



XLV. Observations on the lotus of Egypt

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that I have here given philosophers a further inducement to admire with me the great and noble operations of the divine providence, which so evidently appear in the different changes effected in air and water, and which are so necessary for supporting and maintaining the creation.

Groningen,
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XLV. *Observations on the Lotus of Egypt.* By ALIRE
RAFFENAU-DE LILE, Member of the Institute of Egypt*.

SINCE my return from Egypt I presented to the Museum of Natural History different kinds of seeds and several bulbs of the *nymphæa cærulea*, of which an accurate description was given in Egypt by C. Savigny, my colleague. These bulbs began to germinate towards the end of Messidor, when kept immersed in water. I collected them in the island of Rosetta in the month of Ventose, year 8; and though I had kept them two years without planting them, they had not become deficcated: one of the plants of the *nymphæa* has already produced several flowers somewhat smaller, less odorous, and of a paler blue colour, than those in Egypt.

Though I made a tour with the Commission of Arts into Upper Egypt during the time of the inundation, which is that also of the increase of the two kinds of *nymphæa* of the Nile, we met with none of these plants in that country.

The waters of the Nile rise to a considerable height in the Said, and much less in Lower Egypt. The *nymphæa*, therefore, easily reaches the surface of the water, during the inundation, in the lakes and the canals of the Delta, where they are not hurt by the current of the river. It is, perhaps, for a contrary reason that the *nymphæa* does not grow in the Said.

We observed the *nymphæa cærulea* painted and engraven on the Egyptian monuments much oftener than the two kinds of lotus mentioned by the oldest historians. This *nymphæa* has a great resemblance to these kinds of lotus, and appears to be a third species of it.

Most authors who have undertaken to make known the lotus in regard to its antiquity have fallen into many errors; but Mahudel, of the Academy of Inscriptions and Belles

* From *Annales du Muséum National d'Histoire Naturelle*, No. 5.

Lettres *, and lately professor Sprengel, of Halle †, have given very accurate information respecting these plants.

The expedition to Egypt afforded me an opportunity of making the following observations on the same subject: they are naturally connected with those already made in Egypt by C. Savigny on the *nymphæa cærulea*, and complete the history of that plant.

Herodotus ‡ relates that the Egyptians fed on the lotus which grew in the waters of the Nile. He calls this lotus a lily, and says that the seeds, similar to those of the poppy, were employed for making bread. He adds, that they ate also the roots of the lotus, which were round, of the size of an apple, and of a sweet and agreeable flavour. Herodotus then speaks of another kind of lily resembling a rose, which grew also in the Nile, the fruit of which had the form of a wasp's nest, and which contained several seeds good to eat, and of the size of an olive.

Theophrastus § gives a very accurate description of the same plants:—"The lotus," says he, "grows in the fields when they are inundated. Its flowers are white, and have petals like those of the lily. They spring up in great numbers close to each other. They shut their leaves at sun-set, and conceal their fruit. These flowers open again when the sun reappears, and rise above the water; and this alternation is repeated till the fruit is completely formed, and the flowers have dropped off. The fruit is equal to that of a large poppy, and contains a great number of seeds similar to grains of millet. The Egyptians deposit the fruit in heaps, and suffer the rind to putrefy; they then separate the seeds by washing them in the Nile, dry them, and knead them into bread. The root of the lotus called *corfon* is round, and of the size of a quince. Its rind is black, and like that of the chestnut. This root is white in the inside, and is eaten either raw or boiled."

The lily of the Nile, like the roses mentioned by Herodotus, is called by Athenæus || Egyptian bean, and the rose lotus. Theophrastus gives it the name of *bean*.

"This bean grows in the marshes and ponds. Its stem is four cubits in length, and as thick as the finger. It resembles a reed without knots. The fruit it bears is shaped like a wasp's nest, and contains about thirty beans a little prominent, each deposited in a different cell. The flower is twice as large as that of the poppy, and entirely a rose. The leaves are sup-

* Histoire de l'Académie des Inscriptions, vol. ii. p. 285.

