

Foreword

Kevin Reid

Catalogues have always reflected the times in which they were produced. The first catalogue of the Royal Botanic Garden Edinburgh (although it was not known by that name at the time) was James Sutherland's *Hortus Medicus Edinburgensis*, also titled *A catalogue of the plants in the Physical Garden at Edinburgh : containing their most proper Latin and English names; with an English alphabetical index*. It is listed as having been 'printed by heir of Andrew Anderson' in Edinburgh in 1683. The reference for this 2021 edition of the *Catalogue of Plants* (as it is now called) will be very different. It is not a published book, but rather a PDF providing statistics and narrative information about the collection. It is available to download alongside an Excel spreadsheet, which users can interrogate on screen, that lists all the accessions of living plants.

The purpose of this new edition, however, will be the same as Sutherland's was back in 1683: to provide a list of all the plants growing in the institution of RBGE. Although many species have a long lifespan, extended through horticultural manipulation and propagation, the value of this list is that it provides an accurate representation of the four Gardens of RBGE at this moment in time, both for current use and for posterity. It will enable staff to allocate resources and will drive policy decisions. It will even allow RBGE to share its collections with others within existing agreements and, to some extent, to measure its collections against others worldwide.

The previous edition of this Catalogue was published in 2012. Compiling and publishing an update has long been in the planning, and it was hoped that publication would coincide with RBGE's 350th anniversary in 2020. Of course the emergence of Covid-19 halted this work, with RBGE staff instead committed to ensuring the primary care of our living collection and safeguarding each other throughout the various waves of the pandemic, demonstrating extraordinary professional and personal commitment in unprecedented times.

It is inevitable with any living collection that a catalogue will be out of date by the time it reaches those wishing to consult it. Staff are working daily to care for the plants, and part of that work involves updating records, whether relating to the health of the plant, its name or the numbers of specimens planted – information which is often subject to change. The production of this Catalogue has driven a particular impetus in horticultural staff to stocktake the collections in their care and ensure that the most accurate records possible are logged in the database in preparation for producing a list that best serves its users.

The maintenance of these records distinguishes a botanic garden from other types of large garden or park where meticulous records are not kept. How these records are put to use and how they enable the Garden to achieve its mission can be found in the descriptions of projects and developments in the following pages. The tables describing the collections in statistical terms in the 'Overview of the Collections' provide

an easy-to-access summary for those wishing to understand the sheer extent of the range of the plant kingdom held in the RBGE gardens and glasshouses, both temperate and tropical.

In what is an exciting development for RBGE, over the winter of 2020–2021 the living collection records were migrated from BG-BASE™ (Walter & O'Neal, 1985–2018) to IrisBG® (Rustan & Ostgaard, 2017). Since then, horticultural staff have been familiarising themselves with this new record system. This Catalogue is the first for which data has been extracted from IrisBG and follows the Angiosperm Phylogeny Group system of family classification. Multiple sources have been used for further verification, details of which can be found in the Overview.

Our world has changed since the pandemic, as we grapple with recurring variants and prepare for the 'next normal'. The natural world is also changing rapidly. As this edition is published online, humanity is facing the stark reality of responding to the twin challenges of the biodiversity crisis and the climate emergency. Our living collections, as repositories of plant biodiversity and our natural capital, have never been so important to humankind in the face of temperature change, wildfires, flooding, drought and adverse weather events including storms.

The work of RBGE tackles the challenges facing biodiversity and human understanding of the natural world, and the living collection supports this work in many ways. At a time when plant life and the organisms that depend on it are under the greatest threat we have ever known due to climate change, the living collection is playing its own small part in expanding knowledge and engagement, and providing citizens of and visitors to Scotland with green spaces for their health and enjoyment. Although it is simply not possible to capture the diversity and beauty of RBGE's living collection in a set of electronic documents, our desire is nonetheless that this Catalogue will be used as part of the 'living toolkit' for accessing our collection and ensuring it can be used by all for the benefit of all.

