

Betula szafieri — a new species of the genus *Betula* L. from Poland

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Abstract

This paper presents a description of a new species — *Betula szafieri* Jentys-Szaferowa ex Staszkiewicz, which had been known earlier under the name: *B. "nova"*, *B. oycoviensis* cv. 'Szaferi'.

Key words: new species, *Betula szafieri* in Poland

Professor Janina Jentys-Szaferowa, together with a group of her co-workers and pupils carried out studies for many years on *Betula x oycoviensis* Besser (pro spec.) and its origin. These were wide-scope investigations including cultivation and experiments. Among others, controlled crossings were carried out of *B. x oycoviensis* × *B. x oycoviensis*. They resulted in obtaining a progeny composed of three types of segregants, i.e. type "verrucosa", type "oycoviensis" and a type determined as "nova" (Jentys-Szaferowa 1967). In effect of further cultivation it appeared that type "nova" was a dwarf form, which blossomed and bore fruit very early, which facilitated further experiments. By pollinating the birches of the type "nova" with the pollen of *B. pendula*, and vice-versa by pollinating "verrucosa" (*B. pendula*) type specimens with a mixture of the pollen of a number of specimens of the type "nova", *B. x oycoviensis* was obtained. This constituted evidence that the birch of the type "nova" is one of the parents of *B. x oycoviensis*, while its other parent was *B. pendula*, which had been known much earlier. In the year 1967 the birches of the type "nova" were called by Jentys-Szaferowa *B. nova*, but no diagnosis was submitted.

That author was of the opinion that considering certain morphological characters, *B. nova* originated due to the crossing of a species from the complex *verrucosa* with some species of Section *Nanae*, and that it might have been a species approximating the present *B. humilis* Schrank. Introgression

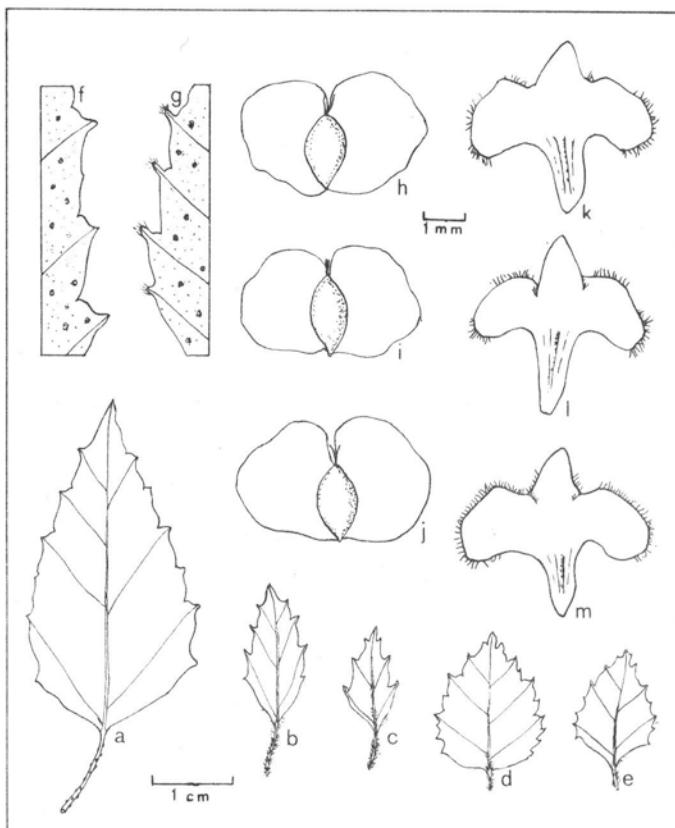


Fig. 1. *Betula szafieri*. a — leaf of long shoot; b, c — leaves of fertile short shoot; d, e — leaves of sterile short shoot; f — margin of leaf from long shoot; g — margin of leaf from fertile short shoot; h, i, j — nuts with wings; k, l, m — cone scales

may have occurred as the retrograde crossings of that hybrid with the birches of the Section *Nanae*, by which the type *B. nova* may have been established (Jentys-Szaferowa 1967). The thorough knowledge of the morphological characters of *B. nova* facilitated finding it in natural conditions. In the year 1966 Korczyk (1967) found four specimens of that birch in the form of shrubs in Kobylańska Valley lying north-westwards of Cracow, and two years later, i.e. in 1968, one specimen was found on Skiełek (Szkiełek) Hill in the Beskid Wyspowy range (West Carpathian Mts.) during an excursion of workers of the Department of Plant Variability of the Institute of Botany; it was the aim of that excursion to visit the recently discovered locality of *B. x oycoviensis*. In these two cases *B. nova* was found beside *B. x oycoviensis*.

