

## A NEW LOCALITY OF *HACQUETIA EPIPACTIS* (SCOP.) DC. IN OPOLE SILESIA

Nowe stanowisko cieszynianki wiosennej *Hacquetia epipactis* (Scop.) DC.  
na Śląsku Opolskim

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**ABSTRACT:** The paper presents a new locality of *Hacquetia epipactis* and the general distribution of the species in Opole Silesia.

**KEY WORDS:** *Hacquetia epipactis*, new locality, distribution, Opole Silesia, Poland

### INTRODUCTION

*Hacquetia epipactis* is a perennial plant from the *Apiaceae* family and represents a monotypical genus. It is a rare species of leafy forests from the *Fagetalia* order, which is limited in its range only to Southern Poland (Koczwara 1960, Rutkowski 1998). *Hacquetia epipactis* is a very interesting plant regarding geographical distribution. It has two distinct occurrence centers in Central and Southern Europe separated by a wide disjunction. The main distribution centre is located in the Northeast of Italy, Slovenia, Croatia and in the Southeastern part of the Austrian Alps. The north distribution centre encircles the areas of Southern Poland, Slovakia and Moravia region in the Czech Republic (Hegi 1965, Tumidajowicz 1964, Guzikowa 1970). *Hacquetia epipactis* comes to Poland in holocene through the Moravia Gate in Silesia region (Szafer ed. 1959). Their localities are known from Silesian Foothills, Wielickie Foothills, Beskid Śląski Mountains, Beskid Żywiecki Mountains, Rybnik Plateau, Głubczyce Plateau, Silesia Uplands and Lublin Uplands (Kaznowski 1922, Noskiewicz & Wilczyński 1922, Simm 1924, Kozłowska 1936, Tumidajowicz 1964, Zaręba 1964, Fijałkowski 1965, Sztokowski 1969a, 1969b, 1972, Guzikowa 1970, Buława 1971). In Southern Poland, the north-east range limit of *Hacquetia epipactis* lies through the Upper Silesia and Cieszyn Region (Koczwara 1960, Szafer et al. 1988). Due to Slavik (ed. 1997) *Hacquetia epipactis* occurs in oak-hornbeam leafy forests from the *Carpinion* alliance, in beech woods *Fagion* and also in wet *Ulmenion* forests. It prefers humic, clayey, silty, fresh or wet, from slightly acidic to slightly alkaline soils on different geological basement (Oberdorfer 1994). In Upper Silesia *Hacquetia* was acknowledged as a

vulnerable plant (Parusel et al., eds. 1996) and in Opole Voivodeship as an endangered one (Spałek 1997).

The main aim of the research was to verify historic localities and to determine the actual distribution and the abundance of *Hacquetia epipactis* localities in Opole Silesia. Also its occurrence conditions and the population size of *Hacquetia epipactis* on the newly found locality were described. The threat factors were analyzed and the danger categories were determined due to the IUCN Red Date Categories (Walter, Gillett eds. 1998).