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Overview of the Living Collection at the Royal Botanic Garden Edinburgh

David Knott, Benedict Lyte & Kate Hughes

Together with the Herbarium collection and the Library and Archive collection, the living collection underpins the botanical, horticultural, conservation and education work of the Royal Botanic Garden Edinburgh (RBGE). The collection, which has been amassed over many years, includes plants from 152 countries and is grown in four climatically and topographically diverse regions of Scotland. The four garden landscapes influenced by the plants growing in them are also used as a backdrop for exhibitions, events and recreation, meaning that the plants are at the core of RBGE's work.

Ensuring that the plants meet the needs of all users is a challenge that necessitates constant and accurate record keeping. Analysis of these records allows the collection to be audited, benchmarked and managed. While any of the data in this Overview can be computed at any time, their compilation into the *Catalogue of Plants*, provided as a spreadsheet alongside this Overview, is a useful source of reference and historic record.

The statistics and tables that follow in this Overview were all computed on 31 December 2020. While these figures provide a snapshot of the collection on this date, it should be noted that the collection is dynamic and constantly changing.

The figures in Table 1 record totals for the collection as a whole, including plants cultivated in 'safe sites' as part of the International Conifer Conservation Programme (ICCP), which is based at RBGE, and plants held in the seed store (gene bank). Not all the changes from previous years are derived from increases or decreases in the number of plants in the collection; some are brought about by amendments to taxonomic delimiters such as new families or splits in genera, as well as realignment of the living collection to the higher-level taxonomy used by the World Flora Online (2021) database.

Table 2 provides a summary of the numbers of accessions coming into the collections annually and their sources since 2013. Trends can be observed by looking at such statistics over time. The figures in Table 2 show a marked drop in genera, species, taxa and accessions coming into the collection. The main cause of this in 2020 is the Covid-19 pandemic when all travel and collecting trips came to an abrupt halt. However, there has been a gradual decline in new accessions since 2013. It can be speculated that this decline is due to the implementation of the Nagoya Protocol in 2014 and the associated increase in administration required to collect, export and import live plants. This Protocol signifies an important development in the access and benefit-sharing regulations for individual countries over the biodiversity within their boundaries and it has affected plant collection practices.

Table 1 Life form breakdown

	Families ¹		Genera ¹		Species ²		Taxa ³	Accessions ⁴	No. of plant records ⁵	No. of plants (mass as 5)
	No.	% world ⁶	No.	% world	No.	% world				
Bryophytes	12	10	16	2	22	0.1	22	24	9	40
Fern allies	3	100	4	80	57	6	60	97	155	320
Ferns	31	64	133	42	634	6	719	1,700	2,751	13,557
Gnetophytes	3	100	3	100	12	9	14	26	40	110
Conifers	5	50	66	47	405	66	797	4,399	2,171	24,486
Ginkgophytes	1	100	1	100	1	100	1	15	43	43
Cycads	2	100	10	90	34	11	34	58	67	92
Dicots	195	38	1,685	16	7,456	3.75	10,986	22,761	42,749	104,248
Monocots	50	67	635	23	2,750	4.5	3,901	7,034	9,362	57,800
Total	302	48	2,553	19	11,371	4	16,534	36,114	57,347	200,696

