

# PLETHORA OF PLANTS – COLLECTIONS OF THE BOTANICAL GARDEN, FACULTY OF SCIENCE, UNIVERSITY OF ZAGREB (5): *GLADIOLUS*, *CROCUS* AND OTHER MEMBERS OF IRIDACEAE FAMILY

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The plant lists of *Gladiolus*, *Crocus* and other members of the Iridaceae family grown in the Botanical Garden from 1895 to 2021 are studied, with a supplement for the genus *Iris*, analyzed in 2019. The nomenclature, synonymy and origin of plant material were arranged. Lists of species grown in the last 126 years are constructed to show that throughout that period at least 448 taxa of wild and cultivated Iridaceae from 30 genera inhabited the Garden's collections. Today we have 371 taxa out of 21 genera. Out of this number, the genus *Gladiolus* accounts for 35 taxa (formerly 50), *Crocus* 7 (formerly 27), while *Iris* includes as many as 291 species, cultivars and hybrids. The remaining 18 Iridaceae genera are represented by 38 taxa.

**Key words:** Zagreb Botanical Garden, Faculty of Science, historic plant collections, *Gladiolus*, *Crocus*, Iridaceae collection

**Kovačić, S.: *Obilje bilja* – zbirke Botaničkoga vrta Prirodoslovno-matematičkoga fakulteta Sveučilišta u Zagrebu (5): *Gladiole (Gladiolus)*, *šafrani (Crocus)* i ostali članovi porodice perunikovki (Iridaceae). Nat. Croat., Vol. 30, No. 1, 289–329, 2021, Zagreb.**

U ovom članku sastavljeni su popisi svih članova porodice perunikovki (Iridaceae) uzgajanih u Botaničkom vrtu zagrebačkog Prirodoslovno-matematičkoga fakulteta između 1895. i 2021. godine, s dodatkom novih svojta perunika (rod *Iris*), koje nisu bile uključene u prošli nastavak ove serije. Uredena je nomenklatura i sinonimika vrsta te istraženo podrijetlo biljnog materijala. Rezultati pokazuju da je tijekom 126 godina kroz zbirke Botaničkoga vrta prošlo najmanje 448 divljih i uzgojnih svojta irisovki iz 30 rodova. Danas imamo 371 svojtu unutar 21 roda ove porodice, od čega 291 pripada rodu perunika (*Iris*). Gladiola (rod *Gladiolus*) imamo 35 svojti od nekadašnjih 50, šafrana (rod *Crocus*) sedam od nekadašnjih 27, dok je preostalih 18 rodova predstavljeno s 38 svojti.

**Ključne riječi:** Botanički vrt PMF-a u Zagrebu, povijesne zbirke biljaka, *Gladiolus*, *Crocus*, porodica Iridaceae

## INTRODUCTION

The full review of the plant collections in the Botanical Garden of the Faculty of Science, University of Zagreb (in further text "Botanical Garden" or "the Garden") initiated in 2012 is continuing with inventories of indigenous, wild and cultivated taxa of the Iridaceae Juss. family, with the emphasis on the genera *Gladiolus* L. and *Crocus* L.

General facts about the Garden and its collections were published in the first paper of this series (KOVAČIĆ, 2015) and here will not be repeated. Following the established principles, I made an inventory of the Iridaceae family members cultivated in our Botanical Garden since 1895: as the genus *Iris* was described in KOVAČIĆ (2019), in this paper I am presenting only a supplement to the published inventory of that large genus. The emphasis among Iridaceae in general is this time on gladioli, hybrids and cultivars of which, together with the 'bearded' iris hybrids, constitute the Garden's *Iridarium*. There is also a broader portrayal of the crocuses in our Garden's collections.

The monotypic Iridaceae family, of possible Antarctic-Australian origin, arose between 107 and 82 million years ago (JANSSEN & BREMER, 2004; GOLDBLATT *et al.*, 2008). The family is nearly worldwide in its distribution, but is by far the most abundant and diversified in Africa. Most of the species live in temperate, subtropical and tropical regions, but generally occur in a broad range of habitats; some are also adapted to very particular conditions, such as swamps or subarctic grasslands. Iridaceae are mostly deciduous perennial herbs, with only several South-African endemic shrubs and evergreen subshrubs of *fynbos*.

The family today includes at least 66 genera with 2200 species (CHRISTENHUSZ & BYNG, 2016), but this conservative number could be much higher (for example, up to 80 genera are cited by the *Flora of China*). One of the most famous Iridaceae-experts, South African–American professor Peter Goldblatt (1943–) named more than 1300 taxa during his productive career, and divided the family into several subfamilies and tribes (GOLDBLATT, 2000; GOLDBLATT & MANNING, 2008; GOLDBLATT *et al.*, 2008), the complex inter-relations of which are not included in this inventory. Nevertheless, it is interesting to note that, unlike many others, the genera of Iridaceae have seldom changed affiliations (not a single one in our collection!): they are easy to recognize, characterized by long, narrow leaves with parallel venation, three-partite flowers and underground (rhizomatous, bulbous or cormous) storage organs. However, during the centuries many taxa changed genera, while some local genera have been incorporated into larger ones (as could be seen, for example, in *The World Flora Online*).

From the botanic garden point of view, it is also interesting that many of the Iridaceae taxa are well-known ornamental plants. Several genera are extensively cultivated: *Iris* being the most famous, followed by *Gladiolus*, *Crocus*, *Freesia* and many smaller ones, like *Crocasmia*, *Libertia*, *Tigridia* or *Triteleia* (Photo-tab. 1). The number of cultivars and hybrids today is enormous: for example, there are more than 42,000 officially registered 'bearded' iris taxa alone, with at least twice as many unregistered, making this genus generally the most popular monocotyledon in horticulture, worldwide (details in KOVAČIĆ, 2019). Genus *Gladiolus* follows.

Instead of rhizomes or bulbs, gladioli have corms (bulbotubers). In the colder parts of the world, those are commonly dug up and stored during wintertime, while most of the genus' natural range is in the Mediterranean climates of the Old World (Southern Europe, African Cape Region).

There are about 300 wild *Gladiolus* species recognized today (BARKER & GOVAERTS, 2016), with about 250 indigenous to southern and another 75 to tropical regions of Africa (GOLDBLATT & MANNING, 1998). The Mediterranean region contains less than 10% of this wealth: according to the *Euro+Med Plantbase* only 22 species, out of which five are indigenous to Croatia: *Gladiolus illyricus* W.D.J. Koch, *G. italicus* Mill., *G. com-*

*munis* L., *G. imbricatus* L. and *G. palustris* Gaudin (*Flora Croatica Database*). The genus *Gladiolus* is subdivided into many sections, but the references alone would surpass the extent of this inventory: it should be simply emphasized that the systematics of both wild and cultivated gladioli are complicated and highly ambiguous (f.e. DATTA, 2020). Gladioli have also been extensively hybridized since the end of the 18<sup>th</sup> century and, again, the relevant literature is immense (f.e. ANONYMOUS, 1904; CRAWFORD, 1911; CREASEY, 1911). As for the irises (*American Iris Society*), the world authority registering gladioli hybrids is also situated in the USA: since 1958, it has been the *North American Gladiolus Council*. Still, there are many more unregistered than registered hybrids. From the botanic garden point of view it would be sufficient to emphasize that, leaving aside the natural species and varieties, the most common classification of the modern-day gladioli is in to three hybrid groups (BRICKELL, 1989), as in our collections (KOVAČIĆ, 2020). Winter hardy, 'Nanus' hybrids are the smallest and most gracious old forms of 19<sup>th</sup> century horticultural gladioli with several stems, the flowers of which are simple and wide open, commonly wearing colourful spots on their perianth leaves (Photo-tab. 3ab). Here are also placed some of the historic hybrids; for example, the branched 'Ramosus', which are taller than the ordinary 'Nanus'-es, or dense-flowering 'Butterfly' of bright colours (Photo-tab. 3b). The gladioli of the 'Primulinus' group are a bit taller and sturdier, single-stemmed and carrying bicolor, more or less triangular-shaped flowers (Photo-tab. 3ac). They are recognized by their "hoods": the folded top perianth leaf covers the centre of the flower, more or less hiding the pistil and the stamen. Some of the 'Primulinus'-es are almost as tall as the modern 'Grandiforus' giants (Photo-tab. 3ad), resulting in these groups being often merged for commercial purposes. The largest, but frost-tender, 'Grandiforus' gladioli can be up to two meters high; bearing a metre long flowering spike with huge, fully open flowers in all different colours and nuances. Today the formerly famous 'Gandavensis' group is incorporated into this hybrid line of gladioli (Photo-tab. 3d), a crucial 19<sup>th</sup> century stepping-stone in the history of the hybridization of this genus (*Missouri Botanical Garden Research*). However, if one is growing members of all aforementioned groups – as we are in our Garden *Iridarium* – one will soon realize that there are many types of hybrids which come "in-between", having features of more than a single group – or none in particular. Moreover, we are also saving the seeds collected from our gladioli (Photo-tab. 3a), bringing more confusion to their systematics. And more colours!

*Crocus* is also one of the Croatian native Iridaceae-genera, and a truly complicated one: the species' distributions of this Euro-Asian genus are partly disjunctive, partly overlapping, leaving the number of wild taxa somewhere between 90 (MATHEW, 1983) and 235 (RUKŠĀNS, 2017).

Although not as much as irises or gladioli, crocuses are also horticulturally interesting: the range of cultivars and hybrids, comparatively, is quite modest, and there is no world authority to register their "names". However, there is "The Saffron" (*Crocus sativus* L., but probably a cultivar from long ago), a mythical plant of unknown origin, of which the red stigmas are "the most expensive spice in the world", according to the widely disseminated (and not wrong) belief. Besides the – in nature extinct – saffron, the immense horticultural popularity is also the reason for the endangerment of some Iridaceae in their natural habitats. The *IUCN Red List of Threatened Species* evaluates more than 50 Iridaceae-taxa as CR, EN and VU (including 9 gladioli), while the

*European Red List* (BILZ *et al.*, 2011) depicts European endemic *Iris boissieri* Henriq. as critically endangered (CR), while *Crocus cyprius* Boiss. & Kotschy and *C. hartmannianus* Holmboe are vulnerable (VU). Many more Iridaceae are being assessed as of low concern (NT), or data deficient (DD).

Total of 35 Iridaceae species and subspecies from five genera inhabit the Croatian national territory: besides *Crocus*, *Gladiolus* and *Iris* (incl. *Hermodactylus* acc. to the recent views), there is also *Romulea* (*Flora Croatica Database*; Photo-tables 1, 2, 3a). *Flora Croatica Database Red List* holds two vulnerable (VU) irises (depicted in KOVAČIĆ, 2019). According to the *Ordinance of strictly protected species* the whole *Iris* genus (12 species, two subspecies and two natural hybrids) and the whole *Gladiolus* genus (five species) are statutorily strictly protected in all Croatian wild habitats, as well as three endemic crocuses: *Crocus dalmaticus* Vis., *C. malyi* Vis. and *C. thomasii* Ten.

## MATERIAL & METHOD

All the recent gladioli, crocuses and most of the other Iridaceae-taxa grown in the collections of our Botanical Garden are planted outdoors, with a minority overwintering in the cold greenhouse, depending on the life requirements of each particular taxon. Samples for the wild taxa collections in our Garden are obtained through field research in Croatia (or, during that time, ex-Yugoslavia) or through the *Delectus (Index) Seminum*-network of inter-botanic-garden seed exchange; while the collections of cultivars and hybrids are supplemented from the specialist nurseries, or from private collectors. Details on Iridaceae acquisition in general were published in KOVAČIĆ (2019), as were the main sources used for constructing the lists of taxa growing in the Garden's collections from its establishment until January, 2021 (also explained in KOVAČIĆ, 2015; BUDISAVLJEVIĆ & KOVAČIĆ, 2020).

