

Byronia cretica L.



Compiled by: Prof. F. M. Hammouda, Prof. S. I. Ismail, Dr. N. S. Abdel-Azim and Dr. K. A. Shams
Edited by: Prof. K. H. Batanouny
Photos by K. H. Batanouny

■ Morphological Description

B. cretica is a herbaceous perennial plant; the stem is dioecious and 2-4 m long. It climbs with the aid of simple tendrils. The leaves are alternate, short petiolate, broad-cordate to palmate-5-lobed; leaf-lobes are entire or with few, large, subobtusate teeth, the central usually not markedly longer than the lateral; both surfaces of the leaf are covered in short bristly hairs; each leaf is positioned opposite to a tendril. The root is tuberous, up to 2.5 kg., light yellow and slimy white inside. Female flowers are in short-pedicled clusters; males in long-pedicled racemes. Flowers are radial and their structures are arranged in fives. The corolla of female flowers is up to 10 mm wide. The sepals are half the size of petals. The ovary is inferior and 3-chambered. The corolla of male flowers is up to 20 mm wide, yellowish and green veined; the 5-stamens are fused in groups (2+2+1). The fruit is a 1 to 2 seeded, globose berry, 6-10mm thick. The calyx of female flowers is usually half the length of the

Byronia cretica L.,

Sp. Pl., 1, 1013 (1753).

Names

Arabic: Le'eba Murrah لعبة مرة

English: English mandrak, Devil's Turnip, white Bryony

corolla; stigma papillose-hairy; fruit 6-10 mm in diameter, red.

■ Geographical Distribution

Local: Abuqir, Burg Al-Arab, Ras El-Hikma and Matruh.

Regional: Egypt, Libya only.

Global: Central and Southern Europe, northwards to Britain; formerly cultivated as a medicinal plant and often naturalized.

■ Ecology

The plant grows in deep sandy soils in the Mediterranean coastal zone. It grows mainly in relatively moist habitats, i.e. in caves and depressions receiving runoff water. In Cyprus, it has been recorded to grow in forests, scrubs and hedges, from sea level to 1000 ft altitude.

■ Status

This species is now almost extinct in Egypt. A few specimens have been collected from the Western Mediterranean Coastal zone of Egypt (between Alexandria and Marsa Matruh). This plant grows mainly in the sandy habitats near the coast. The severe and drastic changes in the habitat supporting the species lead to its extermination. It is to be noted that its habitat is along the coastal zone where the new summer resort areas have sprung up, its natural habitat thereby being threatened by extinction. The collection of this plant has the potential to threaten its existence.

■ Part(s) Used

Roots

■ Collection

In summer

■ Preparations

Tincture, decoction, powder

■ Use

Oral

■ Constituents

- Cucurbitacins B, D, E, I, J, K, L and S (present in the fresh root as aglycones of the glycosides).
- Small quantities of intact glycosides, for example bryoamarid, bryoside, bryodiosides A and C.
- Triterpene acids, including bryonolic acid, bryocoumaric acid, 3- α -hydroxymultiflora-8-ene-29 α -acid.
- Fatty acids (polyhydroxyderivatives, resembling the eicosanoids) such as, 9,12,13-trihydroxy-octadeca-10 (E)-15 (Z)-dienic acid.
- Ribosome-inactivating proteins: bryodine-L and bryodine-R.
- The plant also contains starch, resin, alkaloid.

■ Pharmacological Action and Toxicity

The protein bryodine has cytotoxic effects in vitro. The drug is used as a laxative and an emetic. The chief active ingredients are the cucurbitacins, which even in low doses lead to irritation of the mucous membrane of the gastrointestinal tract with subsequent increase of peristalsis. The drug is severely toxic in higher doses.

■ Traditional Medicine and Indigenous Knowledge

History: the drug is mainly used in Egypt as a bitter tonic and to ameliorate the condition of

diabetics. It is also used as a hydragogue cathartic and diuretic in pleurisy, dropsy, whooping cough, bronchitis and tonsillities. It is an irritant to the skin and may cause vesication.

■ Traditional Medicinal Uses

- Antidiabetic
- Anti diuretic
- Antispasmodic
- Bronchial asthma
- Tonsillities

■ References

- Fahmy, I.R. (1932). "Medicinal Plants and Vegetable Drugs", Paul Barbey's Print.Office, Cairo.
- Frohne, D. and Pfänder, H.J. (1983). "A Colour Atlas of Poisonous Plants", WolfeScience.
- Hassib, M. (1938). "Cucurbitaceae in Egypt". The Fouad I University, Faculty of Science, Publ. No.3, pp173.

General References

- Batanouny, K. H., (1999). "Wild Medicinal Plants in Egypt"^t. (With contribution of: E. Aboutabl, M. Shabana & F. Soliman). With support of the Swiss Development Co-operation (SDC). Academy of Scientific Research and Technology, Egypt. The World Conservation Union (IUCN), Switzerland. pp. 123-127.
- Boulos, L. (2000). "Flora of Egypt", volume two, PP. 135-137, printed by Al Hadara Publishing, Cairo, Egypt.
- Täckholm, Vivi (1974). "Students' Flora of Egypt", Second edition, Cairo Univ., Egypt.