## METHODS

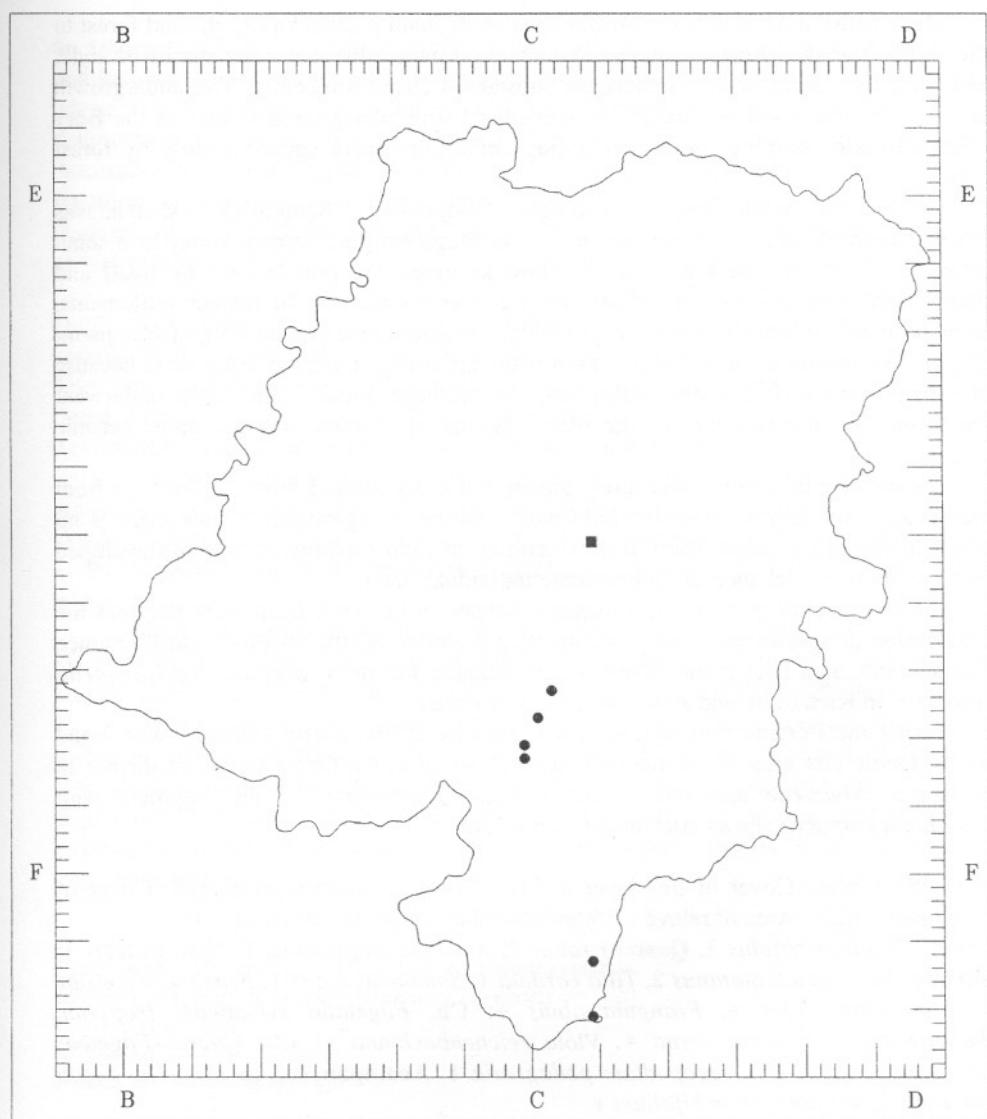
The field works were conducted in 2000-2001 vegetation seasons. The relevés were made using phytosociological approach (Braun-Blanquet 1964, Pawłowski 1972). The syntaxonomical classification is given due to Matuszkiewicz (1982). The nomenclature of the species follows Mirek et. al. (1995) and the physico-geographical units are given with regards to Kondracki (2000). Describing localities, the square number of ATPOL chorological grid were given in brackets (Zajęc 1978). The first two letters indicate the main square 100x100km. Next four figures marks the precise square 2x2km.

## RESULTS

The list of *Hacquetia epipactis* localities in Opole Silesia (Fig.1).

1. Pisarzowice (Fiek 1881, Schube 1903), CF2530
2. Dobra (Schube 1903), CF2511
3. Rozumice (Fiek 1881, Schube 1903, Szotkowski 1969b, 1972, Celiński, Wika 1974-1975), CF7504
4. Leśnik (Schube 1903, Szotkowski 1969b, 1978, 1987, Szotkowski, Szotkowski 1980), CF3404
5. Głogówek (Szotkowski 1969a, 1969b), CF3414
6. Kietrz (Schube 1904), CF6514
7. Opole, CF0504 (new locality)

These localities, with the exception of Rozumice and Opole were not confirmed during the research. The small woods in Pisarzowice have strongly developed undergrowth with the domination of *Frangula alnus* and *Padus avium*. Even in early spring there is semidarkness at the bottom. Because of this inconvenient light conditions, ground flora of the spring aspect is represented by a few species in small numbers, like *Galanthus nivalis* or *Pulmonaria obscura*. The only small, lighter parts of the forest are flooded during the spring period so the conditions there are also improper for *Hacquetia epipactis*.

**Legend:**

● - literature cited locality

■ - new locality

Fig. 1. Distribution of *Hacquetia epipactis* (Scop.) DC. in Opole Silesia

The locality in Dobra was probably situated in small patches of dry-ground forest to the North from the village or maybe in a manorial park cultivated in a naturalistic style. The park has unfortunately undergone substantial changes recently. The undergrowth layer of the tree stand is strongly developed. Also the dry-ground forests of the Bory Niemodlińskie complex are under strong anthropopressure caused mainly by forest economy.

The locality in Głogówek, accordingly to unpublished Szotkowski's sketch, was situated in the Northern part of the city of Osobłoga marginal stream valley in a small fragment of dry-ground forest. As Szotkowski states, the population was small and under high anthropopressure because of close neighbourhood of human settlements. Replanting to domestic gardens was probably, a crucial cause of vanishing of *Hacquetia epipactis* in this location. Another reason is the upraising of ground water level because of overgrowing and chocking with plants the drainage ditches. The forest underwent swamping and the structure of the plant association changed, e.g. the alder became dominant.