In 1972, Szwabowicz determined the number of chromosomes for *B. nova*. Eight specimens derived from experimental cultivation, and one

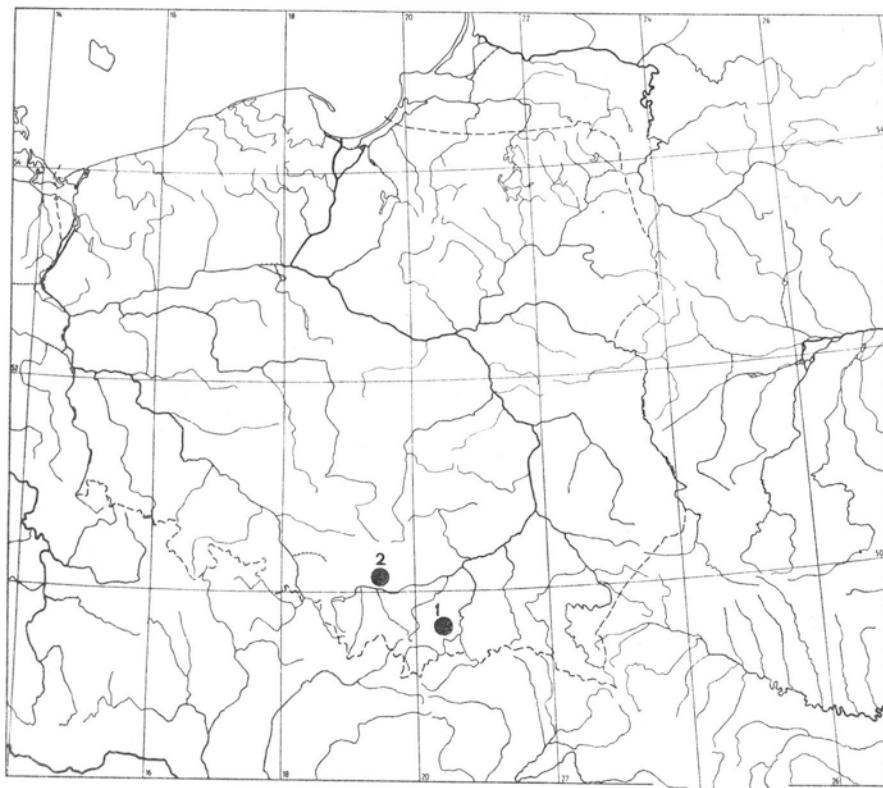


Fig. 2. Distribution of the localities in which *Betula szaferi* was collected. 1 — Skiełek Hill (*locus classicus*); 2 — Kobyłańska Valley

specimen from Kobyłańska Valley showed the number $2n = 28$, i.e. similar to *B. pendula* and *B. x oycoviensis*.

It resulted from studies carried out by Pawłowska (1980) and based on flavonoid compounds that no relationships existed between *B. nova* and *B. humilis*, and consequently with Section *Nanae*. Evidently, the origin of *B. nova* continued to be enigmatic. In 1979 Jentys-Szaferowa, who accepted *B. nova* to be a natural component of the flora of Poland, attributed to that species the status of a cultivar and the name 'Szaferi'. Nevertheless, later on, in the last period of her life she intended to describe the cultivar as a taxon, but death prevented her from realizing that plan.

There is no doubt that it is only due to Professor Jentys-Szaferowa's persistent studies aiming at the elucidation of the origin of *B. x oycoviensis*, and to the experiments and cultivation works performed very conscientiously under her supervision, that a new taxon, previously unknown to science, was called into being by way of experiments, which later on was found

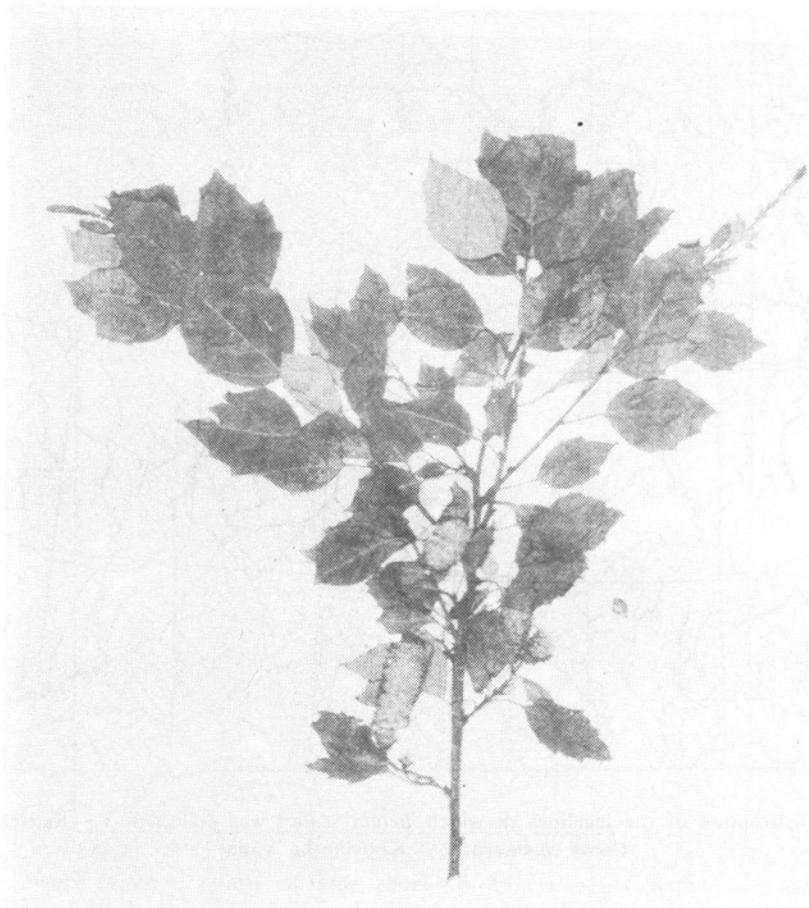


Fig. 3. Holotype of *Betula szaferi*, spec. nova (KRAM 303846)

