his views? No mentioning of any contraceptive or abortive effect is found in

Scribonius Largus or Galen, who, similar to Dioscorides, described other plants with potential in this regard. In the texts of Hippocrates, Silphion occasionally is mentioned (together with numerous other plants) in the context of expelling a dead foetus. Again, this does not at all indicate a pronounced role of the Cyrenaic Silphion as abortive or contraceptive.

RIDDLE and co-authors do not distinguish between the effects described for true Silphion and those attributed to its substitutes. Statements, e.g., by Soranus, used by RIDDLE (1992) to underline his theories, must be regarded with care, because at the time of Soranus (who lived around 100 AD), Cyrenaic Silphion had already disappeared from the market. Thus effects attributed to the “cyrenaic juice” by Soranus either are reports from oral tradition or, if considering Soranus’ texts as instructions for a daily use, they must refer to the substitutes.

While RIDDLE (1992) cites the historical sources for his ideas, other authors seem to not even have looked at these texts at all. This is the only explanation for statements now quite often found in the literature like: “*Contemporary medical authorities were universal in their praise for silphium’s value as a contraceptive. ... Dioscorides, ... recommended silphium for contraceptive and abortive purposes.*” (TSCHANZ 2003), or “*The juice appears from many descriptions in Pliny and in medical writers such as Soranus and Dioscorides to have been widely known as a contraceptive or abortifacient ... Riddle has pointed to enough evidence to confirm that the contraceptive functions of laser-juice were important enough and well enough known among the learned and sophisticated elite in Rome*” (FISHER 1996).

Taking all this into account, the antique texts about medicinal uses of true Silphion and its products do not provide any proof for hypotheses about a prominent role of Cyrenaic Silphion as contraceptive or abortive agent. Just the opposite is evident – no special effect of the Cyrenaic Silphion regarding abortion or contraception is deducible from the ancient authors mentioned by RIDDLE (1992).

RIDDLE and co-authors also use the interpretation of an image on a tetradrachm from Cyrene to underline their theory of the eminent importance of Cyrenaic Silphion in the context of birth control: “... *Its connection to reproduction is suggested by the iconography used on the Cyrenian four-drachma coin: A seated woman’s left hand points to her genital area, and her right hand touches a silphion plant.*” and state from this: “*We know that silphion was valued as contraceptive from both objects and writings of the day.*” (RIDDLE & WORTH ESTES 1992). The coin from the Cyrenaica is dated 570-480 BC and shows the sitting nymph Cyrene (symbolizing the city) pointing to a Silphion plant with one hand. The other hand, however, is not pointing to anywhere,

but just lies on her lap as it happens when one is sitting. Any interpretation beyond that is more than speculative as is the suggestion of a “contraceptive theme” in that coin.

#### Silphion – an aphrodisiac?

In recent publications (e.g., KOERPER & KOLLS 1999, KOERPER & MOERMAN 2000, KANDELER 2003) Silphion images on Cyrenaic coins are interpreted as advertisement for Silphion as compound of love potions or aphrodisiacs. KOERPER & MOERMAN (2000) write that coins from the Cyrenaica indicate “*Cyrenaic juice as an effective ingredient of love potions.*” KOERPER & KOLLS (1999) re-interpret the coin with the sitting nymph Cyrene already mentioned above “... We propose that this is just as likely to have been an erotic motif whose metaphoric reference was fertility rather than the anti-fertility theme suggested by Riddle”.

A symbol for love and sexuality is seen by some authors in the so-called “heart-shaped” fruit of Silphion on many coins from the Cyrenaica. FAVORITO & BATY (1995) hypothesize that the heart-symbol has survived from the antiquity through the Roman “lupercalia” (a feast celebrated during times of Roman heathenism) and the medieval age until St. Valentine’s Day. They ignore the fact that the St. Valentine’s type of heart as a symbol for romantic love was first used in Victorian times, and was not known in antiquity. KOERPER & KOLLS (1999) as well as KOERPER & MOERMAN (2000) doubt the “heart-shape” to be a realistic image of the Silphion fruit. KOERPER & KOLLS (1999) even go further by stating that “...*The fruits or seed pod ... is testicular (realistic to cordiform) in morphology ... We do not interpret the cordiform element as naïve, but rather ... it is the result of a conscious effort to mimic testicles.*” and “*Such fiction was abetted by the fact that overseas consumers obtained a processed product ... certain aphrodisiacs of antiquity that were prepared of plant parts resembling male genitalia.*”. KOERPER & MOERMAN (2000) come to similar conclusions: “... *The seed pods – look like testicles – sometimes they look rather realistic, but sometimes more heart-shaped*”.