The initial part of this study is based on a booklet written by the founder of our Botanical Garden, Professor Antun Heinz (HEINZ, 1895–1896), imprecise though it was in stating the details in the inventory. After that, there is a gap of more than 50 years throughout which the data on the Garden collections are missing – until the recent records were founded in the late 1940s, and since then systematically gathered.

The inventory-lists of taxa described here comprise three informal data-sets:

1. Iridaceae-taxa of various genera are listed in Tab. 1: partially of wild (incl. *Iris* and *Gladiolus*), but mostly of cultivated origin, brought to the Garden from the field excursions or/and obtained via *Index (Delectus) Seminum* publications. The taxa are systematized according to the recently valid nomenclatural views whenever possible. However, as explained in KOVAČIĆ (2015), we are also trying to conserve the original plant names, i.e. the entries under which the specimens arrived to our collection, especially when the plants are long-gone and it is impossible to establish the recent status of some taxon. This is often the case for the taxa of Croatian (and wider, ex-Yugoslavian and Balkan) flora, notorious for the immense range of “small species” described, which are hardly traceable or/and incorporated to the other species-ranges. Therefore, for the indigenous Iridaceae-taxa *Croatian Flora Database* was consulted first, as a nomenclatural authority, besides *The World Flora Online* (for the exotics).

2. *Gladiolus*-garden varieties of the prominent horticultural groups, grown in the Garden *Iridarium* among the ‘bearded’ irises for the Summer-effect, are listed in Tab.

2 by their hybrid ('Early Rose', Photo-table 3d) or cultivar ('Murielae', Photo-table 3a) names. Due to the many "untraceable" (not registered by the *North American Gladiolus Council*) names, (possible) affiliation and valid name of the hybrid/cultivar is depicted in a separate column, while most of the plants growing in our collection could at least be placed in one of the common horticultural gladioli groups (BRICKELL, 1989).

3. As a supplement to the Tab. 4 published in KOVAČIĆ (2019), Tab. 3 here enumerates the 'bearded' *Iris*-hybrids acquired for our Garden *Iridarium* collection since the last count in September, 2019 (Photo-tab. 4). As the main authority for checking the "names", *Iris Encyclopedia* of the *American Iris Society* was consulted, as in KOVAČIĆ (2019).

## RESULTS & DISCUSSION

### Iridaceae

Besides four *Iris*-species named by HEINZ (1895–1896, p. 23) as living in our Botanical Garden in the late 19<sup>th</sup> century (described in KOVAČIĆ, 2019), "different species and cultivars" of gladioli at the time also lived outdoors, as well as "some springtime, some autumn" species of crocuses, among which (singled out by its name) *Crocus sativus*. "In the houses" lived *Tigridia pavonia* and "some" *Sisyrinchium*(s?), as well as "some" *Ixia*, *Sparaxis* and *Babiana* species. Unfortunately, we do not know which taxa were there, nor where those plants originated from (Tab. 1).

Representatives of Heinz's (1895–1896) Iridaceae-genera we hold in the Garden up to the day: during the years, as Tab. 1 shows, besides *Iris* (described in KOVAČIĆ, 2019) we grew the representatives of about 30 genera (that number, of course, depends on the nomenclature authority consulted). Several deserve some further details.

Representatives of the *Babiana* genus never lived long in our Garden collections. However, two samples of *B. fragrans* (Jacq.) Steud. and *B. pygmaea* (Burm.f.) Baker seemed to survive for decades, which is hardly believable: though today there is nobody left working in the Garden who could know more about these plants, the years from the database cards are doubtful. In those two cases there is nothing else written in the cards, but the year "1984", which could be only the year of database checking, not the date of babianas actually living in our greenhouses. *Crocasmias* were also cultivated in the greenhouses from the beginning (HEINZ, 1895–1896), most probably the *C. × crocosmiiiflora* (Lemoine) N.E.Br. hybrids, often referred to as "montbretias". Those tender plants were established by the famous French horticulturist, Victor Lemoine, in 1880. "Montbretias" does not overwinter outdoors, and in our Garden lived shortly. Since the hardy *Crocasmia* 'Lucifer' – hybridized by the British gardener Alan Bloom in 1979 – was introduced to our Garden, we are growing it outdoors (recently in our *Iridarium*, Photo-tab. 1). Libertias are fully hardy, though flower for a short period of time. Native species, *Romulea bulbocodium* (L.) Sebast. & Mauri was repeatedly brought from many wild locations during the years, but lives shortly. On the contrary, American genus *Sisyrinchium* is often found growing scattered, as naturalized in Croatia (*S. montanum* Greene and *S. bermudiana* L. are included to *Flora Croatica Database*), so in the Garden. For several recently found specimens we do not know the origin ("nn" in Tab. 1), while they probably came to the Garden as

“companions” to other plants (f.e. the ‘carnivorous’ hybrids we purchased for our collection), and spread sub-spontaneously (Photo-tab. 1). Tiger-flowers also never lived long in our collection, especially the specimens that were sown from the seed received as *Tigridia pavonia* (L.f.) DC., also named by Heinz (1895–1896). One strain, purchased recently as “*Tigridia mix*”, shows extraordinary flowering potential, exhibiting flowers in our *Iridarium* from late May to late September (Photo-tab. 1). These also comprehend some named cultivars/hybrids, such as ‘Lilacina’ or ‘Alba’ that could be purchased separately.

It is worth mentioning that since the 1950-ies, for decades, the non-native small bulbs lived in the Garden nursery closed to the public, as a permanent collection planted in clay pots (*bulbarium*). However, some more proliferate species often self-seeded themselves around, subsequently pushed out original, more sensitive, species from their pots. Such events most probably went unrecognized, due to the many staff changes and shortages throughout the years, and constant lack of specialists. Today we know very little of this *bulbarium*, which ceased to exist in the late 1980-ies.

## Crocus

The confusion with existing, missing and probably never existing data-cards of the crocuses in our database is astonishing. For example, the *Crocus* “*napolitanus*”, “*neapolitanus*” and “*naepolitanus*” were considered synonyms at some point, and then separated by person or persons unknown, according to the unidentified literature authority (Tab. 1).

Native crocuses were brought to the Garden from various field-trips during 20<sup>th</sup> century by Garden employees, as well as by our Faculty professors and their colleagues, and were placed in the poorly documented nursery bulb-collection (Dr Regula, pers. comm.), often without being inventoried. I have found in my retired colleagues’ personal lists some *Crocus* taxa which were never registered to the Garden database (among them, all three Croatian statutorily strictly protected species). Also, I found some among a huge collection of over 250,000 photographs of our Garden’s long-time amateur photo-documentarist, Mirna Kirin (Tab. 1). According to Dr Regula (pers. comm.) the bulbs were sometimes brought from the field trips without the knowledge on their affiliation (or just as “*Crocus* sp.”) and were left unnamed in the *bulbarium* “until flowering” – but then never further examined. Most of these withered in time, but several taxa left their pots and spread across our Arboretum fields. Today we do not know much of the origin of crocuses that “went astray”, while they were never inventoried to our database. So, today, there is the “purple-and-white lake” in our Arboretum (Photo-tab. 2), which allegedly originated from “several bulbs”(unregistered), brought in the 1950s from the nearby Mt Medvednica by our first Garden manager, Dr Sala Ungar (Dr Regula, pers. comm.). These crocuses were “since always” referred to as “*Crocus vernus*” (as syn. of “*C. napolitanus*”) or “*C. neapolitanus*” (even “*C. naepolitanus*”, also used as syn. of “*C. napolitanus*”) in the broadest sense, which are not registered in our database as growing free throughout our Arboretum.

Crocuses of our part of Europe were always difficult to identify and fragmented into numerous sub-special categories: subspecies, varieties, subvarieties and forms (cp. MILOVIĆ, 2016; and literature within). To (over)simplify the problem, POLDINI &



COASSINI LOKAR (1979) stated: "The *Crocus* of this region [South-eastern Alps] is represented by four entities: *C. napolitanus* Mord. & Loisel., *C. albiflorus* Kit. ex Schult., *C. reticulatus* Stev. ex Adam. and *C. weldenii* Hoppe ex Baker". However, MILOVIĆ (2016) established that 10 *Crocus* species could be easily distinguished in Croatia alone: using the key provided, we found that the purple taxon prevailing in our Arboretum (Photo-tab. 2) is actually *C. heuffelianus* Herb. (ex *C. vernus* (L.) Hill. ssp. *vernus*), followed by *C. vernus* (L.) Hill (ex "*C. albiflorus*", i.e. *C. vernus* ssp. *albiflorus* (Kit.) Asch. et Graebn.) and a bit of *C. variegatus* Hoppe et Hornsch. (ex *C. reticulatus* Steven ex Adams). If Dr Ungar indeed brought – what is today known as – *C. heuffelianus* from Mt Medvednica, the origins of the other taxa, mixed with this one, are unknown.

Meanwhile, to complicate things even more, commercial *Crocus* cultivars purchased for the horticultural purposes, which were planted around the Garden for the "Spring effect", remained unregistered (for some reason, for a long time all "horticultural purchases" of corms, bulbs, rhizomes and annuals, which were not pre-grown from seed in our Garden nurseries, were not inventoried in our Garden database). During the years, at least some hybridizations among the crocuses must have taken place, while odd forms and shapes occur among the "common" plants in our Arboretum (the same is happening with our sub-spontaneously growing primroses, genus *Primula*). Only at several spots in the Rockeries with native flora do we have information on the origin of crocuses (Tab. 1, Photo-tab. 2), which was sometimes from the recent ex-Yugoslavian countries. Here, also, a problem exists: there are some small, hand-written cards depicting some taxa, inserted at the end of the *Crocus* genus regular data-cards in our database, with unclear purpose. Some of these "names" were also registered in our regular paper cards (e.g., "*Crocus naepolitanus* Mord. et Loisel. is *C. vernus* (L.) Hill subsp. *vernus*"), but mostly not, just carrying some synonymy (for example, "*Crocus biflorus* Mill. var. *alexandri* (Ničić) Vel. is *C. alexandri* Ničić"). These small cards every now and then specify location or/and year (Tab. 1), but without any further explanation. Today we do not know when or why they were written. According to Dr Regula (pers. comm.), some crocuses were received during the 1960s from the Montenegrin expert, Dr V. Pulević, who wrote the revision of Yugoslavian taxa (PULEVIĆ, 1976) of the time, so the little cards could be the remnants of those samples. We do not know where those plants, if any, were kept: in the *bulbarium*, or planted in the open? Why so many taxa were not registered in the Garden database, today we do not know. We could assume that some lists and names were left in the private field-diaries, cultivated bulbs purchased for the horticultural displays were unregistered, and at least some of the original data-cards were lost. Until the ongoing analysis of our recording system is finished, coordinated and explained (c.f. BUDISAVLJEVIĆ & KOVAČIĆ, 2020) it is hard to tell how many *Crocus* (and many other) taxa we had in the Garden during the years: an estimation is all we have.

## Gladiolus

*Gladiolus* is another perplexing Iridaceae genus, but – as we never had many wild species in the Garden, but hybrids – most of the confusion is related to the cultivated plants. Several wild gladioli (though not always from wild localities) are listed in Tab. 1, while the cultivars and hybrids are given separately in Tab. 2. The reason for this is practical: horticultural nomenclature is difficult to follow, while an important part of our varieties, forms and hybrids is not recognised by the world authority for registering hybrid gladioli, the *North American Gladiolus Council*.

**Tab. 1.** Indigenous, wild and cultivated Iridaceae grown in the Botanical Garden collections since 1895. Hybrid, horticultural gladioli and irises are excluded to separate tables 2 and 3. (HR) depicts Croatian native species and (ex-YU) species of former Yugoslavian territory grown in the Rockeries with Croatian flora, as indigenous of the time. Details in text.

