



Arctium lappa L.

ASTERACEAE

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Synonyms

Arctium lappa L.: *Arctium chaorum* Klokov; *Arctium lappa* subsp. *majus* Arènes;
Arctium leiospermum Juz. & Ye. V. Serg.; *Arctium majus* (Gaertn.) Benth.; *Lappa*
major Gaertn.; *Lappa vulgaris* Hill.

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Local Names

Georgian: ოროვანდი (orovandi); ძირხვენა (dzirxvena); **Armenian:** кратук (kratuk); **Russian:** Лопух (loruch); **Azeri:** пытраг (pytrag); (Grossheim 1952; Ketskhoveli et al. 1971–2011; Makashvili 1991; Sokolov 1993).

Botany and Ecology

Biennial. Plants 60–150 cm tall, reaching up to 3 m. Root branched, fleshy, thick, fusiform, up to 60 cm long. Stem erect, strong, longitudinally sulcate, often reddish; branches numerous, erect, spreading, covered with papilliform hairs mixed with glandular hairs, but mostly arachnoid-hairy. Leaves petiolate, broadly cordate-ovate, sparsely crenate toothed or entire, green and sparsely pubescent above, finely gray tomentose beneath with scattered yellowish glandular hairs; basal leaves up to 50 cm long, on ridged, tumid, more than 30 cm long petioles; cauline leaves abruptly reduced, uppermost somewhat cordate at base. Capitula borne sparsely in corymbose-racemose inflorescence, sometimes on peduncles up to 10 cm or longer, and almost at same height at tips of branches, globose, large, 13–20 mm wide excluding cusp, with cusps 20–35 mm long. Involucral bracts glabrous or weakly arachnoid-hairy; lower bracts lanceolate, carinate, 1–1.5 mm wide, weakly ciliate-toothed along margin, narrowed into linear-lanceolate, erect spiny tip; middle bracts appressed-pubescent; inner lanceolate, green, sometimes purple, pubescent, gradually narrowed into weak apical hook as long as or longer than floret. Corolla purple-red, abruptly narrowed into 5–6 mm long tube, limb 4–5 mm with 1.5–2 mm long lobes; apical appendage of anthers 0.2 mm long, narrow and pointed, basal appendages 0.75 mm long, simple or bifid. Achenes 6–6.5 mm long, 2.5–2.75 mm wide, narrow-obovate, with narrow areole, pappus attachment surrounded by four to six tubercles; achenes longitudinally ribbed, transversely rugose near upper end, to lesser extent, at lower end, grayish to brown, with zigzag dark brown to almost black pattern; pappus 3–3.5 mm long. Flowering August–September. Ural, Caucasus, garbage dumps, near inhabited areas, along roads and fences, banks of rivers and rivulets, rarely in cultivated fields (Shishkin and Boborov 1962; Figs. 1, 2, 3, 4, and 5).

Local Medicinal Uses

Root decoction sometimes used as diuretic (Grossheim 1952; Sokolov 1993).

The flowers have antibiotic properties, and the leaves are used as anti-inflammatory, especially for arthritis, as well as antibiotic (Batsatsashvili et al. 2017a, b, c, d, e, f, g, h; Bussmann et al. 2014, 2016, 2017, 2018; Bussmann 2017).

Fig. 1 *Arctium lappa*
(Asteraceae), Racha, Georgia.
(Photo R.W. Bussmann & N.
Y Paniagua-Zambrana)