The real interpretation of the form of the fruits is much less poetic. First of all, the fruits are not heart-shaped, but inverted heart-shaped (some authors obviously have not even oriented the coins correctly!). And regarding the botanical facts, already OERSTED (in STRANTZ 1909, p. 176f.) correctly wrote that the coins show, quite realistically, two winged mericarps (half-fruits) of an Umbelliferae still connected at the basis, resulting in an inverted heart-shaped appearance. Such fruits do exist in several extant members of the family. Thus all the above cited speculations as well as a phallic interpretation of

the Silphion plants on Cyrenaic coins found, e.g., in KOERPER & MOERMAN (2000) “...*evoke images of an erect penis*” are obsolete in the light of the real botanical facts.

KOERPER & KOLLS (1999) as well as KOERPER & MOERMAN (2000) admit that there is not a single antique text directly mentioning Silphion as an aphrodisiac.

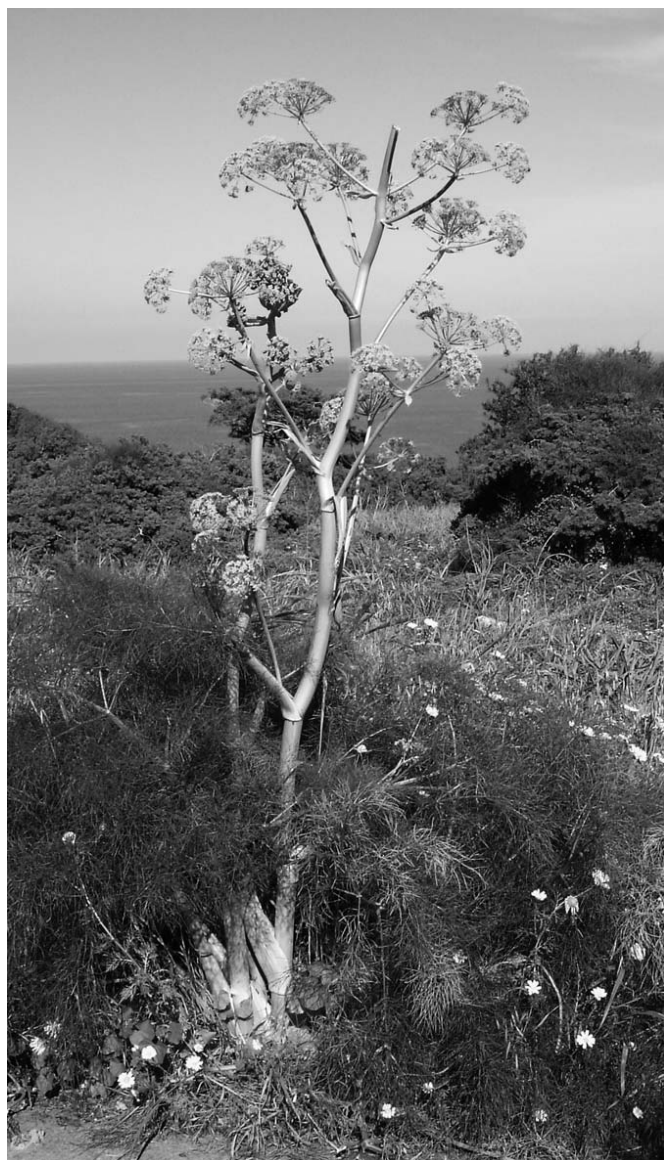
Finally, Silphion motifs are unlikely to have advertised an aphrodisiac in the Roman Empire three centuries after having disappeared from the Cyrenaic coins.