Species of Iridaceae	Origin (botanical garden, city, nursery)	Year of obtaining	Last recorded	Collection	Arrived as	Notes in the original inventory-card
<i>Aristaea ecklonii</i> Baker	Adelaide	1953	1961	Glasshouse		
	Porto	1984	1984	Alpinum		
	Zürich	1985	1989	Nursery		
	Jerusalem	2012	2021	Temperate greenhouse		
	Rostock	2019	2021	Cold greenhouse		
<i>Babiana ambigua</i> (Roem. & Schult.) G.J.Lewis	Kirstenbosch	1979	1979	Glasshouse	<i>B. ambigua</i> (Roem. & Schult.) Lewis	
<i>Babiana angustifolia</i> Sweet	Kirstenbosch	1961	1963	Glasshouse	<i>B. pulchra</i> (Salisb.) Lewis	
	Kirstenbosch	1982	1982	Nursery	<i>B. pulchra</i> (Salisb.) Lewis	
<i>Babiana ecklonii</i> Klatt	nn	2004	2005	Temperate greenhouse	" <i>B. elkonii</i> " (?)	original card is lost
<i>Babiana fragrans</i> (Jacq.) Steud.	Coimbra	1963	1984(?)	Cold greenhouse	<i>B. disticha</i> Ker Gawl.	
	Kopenhagen	1964	1964	Glasshouse	<i>B. plicata</i> Ker Gawl.	
<i>Babiana odorata</i> L. Bolus	nn	2004	2005	Temperate greenhouse		original card is lost
<i>Babiana pygmaea</i> (Burm.f.) Baker	Kirstenbosch	1954	1984(?)	Cold greenhouse	<i>B. macrantha</i> MacOwen	
	Kirstenbosch	1964	nn	Cold greenhouse	<i>B. macrantha</i> MacOwen	
	nn	2004	2005	Temperate greenhouse		original card is lost
<i>Babiana ringens</i> (L.) Ker Gawl.	Kyoto	1997	2002	Nursery	<i>Antholyza ringens</i> L.	original card is lost
<i>Babiana</i> "spp."	nn	nn	1886	Glasshouse		original data of Heinz (1885-1886)
<i>Babiana stricta</i> (Aiton) Ker Gawl.	Warsaw	1961	1961	Glasshouse		
<i>Chasmanthe aethiopica</i> (L.) N.E.Br.	Basel	1962	1963	Cold greenhouse	<i>Antholyza aethiopica</i> L.	
	Kopenhagen	1969	1988	Cold greenhouse	<i>Antholyza aethiopica</i> L.	



Species of Iridaceae	Origin (botanical garden, city, nursery)	Year of obtaining	Last recorded	Collection	Arrived as	Notes in the original inventory-card
	Kopenhagen	1966	1982	Cold greenhouse	Antholyza aethiopica L.	
	Palermo	1954	2000	Cold greenhouse	Antholyza aethiopica L.	
	Porto	1967	1988	Cold greenhouse	Antholyza aethiopica L.	
	Kopenhagen	1966	2000?	Cold greenhouse	Antholyza aethiopica L.	
	Mali Losinj	1983	2000?	Cold greenhouse	Antholyza aethiopica L.	Zephyranthes took over
	Stuttgart	2011	2021	Cold greenhouse		Zephyranthes took over
<i>Chasmanthe bicolor</i> (Gasp.) N.E.Br.	Blanes	2004	2005	Temperate greenhouse		
	Ventimiglia	2019	2021	Nursery		
<i>Chasmanthe floribunda</i> (Salisb.) N.E.Br.	Adelaide	1964	1979	Cold greenhouse		
	Basel	2019	2021	Cold greenhouse		
	Marseille	2019	2021	Cold greenhouse		
<i>Crocossia aurea</i> (Pappe ex Hook.) Planch.	München	1979	2000??	Cold greenhouse		
<i>Crocossia × crocosmiiflora</i> (Lemoine) N.E.Br.	mn	1950	1950	Greenhouse	<i>Tritonia crocosmiiflora</i> Voss. (syn. <i>Montbretia crocosmaeflora</i> Lemoine)	
	Meyrin	1987	1989	Nursery		
	mn	1961	1961	Greenhouse		
	Cluj	1960	1960	Nursery		
	Warsaw	1966	1988	Cold greenhouse		incorrect
	Stuttgart	1984	2000	Flowerbeds		incorrect
<i>Crocossia × crocosmiiflora</i> (Lemoine) N.E.Br. 'Norwich Canary'	UK Nursery	2019	2021	Iridarium		<i>C. aurea × C. pottisii</i>
<i>Crocossia</i> "hyb. Mix"	UK Nursery	2019	2021	Iridarium		
	German Nursery	2021	2021	Iridarium	Montbretia Mix	
<i>Crocossia</i> 'Lucifer'	Harrogate	1993	1995	Flowerbeds		<i>C. paniculata × C. crocosmiifolia</i>
	Manchester	1997	2021	Iridarium		

Species of Iridaceae	Origin (botanical garden, city, nursery)	Year of obtaining	Last recorded	Collection	Arrived as	Notes in the original inventory-card
<i>Crocotoma masoniorum</i> (L.Bolus) N.E.Br.	Leiden	1972	1988	Cold greenhouse		
	Leiden	1979	2000?	Cold greenhouse		
<i>Crocus angustifolius</i> Weston	Pruhonic	1970	2000	Nursery		recorded in a separate small card: "Crocus susianus is C. angustifolius"
	Yalta	1972	1989	Nursery		recorded in a separate small card: "Crocus susianus is C. angustifolius"
	St. Petersburg	1973	1977	Nursery		
	Izmir	1973	1988	Nursery		
	Wuppertal	1977	1989	Nursery		recorded in a separate small card: "Crocus susianus is C. angustifolius"
<i>Crocus biflorus</i> Mill. (HR)	nn	nn	nn	nn		original card is lost: found in one of the inventorial lists, undated
<i>Crocus biflorus</i> Mill. 'White Lady'	Pruhonic	1970	2005(?)	Nursery		possibly withered earlier and replaced by some other species recorded only in a small card: "Crocus biflorus Mill. var. alexandri (Ničić) Vel. is C. alexandri Ničić"
<i>Crocus biflorus</i> Mill. subsp. alexandri (Ničić ex Velen.) B.Mathew	nn	nn	nn	nn	unknown sample	
<i>Crocus cancellatus</i> Herb.	nn	nn	nn	nn		original card is lost: found in one of the inventorial lists, undated
<i>Crocus chrysanthus</i> (Herb.) Herb. (ex YU)	nn	nn	2021	Submed. rockery		there is no card: taxon found recorded in photo of Ms. Kirin; also in one of the undated inventorial lists
	nn	nn	nn	nn	<i>Crocus chrysanthus</i> (Herb.) Herb. "var. Bommulleri"	the original card is lost: found in one of the inventorial lists, undated

Species of Iridaceae	Origin (botanical garden, city, nursery)	Year of obtaining	Last recorded	Collection	Arrived as	Notes in the original inventory-card
<i>Crocus dalmaticus</i> Vis. (HR)	nn	nn	nn	nn		the original card is lost: found in one of the inventorial lists, undated
<i>Crocus flavus</i> Weston	nn	nn	2017	Alpinum?		there is no card: taxon found recorded in photo of Ms. Kirin
	nn	nn	2015	Alpinum?	<i>Crocus aureus</i> Sm.	there is no card: taxon found recorded in photo of Ms. Kirin
	Sofia	1973	nn	nn	unknown sample (maybe one of the two above?)	recorded in a separate small card: " <i>Crocus aureus</i> Sibth.et Sm. is <i>C. flavus</i> Weston"
	nn	nn	nn	nn	unknown sample (maybe one of the above?)	recorded in a separate small card: " <i>Crocus aureus</i> Sibth.et Sm. is <i>C. flavus</i> Weston"
<i>Crocus heuffelianus</i> Herb. (HR)	nn	nn	2021	Arboretum	nn	determined in 2018, acc.to dr. Regula (pers.cont.) initially brought from the nearby Medvednica Mt in 1960-ies
						recorded in a separate small card: " <i>Crocus heuffelianus</i> is <i>C. veluchensis</i> " (later changed: " <i>C. heuffelianus</i> is <i>C. vernus</i> (L.) Hill subsp. <i>vernus</i> , <i>C. veluchensis</i> has no synonyms acc. to Flora Europaea"). Acc. to WFO, <i>C. veluchensis</i> Herb.var. <i>uniflorus</i> (Schur) Nyman = <i>C. heuffelianus</i> Herb.
<i>Crocus imperati</i> Ten.	Wuppertal	1976	2005	Nursery		
	Linz	1980	1989	Nursery		
<i>Crocus malyi</i> Vis. (HR)	nn	nn	nn	nn	unknown sample (maybe the one above?)	original card is lost: found in one of the inventorial lists, undated
<i>Crocus olivieri</i> J.Gay	nn	nn	nn	nn		original card is lost: found in one of the inventorial lists, undated

Species of Iridaceae	Origin (botanical garden, city, nursery)	Year of obtaining	Last recorded	Collection	Arrived as	Notes in the original inventory-card
<i>Crocus pulchellus</i> Herb.	Sofia	1972	2005	Alpinum		
<i>Crocus reticulatus</i> Steven (ex Adam subsp. <i>reticulatus</i> , acc. to Euro+Med Plantbase; ex-YU)	nn	nn	2021	Arboretum (spontaneous)	unknown sample	there is no original card - maybe originated from the sample below?
	nn	nn	nn	nn	unknown sample	recorded only in a small card: " <i>Crocus variegatus</i> Hoppe et Hornsch. is <i>C. reticulatus</i> Steven"
<i>Crocus sativus</i>	nn	nn	1896	nn	unknown sample (without an author)	original data of Heinz (1885-1886)
<i>Crocus serotinus</i> Galisb. subsp. <i>clusii</i> (Gay) Mathew	Porto	1969	nn	Nursery		recorded only in a small card: " <i>Crocus clusii</i> J.Gay is <i>C. serotinus</i> subsp. <i>clusii</i> "
<i>Crocus sieberi</i> J.Gay	Wuppertal	1978	2003	Alpinum?		original card is lost: taxon found recorded in photo of Ms. Kirin
<i>Crocus speciosus</i> M. Bieb.	nn	nn	nn	nn		original card is lost: found in one of the inventorial lists, undated
<i>Crocus</i> "spp."	nn	nn	1896	Outdoors	several taxa, incl. " <i>Crocus sativus</i> "	original data of Heinz (1885-1886)
<i>Crocus thomasii</i> Ten. (HR)	nn	nn	nn	nn		original card is lost: found in one of the inventorial lists, undated
<i>Crocus tommasianus</i> Herb. (HR)	Wuppertal	1977	1977	Nursery		
	Halle	1979	1988	Nursery		
	Linz	1980	1985	Nursery		
	King's Lynn	1979	1983	Nursery		
	Dizdareca*	1978	2021	Submed. rockery		