† Antiquitatum botanicarum Specimen primum, p. 47.

‡ In Eut. rpe, cap. xcii.

§ Theophrasti Hist. Plant. lib. iv. cap. 10.

|| Athenæi Deipnosoph. lib. iii. p. 72; lib. xv. p. 677.

ported by pedicles similar to those of fruits: they are large, and have a resemblance to a Thessalian cap. When one of the beans is bruised there is seen in the inside of it a small body folded together, from which the leaf arises. The root is thicker than that of a strong reed, and has partitions like the stem. It serves as nourishment to those who reside near the marshes. This plant grows spontaneously, and in abundance. It is sown also in the mud, by forming for it a bed of straw, in order that it may not rot."

The lotus of Herodotus and Theophrastus grows also in Egypt. It is the *nymphæa lotus* of Linnæus*, the characters of which, compared by C. Savigny to those of the *nymphæa cærulea*, agree with the descriptions given by the ancients.

In regard to the rose lily or Egyptian bean, which is frequently carved out among the ornaments and symbolical representations of the Egyptian temples, it no longer grows in that country; and would have remained unknown to naturalists had it not been discovered in India. This plant has been called by Linnæus† the *nymphæa nelumbo*. Its fruit, which the Greeks compare to a wasp's nest, has a perfect resemblance to it. They called it *ciborion*‡ on account, no doubt, of its resemblance to a cup. This fruit is shaped like the spout of a watering-pot, and is flattened at the upper part, which contains from fifteen to thirty small fossæ, containing a like number of seeds of the size of a nut, and somewhat prominent. The plumula§, which is the rudiment of the leaves, is, indeed, rolled up in the middle of the seed, as Theophrastus says. The flowers are roses, and very large. The leaves are orbicular, thuriform, and about two feet in diameter||.

Belon has confounded the Egyptian bean with the colocasia¶ (*arum colocasia* Linn.), which is cultivated in Egypt: as the Greeks often gave the name of *colocasia* to the root of the Egyptian bean**, it was a difficult matter to avoid confounding these two plants.

Sprengel remarks, that the appellation of *colocasia* was given also to the *nymphæa lotus*††.

But we receive as much information respecting these plants

* Species Plantarum, p. 729.

† Ibid. p. 730.

‡ Athenæi Deipnosoph. lib. iii. p. 72; & lib. xi. p. 477. Diodorus Siculus, lib. i. Dioscorides, lib. ii. cap. 97.

§ Gærtner De Fructibus, &c. tom. i. p. 74. tab. 19.

|| Hortus Malabar. tom. xi. p. 61.

¶ Belon, Observations, lib. ii. chap. 28.

** Athenæi Deipnosoph. lib. iii. p. 72 & 73.

†† Antiquitat. botanic. Specimen prim. c. 89.

from antient sculptures as from the account of historians. The rose lotus, or Egyptian bean, is very correctly represented in the mosaic of Palestrine, an explanation of which has been given by Barthelemy in the Memoirs of the Academy of Inscriptions and Belles-Lettres *. The fruit, the flowers, and the leaves of that plant are exceedingly like. They float on the surface of the water in a lake which carries several barks during the time of a festival. This painting brings to remembrance a passage of Strabo †, who says, that people made excursions of pleasure in boats on the lakes covered with beans, and that they sheltered themselves from the sun with the leaves of that plant. On the Egyptian monuments Harpocrates is represented above the flower of the fruit of the rose lotus. This plant, so well known in antient Egypt, is at present celebrated in the religion of the Bramins, and is often placed among the attributes of the Indian deities ‡.