The locality in Leśniki was surely situated in a dry-ground forest to the East from the village. But despite intensive field works during 3 vegetation seasons there is no confirmation of the stand. The forest biocenosis of *Tilio-Carpinetum* is well-developed here, so, there is a chance of finding some individuals later.

The last locality in Kietrz is a mistake. Schube in his work from 1904 describes the distribution of species using only county capitol names. So the locality from Rozumice was annotate as a Kietrz one. There are no suitable forests or coppices for *Hacquetia epipactis* in Kietrz city and also in surrounding areas.

During the floristic investigation, a new locality of *Hacquetia epipactis* was found within Opole city area. It is situated in a small wood in the Opole-Grudzice district in *Fagetalia sylvaticae* association. The floristic composition of the fragment with *Hacquetia epipactis* shows after-mentioned relevé.

Date 25.04.2000; Cover of tree layer a-70%; Cover of shrub layer b-30%; Cover of herb layer c-80%; Area of relevé - 150m<sup>2</sup>; Number of species of relevé - 16.

**Trees:** *Carpinus betulus* 3, *Quercus robur* 2, *Acer pseudoplatanus* 1, *Ulmus laevis* 1;

**Shrubs:** *Acer pseudoplatanus* 2, *Tilia cordata* 1, *Sambucus nigra* 1, *Fraxinus excelsior* +, *Acer platanoides* +, *Frangula alnus* +; **Ch. Fagetalia sylvaticae:** *Isopyrum thalictroides* +, *Ficaria verna* +, *Viola reichenbachiana* +; **Ch. Querco-Fagetea:** *Anemone nemorosa* 1, *Aegopodium podagraria* 1; **Acompanying species:** *Hacquetia epipactis* 4, *Maianthemum bifolium* +.

The natural origin of this locality is not certain. The wood lies close to the urbanized area of Opole-Grudzice. Several paths, connecting inhabited area with football field, go through the forest, some of them just by the *Hacquetia epipactis* locality. There is also much to be said for the naturality of the locality, e.g. the occurrence of the *Hacquetia epipactis* in three places, biocenosis composition and structure and *Hacquetia epipactis* population size and structure with many juvenile individuals expanding to the open gaps.

Despite the localization of the *Hacquetia epipactis* nearby inhabited area there is no evidence of direct or indirect substantial threats here. The population size is stable and numerical force is about 110 inflorescences. This is clearly less than in Rozumice, where in 2001 almost 7200 inflorescences were noticed, but it would be unlikely to exterminate, e.g. by replanting to domestic gardens, quite a large population at all. According to Forest Management Plan of the Polish Forest Authority there is no intention of intensive silviculture works, special clear cuttings. There is also no evidence of pest gradation, unstable water conditions, wind or fire damages or even endangerment.

Considering the causes of disappearance of *Hacquetia epipactis* localities in Opole Voivodeship as well as geographical situation of a new locality, it seems to be sensible and indispensable to launch a permanent monitoring on existing localities. Then, there will be chances to find the way out when the population will be exposed to threat. For example, possible excessive development of a shrub layer, first of all the *Acer pseudoplatanus* and *Sambucus nigra*, should be stopped.

For the protection of the *Hacquetia epipactis* locality in the Opole city, the local non-government conservationists filed a special project in municipality to set up an „ecological ground” – legally based form of nature conservation in Poland. The subject of the protection will be the population of *Hacquetia epipactis* and some species of woodland birds.

*Hacquetia epipactis* is considered to be generally a vulnerable plant (Parusel et al. 1996, Nowak 2000) or endangered one (Spalek 1997) within Opole Voivodeship. In sozofloristic scale from 5 points (*Corydalis cava*) to 80 points (*Corallorrhiza trifida*), *Hacquetia epipactis* gains 35 points. Considering the conservation status of the species localities (Nature Reserve in Rozumice, planned Ecological Ground in Opole), individual protection by the Species Protection Act which was put into force in September 2000, discovering the new locality at the edge of geographical range, no evidence of fundamental, direct or indirect anthropogenic threats, it seems, that the vulnerable category is adequate.

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## STRESZCZENIE

Artykuł przedstawia wyniki badań botanicznych prowadzonych w roku 2000 i 2001 skoncentrowanych na ustaleniu aktualnego rozmieszczenia i stanu populacji cieszynianki wiosennej *Hacquetia epipactis* w województwie opolskim. Podczas badań terenowych potwierdzono jedynie stanowisko w Rozumicach, znajdujące się na południu Opolszczyzny oraz odkryto nowe stanowisko w lesie, w Grudzicach (dzielnica Opola). Określono przynależność fitosocjologiczną zbiorowiska, w którym występuje cieszynianka oraz dokonano analizy stopnia zagrożenia gatunku w województwie opolskim z podaniem kategorii wg metody Światowej Unii Ochrony Przyrody (Walter, Gillett eds. 1998).

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