Species of Iridaceae	Origin (botanical garden, city, nursery)	Year of obtaining	Last recorded	Collection	Arrived as	Notes in the original inventory-card
<i>Crocus vernus</i> (L.) Hill subsp. <i>vernus</i> (HR?)	Skoplje*	1968	1989	Nursery	<i>Crocus neapolitanus</i> Mord. et Loisel.; at some point changed to <i>C. vernus</i> (L.) Hill subsp. <i>vernus</i>	invented as <i>Crocus vernus</i> (L.) Hill subsp. <i>vernus</i> , which Milović (2016) describes as <i>C. heuffelianus</i> Herb.
	Šar planina*	1982	1989	Submeriteranean rockery	<i>Crocus neapolitanus</i> Mord. et Loisel.; at some point changed to <i>C. vernus</i> (L.) Hill subsp. <i>vernus</i>	
	Žuta Lokva*	1978	1989	Nursery	<i>Crocus neapolitanus</i> Mord. et Loisel.; at some point changed to <i>C. vernus</i> (L.) Hill subsp. <i>vernus</i> (unknown subsp.), which is a syn. of <i>C. neapolitanus</i> Loisel	
	Podkijuka*	1971	2009	Karstic rockery	<i>Crocus neapolitanus</i> Mord. et Loisel.; at some point changed to <i>C. vernus</i> (L.) Hill subsp. <i>vernus</i>	recorded in a separate small card: " <i>Crocus neapolitanus</i> Mord. et Loisel. is <i>C. vernus</i> (L.) Hill subsp. <i>vernus</i> "
	nn	nn	nn	nn	unknown sample	ex " <i>C. albiflorus</i> ", i.e. <i>C. vernus</i> ssp. <i>albiflorus</i> (Kit.) Asch. et Graebn.
	nn	nn	2021	Arboretum	unknown sample	original card is lost: found in one of the inventorial lists as " <i>C. albiflorus</i> f. <i>violaceus</i> ", undated
<i>Crocus vernus</i> (L.) Hill 'Dutch Yellow'	Zagreb Nursery	2005	2005	Alpinum		
<i>Crocus vernus</i> (L.) Hill 'Yellow Grandiflorus'	Zagreb Nursery	2005	2005	Alpinum		
<i>Crocus</i> hyb. 'Gelber Riesen'	Linz	1961	1961	Greenhouse		
<i>Crocus</i> hyb. 'Grosser Gelber'	Zagreb Nursery	2020	2021	Flowerbeds		
<i>Crocus</i> hyb. 'Ruby Giant'	nn	nn	2021	Alpinum		there is no card: taxon found recorded in photo of Ms. Kirin

Species of Iridaceae	Origin (botanical garden, city, nursery)	Year of obtaining	Last recorded	Collection	Arrived as	Notes in the original inventory-card
<i>Cypella herbertii</i> (Lindl.) Herb.	nn	1962	1962	Systematic fields		
<i>Dierama pendulum</i> (L.f.) Baker	Antibes	1979	1988	Cold greenhouse		
<i>Dierama pulcherrimum</i> (Hook.f.) Baker	Porto	1981	1981	Alpinum	<i>D. pendula</i> (L.f.) Bak.	
<i>Dietes grandiflora</i> N.E.Br.	Adelaide	1965	1965	Nursery	<i>D. pulcherrima</i> Hook.f.	
<i>Dietes iridioides</i> (L.) Sweet ex Klatt	Frankfurt	1979	1983	Cold greenhouse		
	Frankfurt	1984	1988	Cold greenhouse		
	Dresden	2002	2003	Cold greenhouse		
	Cluj	2002	2021	Cold greenhouse		
<i>Ferraria crispa</i> Burm.	nn	1951	1968	Cold greenhouse	<i>F. undulata</i> L.	
	Kopenhagen	1964	2000?	Cold greenhouse	<i>F. undulata</i> L.	
	Goettingen	1965	1965	Cold greenhouse	<i>F. undulata</i> L.	
	Vienna	1997	2000?	Cold greenhouse		
<i>Freesia cult.</i>	Nancy	1955	1963	Greenhouse	<i>F. hybrida</i> hort.	
	Manchester	1989	1989	Greenhouse	<i>F. hybrida</i> hort.	" <i>F. tubergenii</i> ": <i>F. refracta</i> alba x <i>F. armstrongii</i>
	Leiden	1953	1962	Greenhouse	<i>F. hybrida tubergenii</i> hort.	
	Zagreb Nursery	2020	2021	Flowerbeds		
<i>Freesia 'Gloria Salis'</i>	Ljubljana Nursery	1970	1970	Greenhouse		incorrect
<i>Freesia grandiflora</i> (Baker) Klatt	Graz	1982	1983	Cold greenhouse	<i>Lapeirousia grandiflora</i> Bak.	"plant detected in a pot labelled as <i>Zephyranthes carinata</i> , Cluj 70"
<i>Freesia laxa</i> (Thunb.) Goldblatt & J.C.Manning	nn	1961	1983	Cold greenhouse	<i>Lapeirousia cruenta</i> Benth. (syn. <i>L. laxa</i> (Thunb.) N.E.Br.), changed to <i>Anomatheca laxa</i> (Thunb.) Goldblatt.	"new inventory card made"



Species of Iridaceae	Origin (botanical garden, city, nursery)	Year of obtaining	Last recorded	Collection	Arrived as	Notes in the original inventory-card
	Wisley	1979	2021	Cold greenhouse	Lapeirousia laxa (Thumb.) N.E.Br., changed to Anomatheca laxa (Thumb.) Goldblatt.	(syn. Lapeyrouisia laxa, L. cruenta)
	Wisley	1979	2000	Cold greenhouse	Anomatheca laxa (Thumb.) Goldblatt	
Freesia Mix	Zagreb Nursery	2018	2021	Cold greenhouse		at some point changed to F. hybrida hort. 'Pimpernel'
	German Nursery	2021	2021	Flowerbeds		
Freesia 'Double' Mix	Zagreb Nursery	2020	2021	Flowerbeds		
Freesia 'Pimpernel'	Ljubljana Nursery	1970	1970	Greenhouse		
Freesia refracta (Jacq.) Klatt	Frankfurt	1951	1961	Greenhouse		
	Jibou	1979	2000?	Cold greenhouse		
	Marseilla	1980	2000	Cold greenhouse		
Freesia sparrmanii (Thumb.) N.E.Br.	Vienna-Belvedere	1955	1961	Greenhouse	F.refracta Klatt var.odorata Voss.	
Freesia 'Stockholm'	Ljubljana Nursery	1970	1970	Greenhouse		"new inventory card made" (missing)
Freesia verrucosa (B. Vogel) Goldblatt & J.C.Manning	nm	1962	1962	Systematic fields	Lapeirousia juncea (L.f.) Pourr., changed to Anomatheca verrucosa (Vogel) Goldblatt	
	Koeln	1960	1963	Greenhouse	Lapeirousia juncea (L.f.) Pourr., changed to Anomatheca verrucosa (Vogel) Goldblatt	
	Greifswald	1989	2021	Cold greenhouse	Lapeirousia juncea (L.f.) Pourr., changed to Anomatheca verrucosa (Vogel) Goldblatt	(syn. Lapeyrouisia juncea)
	Greifswald	1989	2000	Cold greenhouse	Anomatheca verrucosa (B. Vogel) Goldblatt	

Species of Iridaceae	Origin (botanical garden, city, nursery)	Year of obtaining	Last recorded	Collection	Arrived as	Notes in the original inventory-card
<i>Freesia viridis</i> (Aiton) Goldblatt & J.C.Manning	Basel	2019	2021	Cold greenhouse	<i>Anomatheca viridis</i> (Aiton) Goldblatt	
<i>Gladiolus communis</i> L. (HR)	Trsteno*	1978	1989	Mediterranean rockery	<i>G. illyricus</i> W.D.J.Koch	
	Istanbul	1968	1978	Nursery	<i>G. communis</i> L. subsp. byzantinus (Miller) A.P.Hamilton (syn. <i>G.</i> <i>byzantinus</i> Mill.)	
<i>Gladiolus dalenii</i> Van Geel	Bordeaux	1983	1985	Nursery		
	nn	1975	1979	Cold glasshouse	<i>G. dracocephalus</i> Hook.f.	incorrect
<i>Gladiolus gregarius</i> Welw.ex Baker	Mali Lošinj	1983	2000?	Nursery	<i>G. dracocephalus</i> Hook.f.	
<i>Gladiolus illyricus</i> W.D.J.Koch (HR)	Legon	1969	1969	Nursery	<i>G. klattianus</i> Hutch.	
	Lastovo*	1962	1972	Mediterranean rockery		
	Porto	1973	1980	Mediterranean rockery	<i>G.imbricatus</i> L. "var. illyricus"	
	Mljet*	1981	1989	Nursery		
	Krka*	2016	2021	Nursery		
<i>Gladiolus italicus</i> Mill. (HR)	Vienna-Belvedere	1962	1964	Nursery	<i>G. segetum</i> Ker.	
	Cres*	1965	1989	Mediterranean rockery	<i>G. segetum</i> Ker.	
	Mljet*	1968	1989	Mediterranean rockery	<i>G. segetum</i> Ker.	
	Peješac*	1968	1989	Mediterranean rockery	<i>G. segetum</i> Ker.	
	Vir*	1966	1989	Mediterranean rockery	<i>G. segetum</i> Ker.	
	Trsteno*	1978	1989	Mediterranean rockery	<i>G. segetum</i> Ker.	
	Mljet*	1970	1989	Mediterranean rockery	<i>G. segetum</i> Ker.	
	Solime*	1979	1989	Mediterranean rockery	<i>G. segetum</i> Ker.	
	Mljet*	1979	2000	Mediterranean rockery	<i>G. segetum</i> Ker.	
	Cetina canyon*	2006	2021	Mediterranean rockery	<i>G. palustris</i> Gaudin	
	Dubrovnik*	2011	2021	Mediterranean rockery		

Species of Iridaceae	Origin (botanical garden, city, nursery)	Year of obtaining	Last recorded	Collection	Arrived as	Notes in the original inventory-card
<i>Gladiolus palustris</i> Gaudin (HR)	Dresden	1964	1980(?)	Nursery		probably incorrect
<i>Gladiolus tristis</i> L.	Edinburgh	1960	1961	Glasshouse	<i>G. tristis</i> var. <i>concolor</i> (without authors)	
<i>Herbertia pulchella</i> Sweet	Kyoto	2002	2005	Cold greenhouse		
<i>Hesperantha baurii</i> Baker	Wisley	1975	1978	Nursery	arrived without an author	
<i>Hesperantha coccinea</i> (Backh. & Harv.) Goldblatt & J.C.Manning	Nantes	1997	1998	Nursery	<i>Schizostylis coccinea</i> Backh. & Harv.	
<i>Iris bloudowii</i> Ledeb.	UK Nursery	2019	2021	Nursery		material of prof. Mitić, not inventorized
<i>Iris chrysographes</i> Dykes 'Dark Form'	nn	2008	2021	Nursery		
<i>Iris dichotoma</i> Pall.	Osnabruck	2019	2021	Nursery		
<i>Iris ensata</i> Thunb. 'Aoigata'	Wickford	2019	2021	Nursery		
<i>Iris suaveolens</i> Boiss. & Reut.	Blagovešensk	2012	2021	Nursery	<i>Pardanthopsis dichotoma</i> (Pall.) L.W.Lenz	
<i>Iris gracilipes</i> A.Gray	Brno	2019	2021	Nursery		
<i>Iris hookeri</i> Penny ex G.Don	nn	2008	2021	Nursery	<i>Iris glouckiana</i> O.Schwarz	material of prof. Mitić, not inventorized
<i>Iris magnifica</i> Vved.	Sendai	2019	2021	Nursery		
<i>Iris mandshurica</i> Maxim.	Montreal	2019	2021	Nursery		
<i>Iris milesii</i> Baker ex Foster	Goeteborg	2011	2013	Greenhouse	<i>Juno magnifica</i> (Vved.) Vved.	material of prof. Mitić, not inventorized
<i>Iris perrieri</i> Simonet ex N.Service	nn	nn	2021	Nursery		
	Amtiens	2019	2021	Nursery		
	nn	2008	2021	Nursery		material of prof. Mitić, not inventorized