It is not possible to say to what kind of lotus the flowers seen represented on the heads of the Egyptian kings or deities in several medals belonged, because the species of lotus differ chiefly in regard to the colour of their flowers, and the form of their fruits or leaves; but on the walls of the temples of Egypt, and on the cases containing the mummies, they may be easily distinguished when the painting is in good preservation. The Egyptians often represented the leaves of the white lotus (*nymphaea lotus*) of the same size as the flowers, though naturally the leaves are much larger; but they have omitted to mark the indentations of these leaves, which indeed are wanting when the plant is very young. I have, however, seen in the table of Latopolis this lotus represented with the leaves indented.

But it would be in vain to seek for scrupulous exactness in allegorical sculptures. Thus on the base of the statue of the Nile, placed in the gardens of the Tuileries, the fruit of the lotus is very exactly represented, but the leaves which accompany it are not those of that plant.

The fruit of the white lotus, which has the same form as

* Histoire de l'Acad. des Inscript. 1790. The *Pittura antiche di Pietro S. Bartoli*, which represent the mosaic with its colours, may be seen in the library of the Pantheon.

† Strabo, lib. xvii. The Greek text has been badly interpreted by translators, who supposed that the boats rowed along under the shade of the leaves, which rose to a great height above the water. These leaves float on the surface of the water, and are very broad. It appears that the boats were covered with them in order to form a shade, as they are covered in Egypt at present with the leaves of the date-tree and with reeds.

‡ Systema Brahmanicum Fr. Paullinii, à Bartholom. tab. 9 & 10.

that of the poppy, may be distinguished on the Egyptian monuments. In my opinion, this resemblance has made the fruit of the lotus, delineated on several Egyptian medals, to be confounded with that of the poppy. The fruits represented on these medals are the same as those sculptured on the Egyptian monuments anterior to those of the Greeks. It does not appear from any historical testimony that the Egyptians ever made much use of the poppy; and they rather placed the fruits of the lotus among the attributes of Isis, with ears of corn, as a sign of abundance and fertility, since they were long accustomed to make a sort of bread with the seeds of that plant. The Egyptian lotus was very little known to the Greeks and the Romans, who compared it to the most common plants. Herodotus calls the lotus a *lily*; Theophrastus compared it to the *poppy*, and Pliny calls its flowers *poppies* *. Another cause which may have occasioned the lotus to be confounded with the poppy, is the resemblance which exists between the attributes of Isis and those of Ceres, to whom the poppy was consecrated †.

The *nymphaea lotus* and the *nymphaea nelumbo* are the two species of lotus described by Herodotus and Theophrastus. Both grew naturally in Egypt, and were cultivated in that country. It was the fruit of the cultivated *nymphaea lotus* to which Pliny gives the name of *lotometra* ‡.

A passage in Athenæus proves that the *nymphaea cœrulea* is a third species of lotus. This author relates that Antinoian § crowns were made at Alexandria with the rose lotus, and that the blue were interwoven with these crowns. The flowers of these different kinds of lotus are very odoriferous, have great splendour and freshness, and must have been selected for making crowns. Heliodorus relates, that couriers who announced a victory in Meroë were crowned with lotus ||. When Plutarch speaks of a crown of melilot which fell from the head of Osiris ¶, and when he classes that plant among those which grow in the Nile, he alludes to a crown of lotus. Athenæus relates, that the lotus was also called melilot **, and that it was formed into melilotine garlands. The same historian tells us also why the rose lotus was called the Antinoian. A poet presented the emperor Adrian, during

* Plin. Hist. Nat. lib. xiii. cap. 17.

† Virgil. Georg. i. ver. 212. Ovid. Fast. lib. iv. Theoc. Idyll. vii. ver. 153. Callimach. Hymn. Cer. ver. 45.

‡ Plin. Hist. Nat. lib. xxii. cap. 21.

§ Athenæi Deipnosoph. lib. xv. p. 677.

|| Heliodor. Ethiop. lib. x. cap. 28.

¶ Treatise on Isis and Osiris.

** Athenæi Deipnosoph. lib. iii. p. 73.

his residence at Alexandria, with a rose lotus as a rarity, and said that this lotus, which had grown up in a country moistened by the blood of so terrible a lion, ought to be called the Antioian. The lion of which the poet here speaks had ravaged a part of Libya, and had at length been destroyed by the emperor Adrian during a hunting excursion.