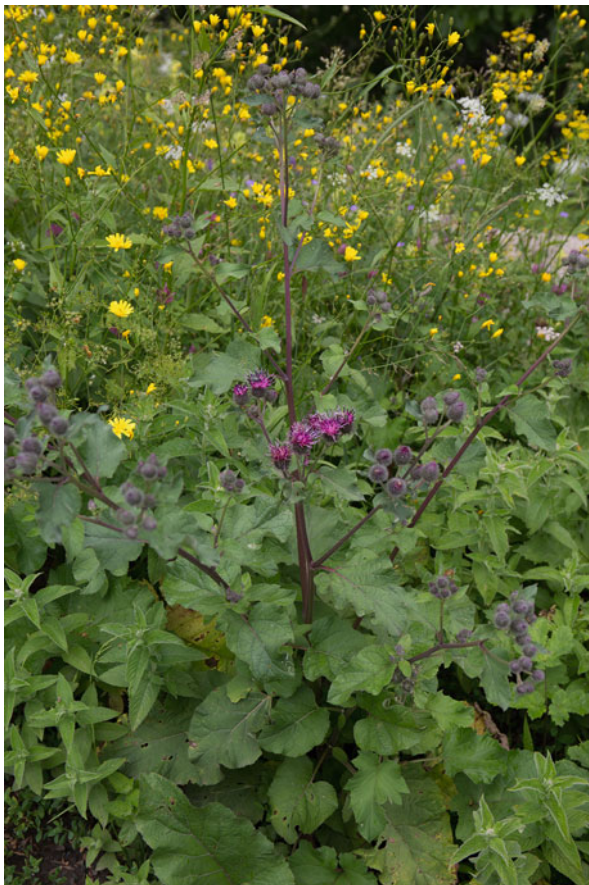


Fig. 2 *Arctium lappa*
(Asteraceae), Racha, Georgia.
(Photo R.W. Bussmann & N.
Y Paniagua-Zambrana)



Fig. 3 *Arctium lappa*
(Asteraceae), Racha, Georgia.
(Photo R.W. Bussmann & N.
Y Paniagua-Zambrana)



Local Food Uses

Young roots are used for food raw or boiled in salted water and further prepared with butter and vinegar. When boiled with sour milk, sorrel, vinegar, etc., inulin in finely chopped roots transforms into sugar (laevulose). Thus, the roots can be used to make sweet puree. Dried and finely ground roots are used to make flour; 30% of burdock root flour can be added to wheat or rye flour to bake bread. Roots can be used to make coffee-like drink. Young shoots and leaves are used for food as salad or are put into borsch (Grossheim 1952).

In Pshavi young shoots and the roots of dzirkhvina ძირხვენა *Arctium palladini* (Marcow.) R.E.Fr. & Soderb. and *Arctium platylepis* (Boiss. & Bal.) Sosn. ex Grossh. are eaten (Maghalashvili 1970).

In Khevsureti the local population uses a variety of plants growing in wild for cooking mixed mkhali, e.g., dzirkhvina ძირხვენა *Arctium lappa* L.; k'enk'asha კენკეშა *Campanula lactiflora* M. Bieb. young, peeled shoots are used as food; tvitmavala თვითმავალა *Amaranthus retroflexus* L. grows in vegetable gardens

Fig. 4 *Arctium lappa*
(Asteraceae), Racha, Georgia.
(Photo R.W. Bussmann & N.
Y Paniagua-Zambrana)



Fig. 5 *Arctium lappa*
(Asteraceae), Racha, Georgia.
(Photo R.W. Bussmann & N.
Y Paniagua-Zambrana)



and ruderal places the aboveground parts of the plant are harvested, boiled, mixed within clarified butter, onions, herbs and eaten; ckhenis sakhvremi ცხენის სახვრემი *Sonchus* ssp., mochik'ais t'ari მოჩიკაის ტარი *Campanula rapunculoides* L.,

mch'ivana მჭივანა *Silene wallichiana* Klotzsch (Bakhtadze and Koghuashvili 2009; Chincharauli 2005).

In Tusheti many herbaceous plants are used as food and are kept for winter, either dried or pickled, to make mixed mkhali and sauces and to accompany the main dishes, including kumeli ქუმელი q'va ყვა. It is used all-year round and is made of roasted keru კერი (barley) grains. Can be made of ipkli იგკლი (Georgian endemic wheat), corn, svili სვილი (rye), kersvili კერსვილი (mixture of barley and rye) and tsetsvi ტეტსვი (faba bean, when mixed with corn: giera-i გიერა-ი *Brassica campestris* subsp. *oleifera* (DC.) Schübl. & Mart., gomat'i გომატი *Bunias orientalis* L., dutsi დუცი *Angelica tatianae* Bordz., kharnuq'a-ი ხარნუყა-ი *Lactuca serriola* L., buera ბუერა *Petasites* ssp., shubq'a-ი შუბყა-ი *Heracleum asperum* M. Bieb., khap'ara-ი ხაპარა-ი *Cichorium intybus* L., mariamdzmara მარიამძმარა *Ligusticum alatum* (M. Bieb.) Spreng. ch'imi ჩიმი *Chaerophyllum bulbosum* L., diq'i დიცი *Heracleum* ssp., jork'uda-ი ჯორტუდა-ი *Artemisia vulgaris* L., sagvidzla საღვიძლა *Taraxacum officinale* (L.) Weber ex F.H. Wigg., dzirkhvena ძირხვენა *Arctium lappa* L., ch'ivana მჭივანა *Silene wallichiana* Klotzsch, kvishamkhala კვიშამხალა *Silene laera* (Stev.) Sims, khavrat'ai ხავრატაი *Capsella bursa-pastoris* (L.) Medik., jorik'udai ჯორიკუდაი *Artemisia vulgaris* L., and giera გიერა *Sinapis arvensis* L. (Makalatia 1933). There are several ways to season mkhali in Tusheti: (1) well-cleaned plants are placed in a pot and cooked without water. The cooked plants are placed on a sieve to cool and cut into pieces. After that the dish is seasoned with onions and browned in clarified butter, eggs, and salt. (2) After cooking the plants in the same way, fresh cottage cheese, onions browned in clarified butter, eggs, and salt are added. (3) After boiling the mkhali is seasoned with vinegar, garlic, and salt. Normally, in Tusheti mkhali is not seasoned with walnuts and vinegar (Makalatia 1933).