#### **Wrong botanical identifications**

Quite exhaustive descriptions (most importantly those of Theophrast and Pliny the Elder) and the images on the coins limit the identification of Cyrenaic Silphion to a *Ferula* species or a taxon nearly related to this genus from the Umbelliferae. The more surprising are other views found in recent literature. One repeatedly occurring error is the classification of Silphion into the Asteraceae, most probably caused by Linnaeus, who, in 1737, newly attributed the Latin name “*Silphium*” to a genus of North American Asteraceae. This *Silphium* has nothing to do with the Silphion of ancient times, but obviously creates confusions for non-botanists. More problematic are some chapters in the German standard literature for the etymology of plant names (GENAUST 2005). GENAUST doubts that Silphion is an Umbelliferae (i.a., because of an assumed bad taste of *Ferula asafoetida*) and associates it with the Asteraceae genus *Artemisia*. Such considerations not only contradict the information from historical texts and images. Genaust also should have noted that Theophrast (h. pl. VI 1, 6) distinguished Silphion from “abrotanum”, an *Artemisia* species of the deserts of Libya.

All hitherto published attempts to identify Cyrenaic Silphion on species level are unsatisfying or erroneous. This refers to speculations that *Ferula asafoetida* (source of Silphion substitutes) might also have been the source of the Cyrenaic Silphion. Ideas of earlier botanists that this species could have occurred in the Cyrenaica are not shared by the most recent floristic literature for the region (JAFRI 1985). The newest reports about the rediscovery of Silphion in the Cyrenaica are all based on work of the Italian botanist ANTONIO MANUNTA from Urbino. He discovered *Cachrys ferulacea* (= *Prangos ferulacea*) in the Cyrenaica and thought it to be the Cyrenaic Silphion (MANUNTA 1996). But his arguments are not convincing: He does neither use nor cite any ancient written source; only referring to the Dioscorides-translation of Matthioli of 1568. He wrongly interprets Dioscorides’ report of the distribution area of Silphion and notes the match with the distribution of *Cachrys ferulacea*. But Dioscorides did not distinguish

between the different Silphion types and his distribution data refer to all of them together. MANUNTA's comparison of botanical characters is incomplete. He only compares characters of the coins and does not consider any character mentioned in ancient written sources. He only compares to *Cachrys ferulacea* and not to any other large Umbelliferae. Including these data and taxa makes it obvious that the Silphion characters (e.g., the reported size of the ancient plant) fit much better to *Ferula* species than to *Cachrys ferulacea*. It is also interesting that MANUNTA (1996) cites GEMMILL (1966) but does not mention Gemmill's note about *Prangos ferulacea* being identical with the ancient Magydaris. Magydaris, however, was clearly distinguished from Silphion by the ancient authors. This is another strong argument against the identification of the Cyrenaic Silphion with *Cachrys ferulacea*.



**Figure 3.** *Ferula communis*, a relative of Cyrenaic silphion widespread in the Mediterranean (Photo: M. KIEHN, Cyprus 2005).

### Closing remarks

The present studies clearly show that many so-called facts about Silphion are the results of misinterpretations or wishful thinking rather than being based on objective evidence. This holds true for most floral ornaments brought in connection with Silphion, and also for some hypotheses, e.g. that ancient practises of birth control or moral concepts of the rising Christianity have caused its extinction. Up to now all attempts to identify a modern Umbelliferae as the Cyrenaic Silphion have failed, as there is no Umbelliferae native to Libya exhibiting all characters reported for the ancient plant. The ongoing research on this subject, however, shows that it seems difficult to accept the extinction of this enigmatic plant, a fact already indicated by Pliny the Elder nearly 2,000 years ago (Plin. nat. XIX, 39): “*It has not been found in this country for many years ... as far as I remember only one plant was found and sent to Emperor Nero*”.

Thus Silphion really seems to be the first useful plant having become extinct by overharvesting, trade, and profit making – this way also being well suited as logo of the MPSG.