Independently of the plausible conjectures of several writers respecting the origin of the religious employment which the Egyptians made of the lotus, these plants, on account of their simple and natural properties, must have been very much celebrated in antient Egypt. This country being indebted to the Nile for its prosperity, its inhabitants considered as the signs of a great benefit the plants which grew in the waters of that river. The flowers of the lotus rise to the surface of the water when the Nile begins to increase, and announce the inundation, which is about to bring abundance along with it. Besides the names of *bacbenin* and *naufar*, which the Egyptians give to the nymphæa, they call them also *arais el Nil*, that is to say, which grow up in the Nile. These names certainly refer to the fertility about to be renewed by the presence of the waters.

The Egyptians collected the roots of the lotus when the waters of the Nile retired. At present they are seldom collected; but they multiply very much in the rice-fields, so that the peasants are obliged to pull them up after the rice harvest. They then sometimes eat these roots, which they call *biaro*. I saw some of them sold in the market of Damietta in the month of Frimaire, year 7: I tasted them, and found that their taste was not disagreeable. These roots are round, or somewhat oblong, and smaller than a common egg. The rind is black, and coriaceous: they exhibit tubercles, traced out by the base of the petioles or shoots. These roots in the inside are white and farinaceous; in the centre they are yellowish. After the inundation they remain sunk in the earth which has become dry; and the following year, when covered by water, they send forth leaves and small roots merely from the summit, which has a cottony appearance. The radiculae penetrate laterally into the mud, where they produce tubercles which become similar to the former roots, and which multiply the plant. The Egyptians to collect the seeds washed them, after leaving the rind of the fruit to putrefy. This method is the only one that could be employed, otherwise these seeds would become mixed and deicated with the parenchyme of the fruit. These seeds are very small, rose-coloured or gray on the outside, and farinaceous within. The antients compared them to grains of millet. I have heard

heard the peasants call them *dochn el bachenin*, that is to say, millet of bachenin: but they told me that they were of very little use. The roots and seeds of the *nymphæa lotus* and those of the *nymphæa cærulea* are similar. It is natural, then, to believe that the Egyptians not only made garlands of the blue lotus, but that they used it for food like the *nymphæa lotus*. This is proved by the Egyptian sculptures, since the blue nymphæa is often represented among the offerings of fruits in the grottos of Said, the paintings of which exhibit scenes of domestic life.

Of the two kinds of nymphæa, the Egyptians at present prefer that with blue flowers, which is often represented in the temples. Ebn il Bitar, an Arabian physician, who has written a treatise on plants, quoted by Prosper Alpinus *, distinguishes two kinds of *bachenin* or *nymphæa*, the best of which is called that of the Arabs. I observed that the peasants of the Delta gave the name of bachenin of the Arabs to the *nymphæa cærulea*, and that they set less value on the *nymphæa lotus*.

As the antients have made very little mention of the blue lotus, one might believe that it was brought to Egypt from the East Indies along with the rice, since it grows abundantly in the rice-fields of the Delta; but the paintings in the temples evidently prove that this plant is as antient in Egypt as the *nymphæa lotus*.

It is certain that the *nymphæa cærulea* exists in India. In the *Hortus Malabaricus* it is called *citambel* †. Rumphius considers it as a variety with blue flowers of the *nymphæa lotus* ‡. This nymphæa grows also at the Cape of Good Hope, and seems to be sufficiently distinguished by the following phrase of Breyñ: *nymphæa flore cæruleo odoratissimo Capitis Bonæ Spei* §. A figure of it has been given by Andrews ||.

* Prosperi Alpini Rerum Egypt. lib. iii. cap. 10.

† Tom. ii. p. 53. tab. 27.

‡ Herbar. Amboin. tom. vi. p. 72.

§ Prodrum. ii. 26.

|| Botanists Repository, 197.