Notes

- Family and genus placements follow World Flora Online (2021). Available online: www.worldfloraonline.org (accessed September 2021) and The Catalogue of Life Partnership (2017). APG IV: Angiosperm Phylogeny Group classification for the orders and families of flowering plants. Checklist dataset <https://doi.org/10.15468/fzuaam> (accessed via GBIF.org October 2021).
- A 'species' refers to any unique combination of generic name and specific epithet, even if the actual taxon is of infraspecific rank. Thus, *Vinca major*, *Vinca major* 'Alba' and *Vinca major* var. *oxyloba* would be counted as one species and three taxa.
- 'Taxa' include species, subspecies, varieties, cultivars and hybrids between them.
- An 'accession' is defined as one or more individuals representing one taxon from one source at one time and in one propagule type (seed, cutting or whole plant).
- A 'plant record' is a subset of an accession, and may represent one or more individual plants, as long as those individual plants are planted in one location within the collection.
- The world percentages come from the following sources:
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 Hornworts and liverworts (Anthocerotophyta and Marchantiophyta): SÖDERSTRÖM, L. *et al.* (2016). World checklist of hornworts and liverworts. *PhytoKeys*, 59: 1–828. doi: <https://doi.org/10.3897/phytokeys.59.6261>
 Ferns and allies (Pteridophyta): THE PTERIDOPHYTE PHYLOGENY GROUP (PPG I) (2016). A community-derived classification for extant lycophytes and ferns. *Journal of Systematics and Evolution*, 54: 563–603. doi: <https://doi.org/10.1111/jse.12229>
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Table 2 Summary of RBGE accessions since 2013

Year	Total accessions	Provenance of material				% wild provenance (average)	No. of countries from which material obtained
		Unknown	Garden	Indirect wild	Direct wild		
2013	2,228	111	411	221	1,485	67	46
2014	1,648	154	317	366	811	49	45
2015	1,889	39	338	154	1,358	72	49
2016	1,339	27	226	105	981	73	41
2017	1,867	58	468	153	1,188	64	43
2018	2,084	115	899	457	613	29	35
2019	1,190	36	407	132	615	52	35
2020	964	112	262	203	387	40	38
8-year total	13,209	652	3,328	1,791	7,438	56	90

Where collections are held

RBGE comprises four sites – Edinburgh, Benmore, Logan and Dawyck – and each Garden has vastly different climatic characteristics. At Edinburgh there are also extensive research and display glasshouses, nursery facilities and a small seed bank. Taken together, and along with the ICCP sites, RBGE has resources that enable the cultivation of a wide range of plants. Table 3 shows the number of plants grown at each of these localities, and lists the number of taxa and accessions that are unique to each one. The high percentage of unique accessions demonstrates that the four Gardens each play a distinct and important part in the cultivation and representation of the whole collection.

Table 4 gives area, elevation and climatic data for each of the four Gardens.

Collection dynamics since the *Catalogue of Plants 2012*

Plant material ‘flows’ through the collection, entering as new accessions from the wild or cultivated sources, and leaving through having died or been deaccessioned (Cronk, 2001). Since the publication of the last Catalogue (Rae *et al.*, 2012), RBGE has received an average of 1,500 new accessions per year. However, this number is usually equalled by the number of losses. While this might seem high, it must be remembered that plants in the collection are not always similar to ordinary ornamental garden plants; many are annuals or short-lived perennials, while others die from cold and damp or simply because they are difficult to grow.

Plant material comes into the Garden in a variety of forms and propagules such as seeds, whole plants and cuttings. At the same time

as it is given an accession number, each entity is coded to one of the types of incoming material shown in Table 5. It shows that most material comes to the Garden as seed (64 per cent of the total compared with 54 per cent in the *Catalogue of Plants 2012*) or from plants (20 per cent of the total compared with 26 per cent in the *Catalogue of Plants 2012*). Seed has traditionally been the preferred method of collection as it is light, easy to transport and, until 2020, did not require quarantine measures, these being introduced in that year. It is also likely to contain greater genetic variability than a small batch of plants or cuttings and in general is less likely to carry pests and diseases.