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## Taxon File

### On the history, botany, distribution, uses and conservation aspects of *Nardostachys jatamansi* in India

Niranjan Chandra Shah

*Nardostachys jatamansi* (D. Don) DC. is a well known medicinal plant from the Kumaon Himalayas, the Central and Eastern Himalayas, and the Sino-Indian Himalayan regions. Dealing with its systematic, WEBERLING (1975, 1978) considered all the species found in the Indian and Sino Himalayas, namely *N. grandiflora* DC., *N. chinensis* Batalin and *N. gracilis* Kitamura as morphological 'types' falling within the range of *Nardostachys jatamansi* (D. Don) DC. In this paper, we follow this view and all discussions will be made on *Nardostachys jatamansi* (D. Don) DC.

Botanical naming of *Nardostachys jatamansi* (D. Don) DC. has an interesting story worth to be reviewed. In the year 1790, Sir William Jones, the famous orientalist, discovered that 'Nardus' of the Greeks, the 'Spikenard'

of the Holy Bible, 'Sumbul-e-Hind' of Persians and Arabians, and 'Balchar' of India all are 'Jatamansi' of Sanskrit. He received a specimen from Bhutan under the name 'Jatamansi'. Unfortunately, it had two portions of two different plants. The aerial portion was of *Valeriana jatamansi* Jones (= *Valeriana wallichii* DC.) and the root stock portion of *Nardostachys jatamansi* (D. Don) DC. In 1835, Jones named this specimen "*Valeriana jatamansi*". In 1795, Roxburgh added more confusion by publishing an illustration on the basis of this 'specimen' under the name *Valeriana jatamansi*. The error was detected by D. Don in 1821 who procured a specimen of true 'Jatamansi' and described it again, first as *Valeriana jatamansi* and then as *Patrinia jatamansi*. Later, in 1830 De Candolle created the new genus *Nardostachys* and classified it under the name *Nardostachys jatamansi*, he also described another species, *N. grandiflora*.

A number of authorities have considered *N. jatamansi* and *N. grandiflora* as two distinct species accounting on the difference in the inflorescences. However, WEBERLING (1975) concluded that not only *N. jatamansi* but also *N. chinensis* Batalin and *N. gracilis* Kitamura fall within the range of variability of *N. grandiflora*, and suggested a study of the environmental factors in which the genus *Nardostachys* grows should be undertaken. HARA et al. (1978) and HARA & WILLIAMS (1979) supported this view.

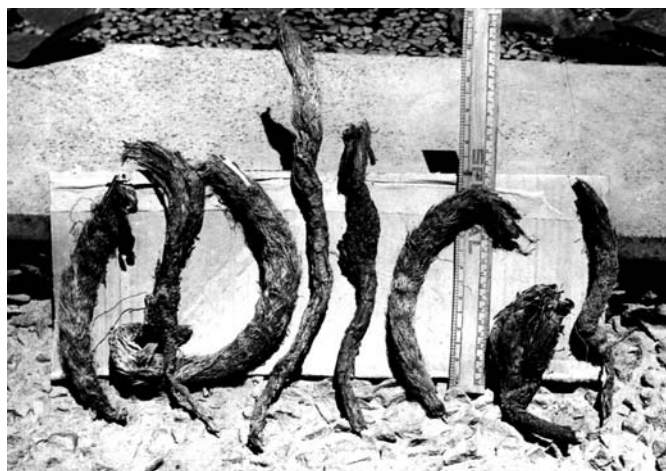


Figure 1. *Nardostachys jatamansi* rhizome with a scale to assess its size. (Photo: N.C. SHAH).

### Botany of *Nardostachys jatamansi* (D. Don) DC. syn. *N. grandiflora* DC (Royle)

The morphological characters of *Nardostachys jatamansi* (D. Don) DC have been described in detail by WEBERLING & ENGEL (1975). *Nardostachys jatamansi* is a perennial herb with a stout un-branched or sparsely branched, woody, aromatic rhizome covered with reddish brown thick fibers of remnants petioles of withered radical leaves with a single long tap root with 2-7 rhi-