The raw roots of dzirkhvenai ძირხვენაი *Arctium lappa* L. are eaten in Tusheti (Makalatia 1933).

In Racha tiorshi თიორში, dilkhani დილხანი *Arctium lappa* L., mek'endzala მეკენძალა *Aruncus vulgaris* Raf., kalak'oda კალაკოდა *Arum orientale* M. Bieb. *Humulus lupulus* L., and many others kept for winter woven in double braids and hung from a pillar to pillar, long as the song sung by women during the kalak'oda კალაკოდა (*Arum orientale* collection party) (Gvaramadze 1997; Pruidze 1986).

Plants mixed together for pkhali in Adjara include dvarula dvalura დვარულა დვალურა *Polygonum carneum* C. Koch, dondoli დონდოლი *Gadellia lactiflora* (M. Bieb.), ch'inch'ari ჩინჩარი *Urtica dioica* L., katamnatsara ქათამნაცარა *Chenopodium album* L., ch'ich'laq'a ჩიჩლაყა *Amaranthus retroflexus* L., perapera ფერაფერა *Phytolacca americana* L., k'uk'umzhavaკუკუმჟავა, svint'ri სვინტრი *Polygonatum* ssp., ch'arbadoლო ჭარბადელო *Arctium lappa* L., and also young leaves of motsvi მოცვი *Vaccinium* ssp., venakhi ვენახი *Vitis vinifera* L., babuats'vera ბაბუასწვერა *Taraxacum* ssp., Kajiloja კაჯილოჯა *Daucus carota* L., Ts'its'marit'a წიწმარიტა *Capsella bursa-pastoris* (L.) Medik., burt'q'ila ბურტყილა *Lapsana grandiflora* M. Bieb., the plants used by Adjara people as food are: ajark'ela აჯარკელა *Lathyrus roseus* Steven, ajorik'a აჯორიკას *Aruncus vulgaris* Raf. (young leaves are pickled), bobots'vera ბობოწვერა *Taraxacum* ssp. (ground roasted dry roots used instead of cichorium), dilq'a დილყა *Heracleum* sp. (shoots are peeled

and eaten), k'onst'ant'ila კონსტანტილა (white roots are edible), ozaghina ოზაღინა *Chaerophyllum aureum* L. (young leaves are pickled), ghima ღიმა *Chaerophyllum bulbosum* L. (mixed with leek or ajorik'a აჯორიკა *Aruncus vulgaris* Raf. and pickled), and dvalura დვალურა *Polygonum carneum* (Baramidze 1987; Kakhidze 2007; Kokhraidze 1947; Nizharadze 1971). Wild pkhali plants can be cooked in various ways: pickled, boiled, and seasoned with vinegar, walnuts, and various spice herbs (Kokhraidze 1947).

The leaves are used in small amounts in pkhali (herb pie), together with lots of other species. The stems can be pickled (Batsatsashvili et al. 2017a, b, c, d, e, f, g, h; Bussmann et al. 2014, 2016, 2017, 2018; Bussmann 2017).

Local Handicraft and Other Uses

Good melliferous plants producing nectar and pollen (Grossheim 1952; Sokolov 1993).

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