Sources of plant material in the living collection

Acquisition of new material – whether collected on fieldwork, gifted or given in exchange – is governed by RBGE’s Collection Policy (Rae *et al.*, 2006). This policy details the plant groups and geographic areas in which RBGE wishes to have representative collections, and therefore which plants staff actively seek out during fieldwork. Traditionally, priority has been given to wild-collected material for research and conservation activities. The Collection Policy states a target to raise the wild-origin content from 53 per cent in 2006 to 60 per cent by 2016, a target that was successfully met. In the years since 2016 the percentage of wild-origin material has fluctuated, as shown in Table 6 and Fig. 1, and the target was narrowly missed in 2020. The wild collection of material has been seriously curtailed since the introduction of the Nagoya Protocol in 2014 as countries slowly work out their own individual requirements for the access and benefit sharing of their own genetic resources. Garden-origin material does, however, also have a role, for instance in predominantly ornamental areas such as the Herbaceous Border, or in areas where cultivated varieties predominate such as

Table 3 RBGE Gardens and their holdings

Garden	Sub-area	Families	Genera	Species	Taxa	Living accessions			Plant records	Plants (mass as 5)
					Total	Total	Unique ¹	% unique		
Edinburgh	Whole site	310	2,349	8,400	11,959	24,841	6,808	27	42,739	140,483
	Glass	245	1,490	4,161	4,737	8,249	3,399	41	9,595	22,208
	Outside	238	1,826	8,399	9,891	17,472	6,807	39	27,981	118,275
	Propagation	104	594	1,606	2,062	–	–	–	3,229 ²	–
	Seed bank	205	412	4,325	4,673	–	–	–	1,934 ³	–
Benmore		147	431	1,433	2,326	5,172	1,546	30	13,346	17,508
Dawyck		81	210	894	1,276	3,375	827	25	4,451	5,897
Logan		131	760	1,897	2,718	3,874	2,137	55	5,364	16,729
ICCP sites outside RBGE		131	321	684	816	2,676	363	38	15,317	21,427

Notes

1. Unique to a Regional Garden or sub-area of the Edinburgh Garden.
2. Not plant records but propagation records.
3. Not plant records but germplasm records.

Table 4 Geographic and climatic data for Edinburgh and the Regional Gardens

Garden (date) ¹	Sub-area	Lat – long	Area (ha)	Elevation (m)	Rainfall (mm p.a.)	Temp. (min – max) (°C)
Edinburgh (1820) ²	Whole site	55°57'57" 03°12'12"	32	20–40	704	–15.5 to 30
	Glass	"	1.5	NA	NA	10 to 25
	Outside	"	32	20–40	NA	–15.5 to 28
	Propagation	"	4	NA	NA	10 to 25
	Seed bank	"	NA	NA	NA	–20
Benmore (1929)		56°01'22" 04°58'52"	49	15–137	2,000–3,500	–10 to 30
Dawyck (1979)		55°36'04" 03°20'57"	24	180–260	780–1,200	–25 to 30
Logan (1969)		54°44'38" 04°57'25"	11	25–65	830–1,120	–10.5 to 27
ICCP sites outside RBGE		NA	93	0–180	575–3,500	–25 to 35 (44)
RBGE combined		NA	116	NA	NA	NA

Notes

1. Date when founded or moved to current site.
2. RBGE as an institution was founded in 1670 but moved four times before settling at its current location in the Inverleith area of Edinburgh.

Table 5 Types of incoming material

	Spore	Seed	Plant	Cutting	Rhizome	Other	Total
8-year total 2012–2020	646	8,479	2,658	901	37	485	13,206
All accessions (% of total)	5	64	20	7	0	4	

Table 6 Provenance

Provenance material ¹	All accessions in the database	% of total accessions	Living accessions	% of total of living accessions
Garden (G)	27,833	35.24	12,589	34.62
Wild (W)	43,588	55.19	18,840	51.81
Indirect wild origin (Z) ²	4,544	5.75	2,557	7.03
Unknown (U)	3,015	3.82	2,376	6.53
Total	78,980		36,362	

Notes

1. Provenance categories and codes from the *International Transfer Format (ITF) for Botanic Garden Plant Records* (Wyse Jackson *et al.*, 1998).
2. Indirect wild origin means material with wild-origin details that was cultivated before being received by RBGE.