Species of Iridaceae	Origin (botanical garden, city, nursery)	Year of obtaining	Last recorded	Collection	Arrived as	Notes in the original inventory-card
<i>Iris pumila</i> L. subsp. <i>attica</i> (Boiss. et Heldr.) Hay.	Kozjak Mt (North Macedonia)*	2009	2021	Nursery	<i>I. attica</i> Boiss. et Heldr.	material of prof. Mitić, not inventorized
<i>Iris</i> × <i>rothschildii</i> Degen (I. <i>illyrica</i> Tomm. × <i>I. variegata</i> L.; HR)	nn	2009	2021	Nursery	(Valid) member of Croatian flora. Valid acc. to WFO: <i>I. × germanica</i> L.	material of prof. Mitić, not inventorized
<i>Iris</i> × <i>sambucina</i> L. (I. <i>pallida</i> Lam. × <i>I. variegata</i> L.; HR)	nn	2009	2021	Nursery	(Valid) member of Croatian flora. Valid acc. to WFO: <i>I. × germanica</i> L.	material of prof. Mitić, not inventorized
<i>Iris</i> × <i>trojana</i> A.Kern. ex Stapf. (uncertain origin)	nn	2008	2021	Nursery	Valid acc. to WFO: <i>I. × germanica</i> L.	material of prof. Mitić, not inventorized
<i>Iris versicolor</i> L.	Montreal	2019	2021	Nursery		
<i>Ixia abbreviata</i> Houtt.	Kirstenbosch	1981	1988	Cold greenhouse	<i>I. conferta</i> Foster var. <i>ochroleuca</i> (Ker.) Lewis	incorrect in 2000 (probably withered and something else seeded itself)
<i>Ixia capillaris</i> L.f.	Kopenhagen	1964	1986	Cold greenhouse	<i>I. capillaris</i> Thunb. (unknown)	incorrect in 2000 (probably withered and something else seeded itself)
<i>Ixia flexuosa</i> L.	Kopenhagen	1964	1964	Greenhouse		
<i>Ixia latifolia</i> D. Delaroché	Palermo	1954	1954	Greenhouse	<i>I. scariosa</i> Thunb.	
<i>Ixia</i> Mix	German Nursery	2021	2021	Greenhouse		
<i>Ixia polystachya</i> L.	Kopenhagen	1964	1980	Cold greenhouse	<i>I. leucantha</i> Jacq.	
	Kopenhagen	1966	1982	Cold greenhouse		
<i>Ixia</i> 'Rainbow Choice Mix'	UK Nursery	2019	2021	Cold greenhouse		
<i>Ixia</i> "spp."	nn	nn	1886	Greenhouse		original data of Heinz (1885-1886)
<i>Ixia</i> 'Yellow'	German Nursery	2021	2021	Greenhouse		
<i>Libertia chilensis</i> (Molina) Guncel	Amsterdam	1964	1975	Greenhouse	<i>L. elegans</i> Poepp.	
	nn	1962	1962	Systematic fields	<i>L. formosa</i> Grah.	

Species of Iridaceae	Origin (botanical garden, city, nursery)	Year of obtaining	Last recorded	Collection	Arrived as	Notes in the original inventory-card
<i>Libertia grandiflora</i> (R.Br.) Sweet	nn	1961	1961	Systematic fields	<i>L. grandiflora</i> Sw.	
	Leiden	1985	1988	Nursery	<i>L. grandiflora</i> Sw.	
	Bern	2015	2021	Flowerbeds	<i>L. grandiflora</i> Sw.	
<i>Libertia ixioides</i> (C. Forst.) Spreng. 'Goldfinger'	Zagreb Nursery	2020	2021	Flowerbeds		
<i>Melasmaerula ramosa</i> (L.) Klatt	Basel	2019	2021	Cold glasshouse		
<i>Moraea collina</i> Thunb.	London	1961	1961	Glasshouse	<i>Homeria collina</i> Vent.	
<i>Moraea ramosissima</i> (L.f.) Druce	Melbourne	1983	1984	Alpinum		
<i>Moraea sisyrinchium</i> (L.) Ker Gawl.	Geneve	1968	1971	Nursery	<i>Iris sisyrinchium</i> L. <i>Gynandritis sisyrinchium</i> (L.) Parl.	syn. <i>Gynandritis sisyrinchium</i> (L.) Parl.
	Würzburg	2010	2011	Nursery		
<i>Moraea vegeta</i> L.	Basel	1972	1988	Cold greenhouse	<i>Dietes vegeta</i> (L.) N.E.Br.	
	Stuttgart	1979	1988	Cold greenhouse	<i>Dietes vegeta</i> (L.) N.E.Br.	
	Stuttgart	1981	1988	Cold greenhouse	<i>Dietes vegeta</i> (L.) N.E.Br.	
	Jibou	1980	1988	Cold greenhouse	<i>Dietes vegeta</i> (L.) N.E.Br.	
<i>Neomarica gracilis</i> (Herb.) Sprague	Bruxelles	1960	2021	Temperate greenhouse		
<i>Neomarica longifolia</i> (Link & Otto) Sprague	Bruxelles	1961	1963	Greenhouse	<i>Marica longiflora</i> Link.	(misspelled syn. <i>M. longifolia</i> Link & Otto)
	Montreal 19	2019	2021	Cold greenhouse		
	UK Nursery	2020	2021	Cold greenhouse		
	Kaliningrad	2020	2021	Cold greenhouse		
<i>Olisynium douglasii</i> (A.Dietr.) E.P. Bicknell	Jena	2011	2012	Nursery		original card is lost

Species of Iridaceae	Origin (botanical garden, city, nursery)	Year of obtaining	Last recorded	Collection	Arrived as	Notes in the original inventory-card
<i>Olsynium junceum</i> (E. Mey. ex C.Presl) Goldblatt subsp. <i>depauperatum</i> (Phil.) R.A.Rodr. & Martić.	nn	nn	2021	Nursery	?	determined as <i>Sisyrinchium depauperatum</i> (syn.)
<i>Orthrosanthus multiflorus</i> Sweet	Chelsea	2012	2021	Cold greenhouse		
<i>Paterosnia fragilis</i> (Labil.) Asch. & Graebn.	Adelaide	1982	1989	Cold greenhouse		from native locality
<i>Phalocallis coelestis</i> (Lehm.) Ravenna	Vienna	1957	1961	Greenhouse	<i>Cypella plumbaea</i> Ldl.	" <i>Tigridia aurea</i> hort." (probably <i>T. azurea</i> auct.)
	Wuppertal	1985	2000?	Cold greenhouse	<i>Cypella coelestis</i> (Lehm.) Diels	
	Chemnitz	2019	2021	Cold greenhouse		
<i>Romulea bulbocodium</i> (L.) Sebast. & Mauri (HR)	nn	1952	1961	Cold greenhouse	<i>R. bulbocodium</i> Sebast. et Mauri	
	Gent	1961	1961	Cold greenhouse	<i>R. bulbocodium</i> Sebast. et Mauri	
	Lisabon	1961	1963	Cold greenhouse	<i>R. bulbocodium</i> Sebast. et Mauri	
	Krk*	1964	1989	Nursery	<i>R. bulbocodium</i> Sebast. et Mauri	
	Zagori*	1965	1973	Nursery	<i>R. bulbocodium</i> Sebast. et Mauri	
	Supetar*	1966	1980	Nursery	<i>R. bulbocodium</i> Sebast. et Mauri	
	Lim channel*	1966	1989	Mediterranean rockery	<i>R. bulbocodium</i> Sebast. et Mauri	
	Vir*	1980	1989	Nursery		
	Boka kotorska*	1978	1989	Nursery		
	Rogoznica*	1980	1989	Nursery		
	Poltače*	1981	1989	Nursery		



Species of Iridaceae	Origin (botanical garden, city, nursery)	Year of obtaining	Last recorded	Collection	Arrived as	Notes in the original inventory-card
	Olib*	1983	1983	Nursery		
	Mijet*	1982	1986	Nursery		
	Peješac*	2011	2015	Mediterranean rockery		
<i>Romulea clusiana</i> (Lange) Nyman	Porto	1969	1970	Nursery	<i>Trichonema clusianum</i> Lge. var. <i>serotina</i> Samp. (unknown variety)	
<i>Romulea columnae</i> Sebast. & Mauri (HR)	Genova	1980	1989	Nursery		
<i>Romulea columnae</i> Sebast. & Mauri subsp. <i>grandiscapa</i> (Webb) J.Gay	Wuppertal	1981	1989		<i>R. grandiscapa</i> J. Gay	from Tenerife
<i>Romulea flava</i> (Lem.) M.P.de Vos	Kirstenbosch*	1982	1989	Cold greenhouse	<i>R. flava</i> (Lem.) de Vos	
<i>Sisyrinchium angustifolium</i> Mill.	Mali Troglav*	1963	2002	Submeriterranean rockery		at one point, "acc. to Flora Europea", at the same card were placed (as syn.), <i>S. angustifolium</i> , <i>S. bermudiana</i> L. and <i>S. montanum</i> Greene
	Zaprešić*	1971	1971	Systematic fields		
	Marburg	1985	1989	Nursery		
	Wuppertal	1985	1988	Systematic fields		
	nn	nn	2021	Nursery		found growing spontaneous
<i>Sisyrinchium bellum</i> S. Watson	Berkeley	1987	1994	Nursery		
	Seattle	2005	2021	Alpinum		
<i>Sisyrinchium bermudiana</i> L.	Wuppertal	1985	2003	Flowerbeds		at one point, "acc. to Flora Europea", at the same card were placed, as synonyms, <i>S. angustifolium</i> , <i>S. bermudiana</i> L. and <i>S. montanum</i> Greene
<i>Sisyrinchium californicum</i> (Ker Gawl.) Dryand.	Sheffield	1985	1989	Nursery	<i>S. boreale</i> (without an author)	

Species of Iridaceae	Origin (botanical garden, city, nursery)	Year of obtaining	Last recorded	Collection	Arrived as	Notes in the original inventory-card
	Kiel	1983	1989	Nursery	<i>S. californicum</i> Dry.	
	nn	nn	2021	Nursery		found growing spontaneous
<i>Sisyrinchium littorale</i> Greene	Wisley	1997	2001	Flowerbeds		
<i>Sisyrinchium montanum</i> Greene	Wuppertal	1985	2021	Systematic fields	" <i>S. angustifolia</i> "	
<i>Sisyrinchium</i> "spp."	nn	nn	1886	Glasshouses		original data of Heinz (1885-1886)
<i>Sparaxis bulbifera</i> (L.) Ker Gawl.	Kirstenbosch*	1982	1985	Cold greenhouse		redet. as <i>S. grandiflora</i>
<i>Sparaxis</i> cult.	Zagreb Nursery	2018	2021	Nursery		
<i>Sparaxis</i> Mix	German Nursery	2021	2021	Greenhouse		
<i>Sparaxis</i> "spp."	nn	nn	1886	Greenhouse		original data of Heinz (1885-1886)
<i>Sparaxis</i> tricolor (Schneev.) Ker Gawl.	Palermo	1956	1965	Greenhouse		
	Kirstenbosch*	1982	1989	Cold greenhouse	<i>S. bulbifera</i> (L.) Ker Gawl.	redet.
	Kopenhagen	1964	1964	Greenhouse	<i>S. tricolor</i> (Curt.) Ker	
	Antibes	1962	1973	Nursery	<i>S. tricolor</i> (Curt.) Ker	
<i>Tigridia flammea</i> (Lindl.) Ravenna	Versailles	1975	1977	Nursery	<i>Rigidella flammea</i> Lindl.	
<i>Tigridia</i> mix	Zagreb Nursery	2019	2021	Iridarium		
<i>Tigridia pavonia</i> (L.f.) DC.	nn	nn	1896	Greenhouse	without an author	mix of colourful cultivars original data of Heinz (1885-1886)
	Antwerpen	1961	1963	Greenhouse		
	Chelsea	1962	1963	Greenhouse		
	Leipzig	1962	1963	Greenhouse		
	Frankfurt	1982	2000	Cold greenhouse		
	Angers	1982	1989	Cold greenhouse		
	Bergen	1983	1989	Cold greenhouse		
	Puerto de la Cruz	1983	1983	Cold greenhouse		
	Erlangen	1984	1989	Cold greenhouse		

