Endemic Species Residing to the Genus *Hypericum* L. in Azerbaijan

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Abstract: *Hypericum* L. is the genus of flowering plants in the family *Hypericaceae*. The genus comprises almost 500 species of small shrubs and herbs, which has a worldwide distribution, with representatives in nearly every continent, being only absent from the poles, deserts and low-altitude tropical areas. Nowadays the largest diversity in the genus is found in the Eurasia and North America, but it is also abundant in high-altitude tropical areas of the Southern Hemisphere. Species of *Hypericum* do not grow the habitats that are extremely hot, cold or dry. Species of this genus grow on damp soils, meadows, swamps and even just in small water, at the region of lakes and the rivers (*Hypericum* eloides L.). Species meet in the foothill sand high lands, coming in to the Alpine belt.

Keywords: *Hypericum*, Azerbaijan, Species, Herbs, Meadows, Belt

1. Introduction

The first genetic description of *Hypericum* was given by Tournefort (1700). Linnaeus (1737) in his “Genera Plantarum” recognized the two genera *Hypericum* (5 petals, numerous stamens) and Ascyrum (4 petals, numerous stamens). For this species a worldwide taxonomic monograph was produced by N. Robson (between 1977 to 2012). Also he is recognized 36 sections within *Hypericum*.

This species has been associated with pharmacy and folklore for many centuries. Plant species of the genus *Hypericum* are well known for their use in traditional medicine due to the therapeutic efficacy of its many different species. For example *H. perforatum* L. have been used in traditional medicine based on the pharmacological properties of their active compounds such as hypericine and pseudo-hypericine, which are used as pain killers, antidepressants, antiancer treatments.

*Hypericum* belongs to the family *Hypericaceae* Juss.

The species of the genus *Hypericum* can be recognized by their opposite extipulate entire or gland-fringed leaves, the presence of glandular secretions, and yellow bisexual flowers with petal sand sepals five in number and several stamens in 3 or 5 fascicles, ovary superior, with connate carpels, 3-5 locular with free 3 style sand the presence of pale and sometimes reddish to black glandular secretions.

The characteristics feature for *Hypericum* is yellow colored petals, which are used to define borders of the genus. The presence of dark glands (in one organ or more) is synapomorphic trait with morphological importance, for these species. Flowers of *Hypericum* are generally nectarless. They are typical pollen-flowers visited by less-specialized insects. The gynoecium is typically syncarpous with an axile placentation. The fruit is a fleshy, or non-fleshy; dehiscent, or indehiscent; a capsule, or a berry, containing small cylindrical light brown to black seeds.

With a concept Enda (endemic) or an endemic element apparently special difficulties don't arise. This category is formed by the taxons extended only in the territory of the studied flora and which aren't over stepping her bounds. Thereby, endemic taxons make a specific part of flora and serve as her absolute difference from all other florae.

Endemic plants are special because they are found in only one location on the planet and now here else. The endemic plants of Azerbaijan are the most vulnerable component of its flora and loss of any of them means irreplaceable loss of biodiversity as a whole. There for by impacts of anthropogen factors many of precious shrubs in forests areas are
There are two endemic species for Azerbaijan: Hypericum apricum (syn: H. karjaginii) and H. theodorii.

Hypericum apricum Kar et Kir. 1842. Bull. Soc. Nat. Moscow 15:176. – H. karjaginii Rzazade, 1954, Report. AN. Azerb. SSR, 16:882. – H. elongatum auct. Non Lede: Grossh. 1932, Fl. Caucasian 3:71. -perennial herb, stems with rather few scattered amber glandular dots. Leaves are sessile, not glaucous, 1-veined or with up to 3 pairs of lateral branches from lower half, with laminar glands pale and sometimes a few black, marginal glands pale or 1–2 black; lamina smaller, narrow, apex obtuse to rounded. Inflorescence narrowly cylindrical, with lateral cymules 1–3-flowered, without flowering branches bellow bracts and bracteoles narrowly triangular-ovate to triangular-lanceolate, without black glands. Sepals free or united, imbricate or elliptic (or rarely ovate-elliptic) to oblong sub acute to rounded; veins 3, with regular sessile globose black glands or eglandular. Petals rather pale yellow, shortly, black-glandula ciliate. Stamens filaments not red-tinged, filaments yellow. Ovary ovoid, shortly acuminate; styles 3. Capsule ovoid-acuminate to ovoid. Seeds long dark brown. Flowering period from may till July. It grows in dry slopes and limy rocks. Found in Kuba.

Hypericum theodorii Woronov. 1906, Flora Caucasian. 3, 9:43. - perennial herb, stems numeros thin branched, absent-mindedly red glandular. Leaves sessile, elliptics, 5-11mm. Inflorescence corymbose. Sepal sequal, free, ovoid with black ciliate-glands one dge, 3mm. Petals yellow, are longer than sepals, on edge ciliate-glandular. Stamens are numeros. Ovary ovoid with 3 styles. Capsule brown, ovoid to ovoid-lancelote, 11mm. Seeds lightly curved, and longitudinally striped, 2mm. Flowering period from July till August. It grows in clay slopes. Found in Kuba.

2. Materials and Methods

Plant materials were collected in 2015-2016 in Qobustan and Quba districts of Azerbaijan. Also the herbarium specimens stored in the Herbarium fond of the Institute of Botany ANAS were used in this study. Classic comparative morphological methods were used for identification of species.

3. Result

Taxonomy of this genus, have not been studied for many years in Azerbaijan. Only few species of genus have been studied by R. Rzazade (1955). Our aim is to study the endemic species of the Hypericum growing in Azerbaijan.

4. Conclusion

Another critical problem is the continuous practice of illegal logging for fire wood in the forests which are damaging the biodiversity and are resulting in economic and social losses. Due to the poor management in many regions, and especially villages located in proximity to the forests, acts of illegal logging existand pose a significant threat to the forests. The same threat comes from the unsustainable tourism and recreation practices. At the same time the forests of Azerbaijan feel the impact of the global climate change with an increase of forest fires during the summer. For this reason the territory of endemic species has to be protected.

17 species of Hypericum genus was registered in Azerbaijan (Конс. Фл. Кавказа 2012). These are H. androsaemum L., H. apiculatum N. Robson., H. apricum Kar et Kir., H. davisi N. Robson., H. elongatum Ledeb., H. formosissimum Takht., H. hirsutum L., H. linaroides Bosse., H. lydium Boiss., H. nummularoides Trautv., H. perforatum L., H. pseudolaeve N. Robson., H. scabrum L., H. tetrapetrum Fries., H. theodorii Woronov., H. venustum Fenzl., H. xylisteifolium (Spach) N. Robson. Only two of them are endemic species for Azerbaijan: H. apricum (syn: H. karjaginii) and H. theodorii. These endemic species belongs to the sections Hirtella Stef. (H. apricum Kar et Kir.) and Taeniocarpium Jaub et Spach. (H. theodorii Woronov.) Table 1

| Table 1. Endemic species of the genus Hypericum L. in sections | Characteristic features of sections | Species |
|-------------------------------------------------------------|-----------------------------------|---------|
| Hirtella Stef.                                              | Perennial herbs, with branched    | H. apricum Kar et Kir (H. karjaginii Rzazade.) |
| Taeniocarpium Jaub et Spach.                                | Verry perennial herbs, glabrous   | H. theodorii Woronov. |

Figure 1. H. theodorii Woronov.
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Figure 2. H. apricum Kar et Kir (H. karjaginii Rzazade).