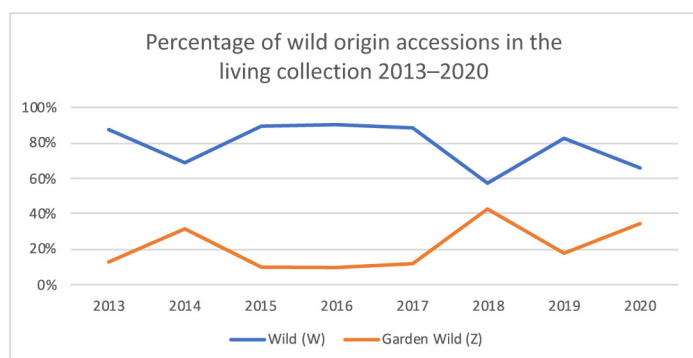


Fig. 1 Percentage of accessions directly collected from the wild or which have been passed on by an individual or institution and arrived from the wild to them. These figures do not include accessions to the living collections which are of garden origin or those for which the origin is unknown.

the Edible Garden and Fruit Garden. Table 6 shows the provenance of material in the collection.

Cultivars and hybrids

As noted above, wild-origin material is preferred for the living collection at RBGE because of its potential for research and conservation compared with garden-origin material or cultivars. However, some projects, such as the Edible Garden, the Fruit Garden and redevelopment of the

Herbaceous Border, have caused an increase in the numbers of cultivars and hybrids. The Collection Policy (Rae *et al.*, 2006) recommends that cultivars should not account for more than 15 per cent of the collection. In Table 7 the number of cultivars and hybrids is compared with those of naturally occurring taxa.

Verification

Verification is the process of identifying and accurately naming plants in the living collection. This may involve confirming an existing name, changing an existing name to another name or determining the plant's identity if it is unknown. Verification also involves checking that the name selected is valid according to the *Codes of Botanical and Horticultural Nomenclature* (Brickell *et al.*, 2009; McNeill *et al.*, 2007), and represents accepted taxa, not synonyms. Table 8 shows the number of verified accessions and living accessions by level of verification, with level 1 being the lowest and level 4 the highest level of verification.

Stocktaking

Stocktaking is a time-consuming but vital activity that helps ensure that the plants listed in the database exist on the ground. In the four years since 2017, 75 per cent of the living collection has been checked at least once. Stocktaking is now more user friendly, thanks to the availability of handheld devices, more accessible databases and mapping software that enables records to be updated in front of the plants in the garden rather than in a two-step exercise where records are taken on paper in the garden and then updated on the database in the office.

Table 7 Cultivars and hybrids

Type of material	Accessions		Plant records		No. of plants (mass as 5)	
	Living	% of total	Living	% of total	Living	% of total
Naturally occurring taxa	31,697	88	71,385	92	12,829	78
Cultivars	3,709	10	5,704	7.2	1,161	7
Non-cultivar hybrids	592	2	690	0.8	2,454	15
Total	35,998		77,779		16,444	

Table 8 Verification levels

Level	Definition of level of verification	All accessions	% of all accessions	Living accessions	% of living accessions
1	Determined by comparison with other, named living material	126	0.30	91	0.25
2	Determined by a taxonomist or other competent person using the facilities of a library and herbarium, or other documented living material	5,483	15	3,468	26
3	Determined by a taxonomist who is currently or has been involved in a revision of the family or group	8,509	23.5	3,773	10
4	Identification was proposed by its author and based, at least in part, on material representing this entity; as such, this represents 'type' or authentic material	9	<1	3	<1
	Total	14,127		7,335	

Conservation status categories

The World Conservation Union (IUCN) (IUCN, 2011) lists criteria for allocating conservation-status categories, or threat categories (sometimes also known as 'Red Listing'), to plants and animals. Table 9 shows the number of plants in the collection listed under each category.