Species of Iridaceae	Origin (botanical garden, city, nursery)	Year of obtaining	Last recorded	Collection	Arrived as	Notes in the original inventory-card
	Harrogate	1985	1989	Cold greenhouse	T. "Tiger Flower"	
	Dresden	1986	1986	Cold greenhouse		
	Aachen	1988	1988	Cold greenhouse		
	Warsaw	1995	1995	Cold greenhouse		
	Berlin	1995	1995	Cold greenhouse		
	Strasbourg	1998	1999	Cold greenhouse		
	UK Nursery	2019	2021	Iridarium		T. pavonia (L.f.) DC. cultivars
<i>Tigridia pavonia</i> (L.f.) DC. 'Lilacina'	German Nursery	2021	2021	Iridarium		
<i>Tigridia pavonia</i> (L.f.) DC. 'Alba Grandiflora'	German Nursery	2021	2021	Iridarium		
<i>Trimezia martinicensis</i> (Jacq.) Herb.	Bonn*	1981	1984	Temperate greenhouse	"T. martinicensis" Herb.	collected in the Caribbeans
<i>Tritonia gladiolaris</i> (Lam.) Goldblatt & J.C.Manning	Kopenhagen	1966	2000?	Nursery	T. lineata Ker (val. syn. T. lineata (Salisb.) Ker Gawl.)	
<i>Tritonia mix</i>	Zagreb Nursery	2018	2021	Nursery		
<i>Tritonia laxifolia</i> (Klatt) Baker	UK Nursery	2020	2021	Cold greenhouse		
<i>Watsonia borbonica</i> (Pourr.) Goldblatt	Blanes	1987	1989	Nursery	W. pyramidata (Andr.) Stapf.	? older val. syn. is W. pyramidata (Andrews) Klatt
<i>Watsonia coccinea</i> (Herb. ex Baker) Baker	Kopenhagen	1964	1964	Greenhouse	W. rosea Ker.	
	Zürich	1979	1979	Greenhouse	W. coccinea Herb.	
	San Marino	1983	1985	Cold greenhouse	W. coccinea Herb.	
<i>Watsonia fulgens</i> Ker Gawl. (?)	Oxford	1980	1981	Nursery	W. fulgens (without an author)	W. fulgens (Andrews) Pers. is today W. meriana (L.) Mill.)
<i>Watsonia meriana</i> (L.) Mill.	Florence	1957	1961	Greenhouse		
	Stuttgart	2012	2013	Flowerbeds		
<i>Watsonia pillansii</i> L. Bolus	Frankfurt	2019	2021	Nursery		

As already explained with crocuses, many plants purchased or received for the horticultural purposes were not inventoried in our database (until the early 2000s), while the “same names” received via *Index Seminum* network were registered, sometimes under different species (Tab. 2). This is today difficult to trace, and a lot of the plants in question are no longer in our collection. Several examples: *Gladiolus* ‘Murie-lae’ from different sources was separately inventoried as *G. callianthus* Marais ‘Murie-lae’, *Acidanthera murielae* (Kelway) Hoog and *A. bicolor* Hochst. var. *murielae* R.H.Perry (Photo-tab. 3a). *Gladiolus* × *gandavensis* Van Houtte ‘Early Rose’ from Košice could have been the same as *G. hybridus* ‘Early Rose’ from Sofia (Photo-tab. 3d). Horticultural hybrids ‘Las Vegas’ and ‘Peter Pears’ can be purchased under both *Primulinus* and *Grandiflorus* groups, as well as recognized in the “mix” of corms (Tab. 2) – however, though the flower patterns are quite similar, the heights of the plants, number of flowers and their size are very different (Photo-tab. 3d). As already emphasized, many historic lines of hybrid gladioli are today incorporated in three general groups (e.g., ‘Ramosus’ and ‘Butterfly’ in the *Nanus* group, Photo-tab. 3b), but we are still trying to keep the original affiliations, as far as is possible.

While Croatian native gladioli are living in the Garden Rockeries with indigenous flora, hybrids today enrich the *Iridarium* collection (Photo-tables 3abcd). These are exclusively cultivated varieties or hybrids of various progenitors, as the history of hybridization of ornamental gladioli is even more elaborated than that of the ‘bearded’ irises. Literature about this famous and popular genus is extensive, but many hybrids are not registered. This is especially the case with a group of corms, still grown in our collection today (Tab. 3, Photo-tab. 3d), which arrived from Košice Botanical Garden in 1992. All of the samples arrived with names of the hybrids, under *Gladiolus* × *gandavensis* group. When I took over the collection in 2001, the names of hybrids were already misplaced, and I tried to link the plants with the names from our database. That was not very successful, while for these gladioli there are no descriptions as they are not registered by the World authority, but the results of extensive hybridization carried out by an individual, Mr J. Hečko of Košice. As I was informed by the colleagues in Košice Botanic Garden (pers. comm.) to which I turned for help, after Mr Hečko passed away, his collection succumbed to illnesses and gradually withered, without description of the hybrids being saved. Consequently, some of our ‘Gandavensis’ hybrids remain unconnected with the existing names, and many withered. To bring even more confusion to this collection, new corms were added replacing the missing ones during the years, again without proper inventory of names, which were mixed with the ‘Gandavensis’ gladioli. It is worth mentioning, also, that we are collecting, refrigerating and germinating seeds of our hybrid gladioli to gain new diversity among our cultivars (Phototab. 3a).

Even among the recently purchased corms, some hybrids turned out to be something else than the nametag advertised. Also, again, I found some never inventoried gladioli in the aforementioned photo-collection of Ms Kirin. Following all these irregularities, there are quite a lot of plants in our collection today that are undetectable and untraceable. Nevertheless, Tab. 2 contains a column with some “proper” names of the groups to which each of the hybrids (could) belong, if they still exist in our collection: at least, as I see them.

Tab. 2. Horticultural hybrids of gladioli grown in the Botanical Garden collections since 1985, alphabetized acc. to the name of cultivar. Details in text.

Name of <i>Gladiolus</i> hybrid / cultivar	Taxon as originally arrived	Origin (botanical garden, city, nursery)	Year of obtaining	Last recorded	Collection	Valid name (probably)	Notes in the original inventory-card
Atom'	Nanus hyb. mix.	UK Nursery	2020	2021	Iridarium	G. ser. Primulinus 'Atom'	Detected among G. ser. Nanus hyb.
Belinda'	Nanus Atom'	German nursery	2021	2021	Iridarium	G. ser. Primulinus 'Atom'	(incorrect name)
Blue Mist'	Butterfly hyb. 'Belinda'	UK Nursery	2019	2021	Iridarium	G. ser. Primulinus aff. (white)	unknown hybrid
Blue Night'	hybridus 'Blue Mist' × gandavensis Van Houtte 'Blue Night'	Kaunas	1985	1985	Nursery	impossible to confirm	unknown hybrid, probably incorrect
Blue Spire'	hybridus 'Blue Spire'	Košice	1992	2002	Systematic fields	impossible to confirm	unknown hybrid
Break Of Dawn'	Break Of Dawn'	Sofia	1985	1985	Nursery	impossible to confirm	unknown hybrid
Byzantinus'	Byzantinus'	German Nursery	2021	2021	Iridarium	G. ser. Grandiflorus 'Break Of Dawn'	
Carnival' mix	?	UK Nursery	2019	2021	Iridarium	G. communis subsp. byzantinus; i.e. val. G. communis cult. (garden growth)	There is no inventory-card; colourful plants of different combinations
Charm'	Nanus hyb. 'Charm'	??	??	2021	Iridarium	G. ser. Grandiflorus 'Carnival' mix aff.	Used to be classified as one of the ser. Ramosus
Charming Lady'	Nanus hyb. 'Charm'	UK Nursery	2019	2021	Iridarium	G. ser. Nanus 'Charm'	Detected among G. ser. Nanus hyb. mix.
Cote d'Azur'	Nanus hyb. mix.	UK Nursery	2019	2021	Iridarium	G. ser. Nanus 'Charming Lady'	
Early Rose'	Cote d'Azur'	Zagreb Nursery	2020	2021	Iridarium	G. ser. Grandiflorus 'Red'	
Elvira'	hybridus 'Early Rose' × gandavensis Van Houtte 'Early Rose'	Sofia	1985	1989	Nursery	impossible to confirm	unknown hybrid
Exotica 185'	Nanus hyb. 'Elvira'	Košice	1992	2021	Iridarium	G. ser. Grandiflorus 'Early Rose'	unknown hybrid
	hybridus 'Exotica 185'	UK Nursery	2019	2021	Iridarium	G. ser. Nanus 'Elvira'	
		Kaunas	1985	1985	Nursery	impossible to confirm	unknown hybrid

Name of <i>Gladiolus</i> hybrid / cultivar	Taxon as originally arrived	Origin (botanical garden, city, nursery)	Year of obtaining	Last recorded	Collection	Valid name (probably)	Notes in the original inventory-card
Finestone'	x <i>gandavensis</i> Van Houtte 'Finestone'	Košice	1992	2004	Systematic fields	impossible to confirm	unknown hybrid
Holland's Glory'	hybridus 'Holland's Glory'	Sofia	1985	2012	Nursery	impossible to confirm	unknown hybrid
Hunting Song'	Hunting Song'	Zagreb Nursery	2010	2012	Systematic fields	G. ser. <i>Grandiflorus</i> 'Hunting Song'	Not entirely to description; photo of Ms Kirin
Jessica'	Jessica'	Zagreb Nursery	2018	2021	Cold glasshouse	G. ser. <i>Grandiflorus</i> 'Jessica'	
Las Vegas'	Las Vegas'	Zagreb Nursery	2020	2021	Iridarium	G. ser. <i>Grandiflorus</i> 'Las Vegas'	
	Nanus hyb.	UK Nursery	2019	2021	Iridarium	G. ser. <i>Primulinus</i> 'Las Vegas'	Detected among G. ser. <i>Nanus</i> hyb.*
Mary Housley'	Mary Housley'	Zagreb Nursery	2020	2021	Iridarium	G. ser. <i>Grandiflorus</i> 'Velvet Eyes' aff	(incorrect name)
(Mix)	Nanus hyb. mix	UK Nursery	2019	2021	Iridarium	G. ser. <i>Nanus</i> hybrids	mix of small hybrids
Murielae'	<i>Acidantha</i> <i>murielae</i> (Kelway) Hoog	Edinburgh	1960	1963	Cold glasshouse	G. <i>murielae</i> Kelway cult.	separate database card
	<i>Acidantha</i> <i>bicolor</i> Hochst. var. <i>murielae</i> R.H.Perry	Rouen	1986	1986	Cold glasshouse	G. <i>murielae</i> Kelway cult.	separate database card
	<i>Acidantha</i> <i>bicolor</i> Hochst. var. <i>murielae</i> R.H.Perry	Berlin	2003	2004	Cold glasshouse	G. <i>murielae</i> Kelway cult.	
	G. <i>callianthus</i> <i>Marais</i> 'Murielae'	UK Nursery	2019	2021	Iridarium	G. <i>murielae</i> Kelway cult.	separate database card
	G. 'Murielae'	Zagreb Nursery	2020	2021	Iridarium	G. <i>murielae</i> Kelway cult.	
	<i>Acidantha</i> 'Murielae'	German nursery	2021	2021	Iridarium	G. <i>murielae</i> Kelway cult.	
My Love'	?	nn	nn	2021	Iridarium	G. ser. <i>Grandiflorus</i> 'My Love'	Detected in several Ms. Kirin's photos (2012), not inventorized