under natural conditions. By giving the epithet 'Szaferi' to *B. nova*. Jentys-Szaferowa wished to commemorate her husband, Professor Władysław Szafer, a great Polish scientist. To appreciate her intention, the present author described that taxon in this paper, which has been known for over 15 years as *Betula szaferi*. In light of the studies hitherto performed (Jentys-Szaferowa et al. 1974) it is doubtless that this is not a very viable species, but one may hope that as one of the parents of *B. x oycoviensis*, it will always be found in the company of that hybrid species.

Betula szaferi Jentys-Szaferowa ex Staszkiewicz, sp. nova. Frutex ad 1,2 m altus, dense ramosus, ramis saepius horizontaliter patentibus. Rami annotini castanei, glandulis sessilibus rotundis et pilis brevibus obtecti. Rami bi-

-triennes livido-castanei, verrucosi. *Brachyblasti follis* 5-15 obsiti, sat longi. *Folia brachyblastorum* 5-40 mm, saepe 10-25 mm longa, ovata vel rhomboidea, basi laminae acuta vel rotundata, apice acuminata, nervis lateralibus 2-4 — jugatis, pagina utraque glandulis numerosis tecta, margine remote serrata vel mamillato-serrata et laxe pilosa, petiolo 3-10 mm longo, dense piloso et glandulis sessilibus obtecto. *Folia dolichoblastorum* multo majora, 20-65 (95) mm (petiolo omissus) longa, petiolo 15-25 mm longo. *Amenta femina plurima*, jam in plantae hornotinae brachyblastis apparentia, variabilia, a subglobosis usque ad cylindrica, 5-25 mm longa, 5-8 mm crassa. *Squamae femineae* 3,3-4,5 mm longae, 3,0-5,0 mm latae, basi obtriangulares, loborum marginibus ciliatis, lobo medio triangulari, lobis lateralibus ad latera et paulum retrorsum versis, quam lobus medius longioribus. *Samarae nucula* 2 mm longa, 1 mm lata, obovata vel subrhomboidea, alae ad 2 mm latae, parte media (rarius superiore) latissimae, nuculae apicem superantes. *Amenta masculina* in angulis foliorum singula (raro bina), raro apice dolichoblasti sita.

Positio taxonomica: species sectionis Verrucosae, seriei Pendulae.

Holotypus: Polonia meridionalis, palatinatus Nowy Sącz (Carpati Occidentales, montes Beskid Wyspowy), mons Skiełek (Szkiełek) prope pagum Łukowica; in betuleto, altitudine 720 m s.m., 16 Julii 1968, lg. J. Jentys-Szaferowa; KRAM 303846.

Ethymologia: Professor Dr Władysław Szafer (= Ladislaus Szafer), 1886-1970, cui hanc speciem detectrix ejus J. Jentys-Szaferowa dedicare voluit per plantae denominationen honoratur.

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Brzoza Szafera — nowy gatunek rodzaju Betula L. w Polsce Streszczenie

W czasie prowadzenia przez Jentys-Szaferową badań hodowlano-doświadczalnych nad *Betula x oycoviensis* Besser (pro spec.) uzyskano, w wyniku kontrolowanych krzyżowań

B. x oycoviensis x *B. x oycoviensis*, potomstwo złożone z trzech typów segregantów, z których jeden został nazwany typem "nova" i uznany za jednego z rodziców *B. x oycoviensis*, podezas gdy drugim była *B. pendula*. W 1967 roku Jentys-Szaferowa dla brzóz typu "nova" użyła nazwy *B. nova*, jednak nie podała diagnozy. W 1979 roku uznala ją za kultywar w ramach *B. oycoviensis* (cv. 'Szaferi'), mimo iż już wcześniej okazy o identycznych cechach znane były ze stanu dzikiego. W 1966 roku, Korczyk znalazł 4 okazy tej brzozy w Dolinie Kobylańskiej, a w 1968 roku jeden okaz znaleziono na górze Skielek (Szkielek) w Beskidzie Wyspowym. Zgodnie z przepisami Międzynarodowego Kodeksu Nomenklatury Botanicznej okazy te można było opisać jako nowy takson w obrębie rodzaju *Betula*. W ostatnim okresie swego życia Jentys-Szaferowa nosiła się z takim zamarem, jednakże nie zdążyła tego zrealizować. Chcąc uszanować jej wolę, w niniejszej pracy opisano ten takson jako brzozę Szafera. Stało się to w 100 lecie urodzin tego wielkiego, polskiego botanika.