Taxonomic specialities of the living collection

There are some taxonomic groups in which RBGE currently specialises or has specialised in the past. These groups are particularly well represented in the living collection, since they are actively used for taxonomic, molecular and other research. In Table 10 the families are ranked in descending order by number of accessions.

Geographic specialities of the living collection

Just as RBGE specialises in certain plant families, so it also concentrates on certain areas of the world. Although RBGE maintains a global collection comprising accessions that have been collected from 152 countries (157 in 2006 and 167 in 2001), not all parts of the world are represented equally in the living collection. Many of the particularly well-represented areas reflect RBGE's activities, past and present, in writing floras for that part of the world, for example Turkey, China, Bhutan and Soqotra (Yemen). In other cases, comprehensive

representation reflects ecological and climatic compatibility with the conditions available at the four Gardens; for instance, RBGE has had a long-term interest in alpine plants and its collections are particularly rich in high-elevation plants from around the world, most notably from the Himalayas and the Rockies. In Table 11 the 20 countries for which RBGE has the most accessions are ranked in descending order by number of accessions.

Collecting fieldwork trips

Table 12 shows the fieldwork trips with the largest number of collections since 2012. All the fieldwork acronyms currently in our plant records database, along with the names of the people who participated in those trips, are listed in Appendix 2, although the Appendix does not provide a comprehensive list of all the collector codes or individuals who have collected plants since 2012. All of the collector codes and individuals involved in trips prior to 2012 are listed in Rae *et al.* (2012), pp. 20–28, and in Appendix 2.

Continents represented in the collections

The map in Fig. 2 shows the number of accessions in the living collection by their continent of origin.

Table 9 IUCN Red List taxa cultivated at RBGE, listed under IUCN's threat categories

	World total for land plants ¹	Living taxa	% of threatened taxa at RBGE ²	Living accessions	Wild accessions
Extinct in wild (EW)	42	4	9.5	7	0
Critically endangered (CR)	4,674	82	1.75	347	127
Endangered (EN)	8,593	188	2	973	658
Vulnerable (VU)	8,549	254	3	817	468
Data deficient (DD)	4,090	128	35	313	174
Conservation dependent (CD)	157	1	0	1	1
Near threatened (NT)	3,181	171	5	656	392
Least concern (LC)	24,809	1,785	7	5,764	3,460

Notes

1. Data from IUCN (2021). The IUCN Red List of Threatened Species. Version 2021–2. Available online: <https://www.iucnredlist.org> (accessed March 2021).
2. The IUCN term 'Threatened' covers the categories CR, EN and VU.
3. Categories and definitions can be found at <https://www.iucnredlist.org/>

Table 10 Plant families with strong representation in RBGE's collection

	World total		Alive at RBGE				Taxa	Accessions
	Genera	Species	Genera		Species			
			Number	% of world total	Number	% of world total		
Ericaceae	141	3,716	56	40	1,078	29	1,592	4,585
Rosaceae	109	5,325	66	61	762	14	965	2,109
Pinaceae	12	281	11	92	264	94	323	1,867
Cupressaceae	32	208	29	91	127	61	274	1,253
Orchidaceae	905	28,809	132	15	548	2	608	966
Iridaceae	76	2,411	34	45	355	15	482	945
Asparagaceae	126	3,093	77	61	430	14	476	904
Asteraceae	1,665	23,600	151	9	459	2	547	882
Amaryllidaceae	81	2,333	43	53	285	12	505	855
Gesneriaceae	166	3,205	69	42	305	10	339	803
Zingiberaceae	52	1,611	37	71	309	19	302	758
Liliaceae	18	771	17	94	310	40	285	694
Ranunculaceae	59	2,769	29	49	308	11	372	665
Primulaceae	65	2,970	22	34	200	7	292	573
Sapindaceae	141	1,858	13	9	126	7	174	531
Taxaceae	6	39	5	83	25	64	81	504
Podocarpaceae	19	201	15	79	88	44	89	495
Betulaceae	6	282	4	67	107	38	123	473
Berberidaceae	18	779	13	72	180	23	215	458
Begoniaceae	3	1,618	2	67	193	12	220	411