Name of <i>Gladiolus</i> hybrid / cultivar	Taxon as originally arrived	Origin (botanical garden, city, nursery)	Year of obtaining	Last recorded	Collection	Valid name (probably)	Notes in the original inventory-card
	My Love'	Zagreb Nursery	2020	2021	Iridarium	G. ser. Grandiflorus 'Friendship'	(incorrect name)
	My Love'	German Nursery	2021	2021	Iridarium	G. ser. Grandiflorus 'Friendship'	
Nathalie'	Nanus hyb. 'Nathalie'	UK Nursery	2019	2021	Iridarium	G. ser. Nanus 'Nathalie'	
Nova Lux'	?	nn	nn	2012	Nursery	impossible to confirm	Detected in several Ms. Kirin's photos (2012), not inventorized
	Nova Lux'	Zagreb Nursery	2020	2021	Iridarium	G. ser. Grandiflorus 'Nova Lux'	
Nymph'	Nanus hyb. 'Nymph'	UK Nursery	2019	2021	Iridarium	G. ser. Nanus 'Nymph'	Not entirely to description
Perun'	× gandavensis Van Houtte 'Perun'	Košice	1992	2021	Iridarium	G. ser. Primulinus 'Perun'	unknown hybrid
Peter Pears'	?	nn	nn	2012	Nursery	G. ser. Primulinus 'Peter Pears'	Detected in several Ms. Kirin's photos (2012), not inventorized
	Peter Pears'	Zagreb Nursery	2020	2021	Iridarium	G. ser. Grandiflorus 'Peter Pears'	
Plumtart'	Plumtart'	German Nursery	2021	2021	Iridarium	G. ser. Grandiflorus 'Plumtart'	
Prins Claus'	Prins Claus'	UK Nursery	2019	2021	Iridarium	G. ser. Nanus 'Prins Klaus'	
Priscilla'	?	nn	nn	2021	Iridarium	G. ser. Grandiflorus 'Priscilla'	Detected in several Ms. Kirin's photos (2010), not inventorized
Purple'	Purple'	Zagreb Nursery	2020	2021	Iridarium	G. ser. Grandiflorus 'Purple'	aff. 'Purple Flora'?
Red'	Red'	Zagreb Nursery	2020	2021	Iridarium	G. ser. Grandiflorus 'Red'	
Red Cascade'	hybridus 'Red Cascade'	Kaunas	1985	1985	Nursery	impossible to confirm	unknown hybrid

Name of <i>Gladiolus</i> hybrid / cultivar	Taxon as originally arrived	Origin (botanical garden, city, nursery)	Year of obtaining	Last recorded	Collection	Valid name (probably)	Notes in the original inventory-card
Red Rover'	× <i>gandavensis</i> Van Houtte 'Red Rover'	Košice	1985	1985	Systematic fields	impossible to confirm	unknown hybrid
Red Sea'	× <i>gandavensis</i> Van Houtte 'Red Sea'	Košice	1992	2021	Iridarium	G. ser. <i>Primulinus</i> 'Red Sea'	unknown hybrid
Silent Night'	hybridus 'Silent Night'	Kaunas	1985	1985	Nursery	impossible to confirm	unknown hybrid
Silver Wedding'	hybridus 'Silver Wedding'	Kaunas	1992	2021	Systematic fields	G. ser. <i>Grandiflorus</i> 'Silver Wedding'	unknown hybrid
spp./cult.	spp./cult.	nn	nn	1886	Outdoors	impossible to confirm	Original data of Heinz (1885-1886)
Spring Song'	hybridus 'Spring Song'	Sofia	1985	1989	Nursery	impossible to confirm	unknown hybrid
Stella'	Butterfly hyb. 'Stella'	UK Nursery	2019	2021	Iridarium	G. ser. <i>Nanus</i> 'Stella'	
The Bride'	× <i>colvillei</i> 'The Bride'	UK Nursery	2019	2021	Iridarium	G. × <i>colvillei</i> Sweet 'The Bride'	
Traderhorn'	?	nn	nn	2012	Nursery	G. ser. <i>Grandiflorus</i> 'Traderhorn'	Detected in several Ms. Kirin's photos (2012), not inventorized
White Prosperity'	?	Zagreb Nursery	2020	2021	Iridarium	G. ser. <i>Grandiflorus</i> 'Traderhorn'	
		nn	nn	2021	Nursery	G. ser. <i>Grandiflorus</i> 'White Prosperity'	Detected in several Ms. Kirin's photos (2012), not inventorized
	White Prosperity'	Zagreb Nursery	2020	2021	Iridarium	G. ser. <i>Grandiflorus</i> 'White Prosperity'	
	Windsong'	Zagreb Nursery	2020	2021	Iridarium	G. ser. <i>Grandiflorus</i> 'Rose Prosperity' aff	(incorrect name)
	Windsong'	German Nursery	2021	2021	Iridarium	G. ser. <i>Grandiflorus</i> 'Windsong'	

## Iris

Irises are the most abundant herbaceous plants in our Garden. Since the inventory of the 'bearded' irises finished in September, 2019 (KOVAČIĆ, 2019), until today (January, 2021), our collection has grown by a hundred "names": most of them new to the collection, but also some older that we once had (for example, 'Edith Wolford', 'Quetta', 'Elzee'). Tab. 3 amends the list of hybrids that we gained since my first report (Tab. 4 in KOVAČIĆ, 2019). This collection is being enlarged mostly via donations of the Garden Friends, colleagues and visitors; some exchanges, and some purchases of the target-hybrids representing particular group. I am trying, when possible, to gain the same historic hybrids that we once had in our collection. Unregistered "names" included in our collection were received as gifts, and are well described by their hybridizers/cultivators (Mr Zakis, Mr Golob and Mr Cetina; Tab. 3). Our *Iridarium* – enriched with the hybrid gladioli and crocosmias – became in the meantime too small for exhibiting all of the plants, so we are just in the process of expanding it.

Beside the new 'bearded' hybrids, depicted in Table 3 (Photo-tab. 4), several new species and cultivars of the *Iris* genus were acquired during 2020 (Tab. 1). *Iris chrysographes* Dykes 'Dark Form' (Photo-tab. 1) was purchased, while the others were grown from seeds obtained via *Delectus (Index) Seminum* exchange network. Also, some of the Professor B. Mitić's scientific samples have been added to the list (details in KOVAČIĆ, 2019), while *Pardanthopsis dichotoma* (Pall.) L.W.Lenz was returned to *Iris dichotoma* Pall. and merged with the genus.

## CONCLUSION

Combining the data of the irises published in KOVAČIĆ (2019) with those of the rest of the Iridaceae members, I can conclude that since the establishment of our Garden we grew at least 30 genera of that family, depending on the nomenclature authority consulted, with approx. 438 taxa. The genus *Gladiolus* accounted for at least 50 taxa, *Crocus* around 30 and *Iris* 273 of that number. Today, according to the recent nomenclature, we grow 371 taxa in 21 genera of the Iridaceae family: 291 *Iris* species, hybrids and cultivars; 35 gladioli, 7 crocuses, and 38 members of other genera.

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**Tab. 3.** Horticultural hybrids of 'bearded' irises acquired for the Botanical Garden *Iridarium* collection between September 2019 and January 2021 (Suppl. to the Tab. 4 published in KOVAČIĆ, 2019). If not stated otherwise (IB, SDB...), the hybrids are Tall Bearded (TB). The rest of the new irises, both species and cultivars, are included to the general Iridaceae list in Table 1. Details in text.

Name of 'barbata' <i>Iris</i> hybrid	Origin and year of obtaining	Notes and remarks
Action Packed	Liepāja 2019	
All Night Long	Gift (Mr. Hrgić) 2020	
Antarctique (IB)	Cayeux Nursery 2020	Intermediate Bearded (IB)
Anvil of Darkness	Gift (Mr. Hrgić) 2020	
Arctic Fancy	Gift (Mr. Hrgić) 2020	
Baltic Star	Gift (Mr. Hrgić) 2020	
	Gift (Mr. Golob) 2020	
Batik (BB)	German Nursery 2021	Border Bearded (BB)
Beguine	Gift (Mr. Hrgić) 2020	
Bering Sea (IB)	Gift (Mr. Cetina) 2020	Intermediate Bearded (IB)
Beverly Sills	Gift (Mr. Hrgić) 2020	
Bonnie Babe (MDB)	Cayeux Nursery 2020	Miniature Tall Bearded (MTB)
Bord de Mer	Gift (Mr. Cayeux) 2020	
Branigan (SDB)	Gift (Mr. Cetina) 2020	Standard Dwarf Bearded (SDB)
Brides Halo	Gift (Mr. Hrgić) 2020	
Broadway Baby (IB)	Gift (Mr. Cetina) 2020	Intermediate Bearded (IB)
Cabibi	Gift (Mr. Hrgić) 2020	
Calamus (SDB)	Gift (Mr. Cetina) 2020	Standard Dwarf Bearded (SDB)
Cameroun	Cayeux Nursery 2020	
Cat's Eye	Wickford Nursery 2019	
Celebration Song	Cayeux Nursery 2020	
Celtic Tartan	Liepāja 2019	
Champagne Frost	Liepāja 2019	
Champagne Waltz	Gift (Mr. Hrgić) 2020	
Cherry Garden (SDB)	Gift (Mr. Cetina) 2020	Standard Dwarf Bearded (SDB)
Christmas Angel	Liepāja 2019	
Ci Sei (BB)	Gift (Mr. Cetina) 2020	Border Bearded (BB)
City Lights	Gift (Mr. Hrgić) 2020	
Clarence	Wickford Nursery 2019	
Cloud Ballet	Gift (Mr. Hrgić) 2020	
Coffee Whispers	Gift (Mr. Cetina) 2020	
Color Strokes	Gift (Mr. Cetina) 2020	
Conjuration	Gift (Mr. Hrgić) 2020	
Country Manor	Gift (Mr. Golob) 2020	instead of 'Autum Leaves'
Dark Triumph	Liepāja 2019	
Depute Nomblot	Hamilton 1995	bloomed among others, after a long time

Name of 'barbata' <i>Iris</i> hybrid	Origin and year of obtaining	Notes and remarks
Devil's Playground (IB)	Gift (Mr. Cetina) 2020	Intermediate Bearded (IB)
Dynamite	Gift (Mr. Hrgić) 2020	
Edith Wolford	Zagreb Nursery 2020	we had this hybrid in the past
	Gift (Mr. Cetina) 2020	we had this hybrid in the past
	German Nursery 2021	
Elzee	Gift (Mr. Cetina) 2020	we had this hybrid in the past
Festive Spirit	Gift (Mr. Cetina) 2020	we had this hybrid in the past
Frühlingskleid	Gift (dr. Regula) 2019	designated as "unknown 2" in Kovačić (2019)
Golden Ruffles	Liepāja 2019	
Goldkist	Gift (Mr. Cetina) 2020	
Goodbye Heart	German Nursery 2021	
Goodnight Moon	Gift (Mr. Hrgić) 2020	
Green Oasis (SDB)	Gift (Mr. Cayeux) 2020	Standard Dwarf Bearded (SDB)
Hello Darkness	Gift (Mr. Hrgić) 2020	
Hortense	Gift (Mr. Golob) 2020	
I'll Be Back (IB)	Gift (Ms. Arpana) 2019	Intermediate Bearded (IB), rebloomer
Indian Chief	Gift (Mr. Cetina) 2020	
Indiscreet	Gift (Mr. Hrgić) 2020	
Java Bleue	Gift (Mr. Cayeux) 2020	
Kalići's Black (SDB)	Gift (Mr. Cetina) 2020	Not registered. Hybridizer: Davor Cetina
Laughing Clown	Liepāja 2019	
Lightshine	Gift (Mr. Hrgić) 2020	
Lingering (IB)	Gift (Mr. Cetina) 2019	Intermediate Bearded (IB)
Little Rosy Wings (SDB)	Gift (Mr. Cetina) 2020	Standard Dwarf Bearded (SDB)
Look Inside (SDB)	Gift (Mr. Cetina) 2020	Standard Dwarf Bearded (SDB)
Luna di Miele (BB)	Gift (Mr. Cetina) 2019	Border Bearded (BB)
Magharee	Gift (Mr. Hrgić) 2020	
Mala Bruneta (SDB)	Gift (Mr. Golob) 2020	Standard Dwarf Bearded (SDB)
Mesmerizer	Liepāja 2019	
Milžu Čiņa	Gift (Mr. Golob) 2020	Not registered. Hybridizer: Laimonis Zaķis
Mission Impossible	Liepāja 2019	
Montmartre	Nova Zagora 2019	
Mrs. Horace Darwin (IB)	Zagreb Nursery 2020	Intermediate Bearded (IB)
Nibelungen	Gift (Mr. Cetina) 2020	
Night Edition	Zagreb Nursery 2020	
	Gift (Mr. Hrgić) 2020	
Orange Caper (SDB)	Gift (Mr. Cetina) 2020	Standard Dwarf Bearded (SDB)