Table 11 Countries of origin of wild-collected material

Country	Genera	Species	Taxa	Accessions
China	371	1,633	1,672	3,474
USA	291	680	787	1,575
Japan	236	469	575	1,396
Chile	186	351	377	1,369
United Kingdom	200	363	468	1,026
Indonesia	127	389	427	934
Nepal	157	323	363	708
Vietnam	166	303	317	608
Papua New Guinea	88	240	289	574
Malaysia	82	203	258	485
Taiwan	150	205	232	482
Turkey	130	256	332	479
South Africa	110	271	301	449
Russian Federation	167	363	407	444
Spain	156	243	279	442
New Zealand	102	260	283	430
Australia	96	202	218	410
Bhutan	96	187	212	362
India	100	184	217	321
Canada	96	151	179	305

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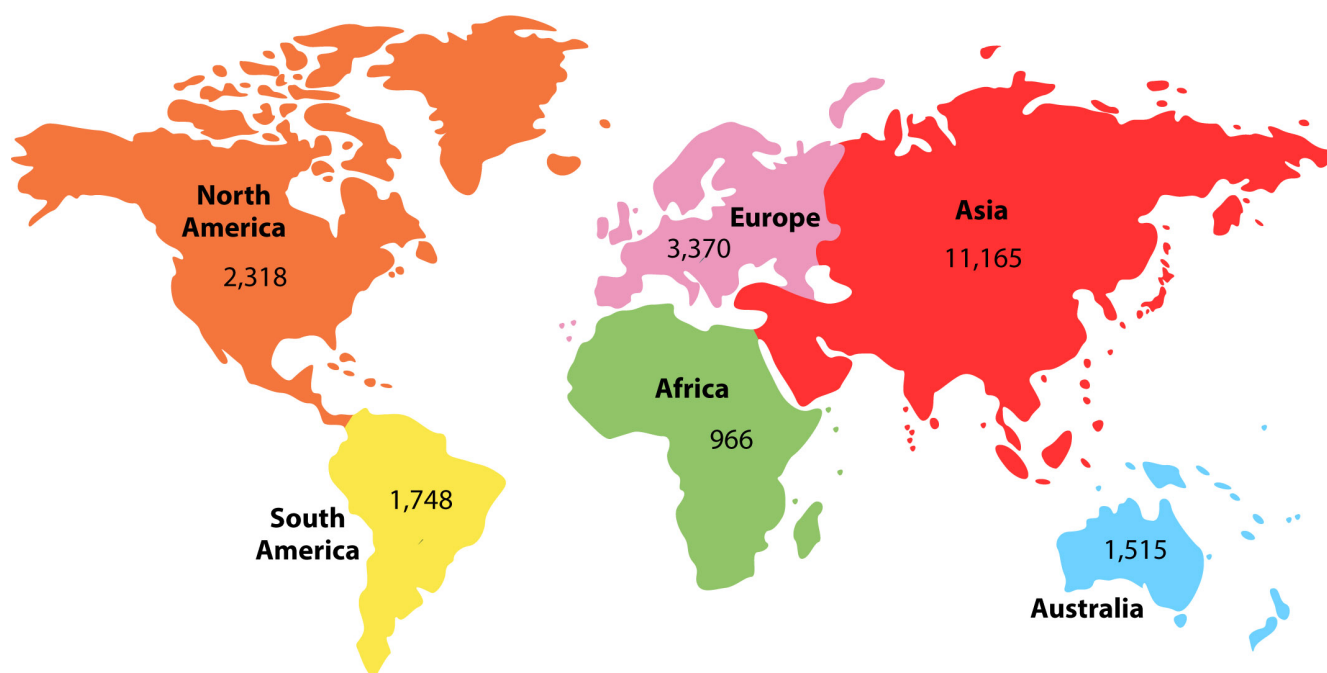
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Table 12 Fieldwork trips providing living material for RBGE since 2012

Code	Name	Alternative name/Participants/Notes	Date	No. of alive accessions	Collecting country
REKET	RBGE & Kulob Expedition to Tajikistan	John Mitchell & Tony Miller	2016	12	Tajikistan
KEEKT	Kew Edinburgh Expedition with Kulob to Tajikistan	John Mitchell, Mariyo Boboev & Jovidon Boboev	2016	39	Tajikistan
SUBOE	Mark Hughes, Sadie Barber, Deden Girmansyah & Abdulrohman Kartonegoro	–	2016	22	Sumatra
URBCR	Robert Unwin, François Bonnet & Christophe Randin	–	2016	47	Switzerland
EHBC	Edinburgh, Howick Expedition to British Columbia	Neil McCheyne, David Gray & Andrew Jameson	2016	107	Canada
LGCKH	Hanoi, Logan, Kew, Glasgow & Cambridge Expedition to Vietnam (2016)	Nguyen Van Du, Vu Tien Chinh, Bui Hong Quang, Nguyen Cong Sy, Ong Vu Tien Chinh, Richard Baines, Andrew Luke, William Ritchie & Alexander Summers	2016	152	Vietnam
BRAW	Britain Nepal Bicentenary Expedition to Rasuwa	Mark F. Watson, Bhaskar Adhikari, Neil Davidson, Kate Hughes, Simon Milne, Kamal B. Nepali, Hem R. Paudel & David Tricker	2016	152	Nepal
SA-17-1-	Anthony G. Miller & Gunnar A. Øvstebø	Anthony G. Miller, Gunnar A. Øvstebø, Bassim Al Rakaf, Majed Al Majed & Othman Llewellyn	2017	11	Saudi Arabia
DEGMA	Dundee Edinburgh Glasgow Maritime Alps	Richard Brown (RBGE), Alasdair Hood (Dundee Botanic Garden), Christine Nicholson (Glasgow Botanic Garden) & Clare Reaney (Dundee Botanic Garden)	2017	33	France
BSH	Flora of Nepal Expedition to Nepal – Bajura Saipal Himal	Colin Pendry, William Hinchliffe, Matthew Jackson <i>et al.</i>	2017	45	Nepal
EHOC	Edinburgh Howick Oregon California	–	2017	102	USA
BCCG	Peter Baxter, Mauricio Cano, Tom Christian & Martin Gardner	–	2017	176	Chile
PECAT	Pamirs Expedition to Central Asia Tajikistan	John Mitchell & Kit Strange	2018	56	Tajikistan
EHS	Edinburgh & Howick Slovenia	Martine Borge, David Gray, Robert Jamieson & Neil McCheyne	2018	121	Slovenia
LWCWEI	Logan, Wales, Cambridge, Wrest Park, RBGE & IEBR Vietnam Expedition	Richard Baines, William Richie, Ángela Cano, Andrew Luke, Hazel France, Nguyn Van Dur, Nguyen Hung Manh, Tjnh Xuan Thanh & Le Chi Toan	2019	15	Vietnam
EUPUS	Twyford & Gross	–	2019	0	USA
BROWIL	Yunnan	Richard Brown & Kirsty Wilson	2019	135	China
MADDT	Martyn A. Dickson & David Tricker	–	2013–2016	156	China
MHDT	David Tricker, Mark Hughes, Chien-I Huang & Chien-Hua Liu	–	2014	91	
EKBOE	East Kalimantan Bogor Edinburgh	Deden Girmansyah, Marlina Ardiyani, Mark Hughes & Helen Yeats	2016	20	Indonesia

**Fig. 2** Accessions by Continent. Map generated with plant records in IrisBG using an open access template sourced from indzara.com