Name of 'barbata' <i>Iris</i> hybrid	Origin and year of obtaining	Notes and remarks
Palm Springs	Gift (Mr. Golob) 2020	
Pamplemousse (IB)	Gift (Mr. Golob) 2020	Intermediate Bearded (IB)
Panocha	Gift (Mr. Hrgić) 2020	
Pay The Price	Gift (Mr. Golob) 2020	
Piste Noire	Gift (Mr. Cayeux) 2020	
Power Point	Liepāja 2019	
	Gift (Ms. Arpana) 2019	
Power Surge	Gift (Mr. Hrgić) 2020	
Pumpkin Cheesecake	Wickford Nursery 2020	
Quaker Lady	Gift (Mr. Cetina) 2020	
Queen of Angels	Liepāja 2019	
Queen's Circle	Cayeux Nursery 2020	
Quetta	Gift (Mr. Cetina) 2020	we had this hybrid in the past
Rabadan	Gift (Mr. Cetina) 2020	
Red Heart (SDB)	Zagreb Nursery 2020	Standard Dwarf Bearded (SDB)
Reg Wall	Gift (Mr. Golob) 2020	
Rimfire	Wickford Nursery 2019	
Rustic Cedar	Cayeux Nursery 2020	
Sangreal (IB)	Gift (Mr. Cetina) 2020	Intermediate Bearded (IB)
Saturn	Gift (Mr. Hrgić) 2020	
Scrambled (MTB)	Gift (Mr. Cetina) 2020	Miniature Tall Bearded (MTB)
Screen Play	Gift (Mr. Hrgić) 2020	
Song Of Norway	Gift (Mr. Hrgić) 2020	
Spectator (IB)	Gift (Mr. Cetina) 2020	Intermediate Bearded (IB)
Splashacata	Cayeux Nursery 2020	
Spooky (IB)	Gift (Mr. Cetina) 2020	Intermediate Bearded (IB)
Stairway To Heaven	Gift (Mr. Hrgić) 2020	
Stinger (SDB)	Gift (Mr. Cetina) 2020	Standard Dwarf Bearded (SDB)
Stop The Music	Gift (Mr. Hrgić) 2020	
Strange Summer	Liepāja 2019	
Sumatra	Gift (Mr. Golob) 2020	
Superstition	Liepāja 2019	
	Gift (Mr. Golob) 2020	
Tabac Blond	Liepāja 2019	
Thornbird	Cayeux Nursery 2020	
Tour de France	Liepāja 2019	
Ultimate (SDB)	Cayeux Nursery 2020	Standard Dwarf Bearded (SDB)
Wicked Good	Liepāja 2019	



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## SAŽETAK

### **Obilje bilja – zbirke Botaničkoga vrta Prirodoslovno-matematičkoga fakulteta Sveučilišta u Zagrebu (5): Gladiole (*Gladiolus*), šafrani (*Crocus*) i ostali pripadnici porodice perunikovki (Iridaceae).**

S. Kovačić

Nakon prošlogodišnje analize perunika (rod *Iris*, porodica Iridaceae), u petom je nastavku serije o povijesti zbirki biljaka koje su rasle u Botaničkom vrtu PMF-a od osnutka do danas obrađen ostatak porodice perunikovki (Iridaceae), s naglaskom na rod šafrana (*Crocus*) i gladiola (*Gladiolus*).

Podatci pokazuju da je od vremena osnivača Vrta, profesora Antuna Heinza (1895–1896.), do danas (siječanj 2021.) kroz vrtne zbirke prošlo najmanje 448 svojti perunikovki iz 30-ak rodova: divljih (samoniklih) vrsta Hrvatske i susjednih zemalja bivše Jugoslavije, donošenih s terenskih istraživanja (*planta viva*) i sađenih na kamenjare – biljnogeografske vegetacijske skupine s domaćom florom; ostalih divljih vrsta uzgajanih iz sjemenki naručivanih putem *Index (Delectus) Seminum*-mreže razmjene između botaničkih vrtova; ukrasnih kultivara, varijeteta i križanaca poznatih vrsta, dijelom uzgajanih iz sjemenki, a dijelom iz podzemnih skladišnih organa (podanaka, lukovica, bulbotubera); te križanca složenog podrijetla iz različitih linija, uzgajanih isključivo vegetativno. Dio ukrasnih šafrana i gladiola, nabavljen u obliku lukovica i bulbotubera za sadnju na ukrasne površine, nikada nije bio uveden u vrtanu bazu podataka, dok su nazivi svojti dijela zbirke tijekom godina izgubljeni ili su se pokazali pogrešnima. S početkom 2021. u Botaničkom vrtu PMF-a živjela je najmanje 371 svojta unutar 21 roda porodice perunikovki, od čega čak 291 pripada samom rodu perunika (*Iris*). Gladiola imamo 35 svojti, šafrana sedam, dok 18 preostalih rodova okuplja 38 vrsta i kultivara.

**Photo-tab. 1**

Representatives of seven Iridaceaea-genera grown in various Botanical Garden collections. Details in text and Table 1. Authors: Mirna Kirin (MK) and Sanja Kovačić (SK).



*Romulea bulbocodium* (MK)



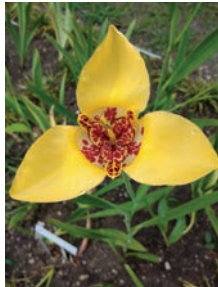
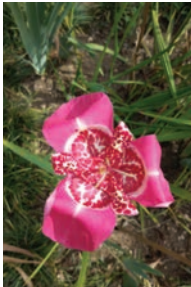
*Libertia ixioides* 'Goldfinger' (SK)



*Tritoleia laxa* 'Queen Fabiola' (SK)



*Crocosmia* 'Lucifer' (MK)



*Tigridia pavonia* 'Liliacea' (left) and 'Aurea' (right) (SK)



*Iris chrysographes* 'Black Form' (SK)



*Sisyrinchium californicum* (left), *S. angustifolium* (mid) and *S. depauperatum* (valid name *Olsynium junceum* subsp. *depauperatum*; right) growing sub-spontaneously in the Garden Nursery (SK)



**Photo-tab. 2**

Members of the *Crocus* genus, grown and sub-spontaneously spread in various Botanical Garden collections. Details in text and Table 1. Authors: Mirna Kirin (MK) and Sanja Kovačić (SK).



*Crocus heuffelianus* in purple and white form dominates the Garden Arboretum (left) in March (SK)



*Crocus tommasinianus* in bud and in flower (MK)



*Crocus vernus* in bud and in flower (MK)



*Crocus sieberi* (MK)



*Crocus imperati* (MK)



*Crocus neapolitanus* (MK)



*Crocus vernus* cult. (MK)



*Crocus* 'Ruby Giant' (MK)



*Crocus* cultivars (MK)



*Crocus flavus*  
(incl. *C. aureus*; MK)



*Crocus aureus*  
(valid name *C. flavus*; MK)



*Crocus chrysanthus* p.p. (SK)



*Crocus* 'Yellow Grandiflorus' (MK)

**Photo-tab. 3** (abcd)

Indigenous and exotic species, cultivars and hybrids of the genus *Gladiolus* grown in various Botanical Garden collections. Details in text, and Tables 1 and 2. Authors: Mirna Kirin (MK) and Sanja Kovačić (SK).



*Gladiolus illyricus*, native plant in the EuMed-Rockery (MK)



*Gladiolus italicus*, native plant in the Nursery (SK)



*Gladiolus (Acidanthera) murielae* cult. (SK)



Height ratio of *Gladiolus* Primulinus (tall, red) and Nanus (shorter, pink) hybrids (SK)



Height ratio of 'Primulinus' (shorter, red) and 'Grandiflorus' (tall, colourful) hybrids (SK)



*Gladiolus x gandavensis* hyb. fruits and seeds collected in the Garden (August 2020) (SK)



Detail of the *Gladiolus x gandavensis* hyb. seeds (August 2020) (SK)



*Gladiolus x gandavensis* hyb. seed germinating in cold glasshouse, January 2021 (SK)



*Gladiolus tristis* obtained from Dresden germinating in cold frame, January 2021 (SK)





*Gladiolus* Nanus / Butterfly 'Stella' (SK)



Nanus 'Nathalie' (SK)



Nanus 'Elvira' (SK)



Nanus *hyb.* (SK)



Nanus 'Prins Klaus' (SK)



Nanus / Ramosus *hyb.* (SK)



Nanus / Ramosus 'Charming Lady' (SK)



Nanus / Ramosus 'Charm' (SK)

**b**



Clump of Gladiolus Primulinus 'Perun' with a single 'Red Sea' (MK)



Primulinus 'Perun' (MK)



Primulinus 'Red Sea' (MK)



Primulinus 'Las Vegas' (SK)



Primulinus 'Atom' (SK)



Primulinus / Grandiflorus hyb. (SK)



Grandiflorus 'Las Vegas' (SK)



Grandiflorus 'Peter Pears' (SK)



Primulinus 'Peter Pears' (MK)





*Gladiolus Grandiflorus* 'Velvet Eyes' aff. (SK)



*Gladiolus* × *gandavensis* 'Silver Wedding' (MK)



*G. × gandavensis* 'Holland's Glory' (MK)



*G. × gandavensis* 'Early Rose' (MK)



*G. × gandavensis* 'Blue Spire' (MK)



*Grandiflorus* hyb. (SK)



*Grandiflorus* 'Priscilla' (SK)



*Grandiflorus* 'Carnival Mix' aff. (SK)



*Grandiflorus* 'My Love' aff. (SK)



*Grandiflorus* 'Traderhorn' (SK)



*Grandiflorus* 'Cote d'Azur' (SK)



*Grandiflorus* 'Red' (SK)



*Grandiflorus* 'Purple Flora' aff. (SK)



**Photo-tab. 4**

Representatives of new 'bearded' *Iris* hybrids acquired for our *Iridarium* collection between the last inventory (September 2019; suppl. to Tab. 4 in Kovačić, 2019) and January 2021. Details in text and Tab. 3. Author of photos: Sanja Kovačić.



**Amoena group:** *Iris* TB 'Tour de France'



**Blend group:** *Iris* TB 'Tabac Blond'



*Iris* TB **Exception group** 'Queen of Angels' (white) and **Line & Speckles group** 'Laughing Clown' (blue-white)



**Self group:** *Iris* TB 'Dark Triumph'



**Luminata group:** *Iris* TB 'Montmartre'



*Iris* TB **Luminata group** 'Clarence' (top) and **Plicata group** 'Rimfire'



**Luminata group:** *Iris* TB 'Celtic Tartan'



**Self group:** *Iris* IB 'Palm Springs'



**Self group:** *Iris* IB 'Lingering'



**Self group:** clump of *Iris* IB 'T'll Be Back'