

Exploitation of digital collection data at the Museum für Naturkunde Berlin

Saskia Jancke, Dirk Striebing, Frieder Mayer

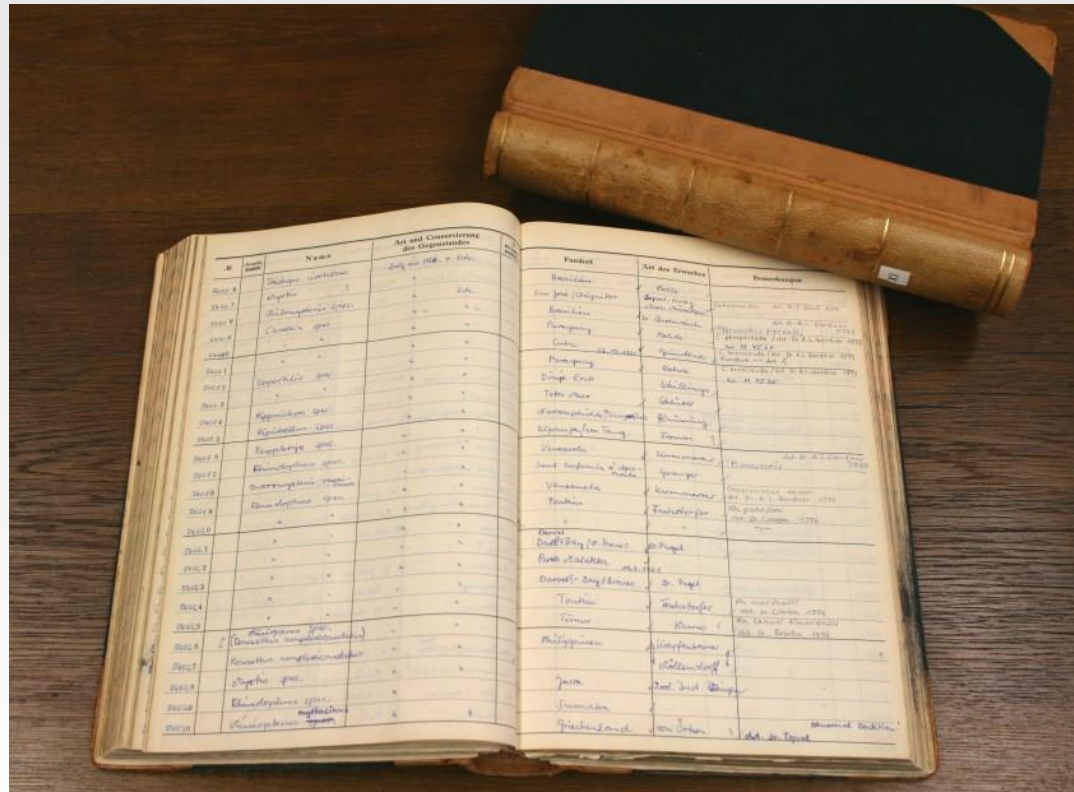


Collection history

- Museum founded 200 years ago
- Ca. 40 specimen in the beginning of the 18th century
- Ca. 2,400 specimen in 1854
- Ca. 150,000 specimen now
- Between 1906 to 1916 ca. 3,500 per year

Data storage past to present

- Hand-written catalogues, sorted by inventory number



Data storage past to present

- File cards sorted by species, started 50 years ago



Data storage past to present

- Excel spreadsheets, sorted by order, started ca. 10 years ago

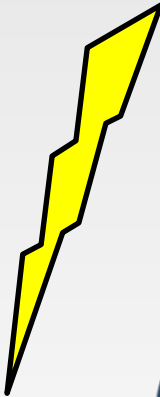
	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
	Inv No	order	family	genus	species	subspe	identified by	skull	skeleton	skin_Fe	skin_Ba	alcohc	samg	note	locality_name	pr
9865	2138b	Artiodactyla	Bovidae	Neotragus	moschatius			x						Uk zerbrochen		M
9866	2158a	Artiodactyla	Bovidae	Pelea	capreolus			x	x						Cap	
9867	2158b	Artiodactyla	Bovidae	Redunca	redunca			x		x					Sonntagsfluss?	
9868	2175a	Artiodactyla	Bovidae	Alcelaphus	buselaphus			x	x						Kap, S-Afrika	
9869	2175b	Artiodactyla	Bovidae	Boselaphus	tragocamelus				x						Kap/S.A.	
9870	2256a	Artiodactyla	Bovidae	Bos	javanicus					x				Fellteil	Java	
9871	2256b	Artiodactyla	Bovidae	Bos	javanicus			x						Ukf	Java	
9872	22773a	Artiodactyla	Bovidae	Ovis	aries			x							Ogliestra / Sardinien	Ita
9873	22773b	Artiodactyla	Bovidae	Ovis	aries ?				x					als musimon im Katalog (heute aries)	Ogliestra	Si
9874	23379a	Artiodactyla	Bovidae	Raphicerus	spec.			x						Nummer doppelt vergeben (auch an Sylvicapra)	Caprivi Zipfel	
9875	23379b	Artiodactyla	Bovidae	Sylvicapra	grimmia			x						Uk fehlt	Caprivi-Zipfel	
9876	27421a	Artiodactyla	Cervidae	Capreolus	capreolus									Ukf	Schleissheim	Bl
9877	27421b	Artiodactyla	Cervidae	Capreolus	capreolus			x						nur Uk	b. München	Bl
9878	28812a	Artiodactyla	Cervidae	Cervus	elaphus			x							Rev. Solarnia	Pc
9879	28812b	Artiodactyla	Cervidae	Cervus	elaphus			x						Uk		
9880	2887a	Artiodactyla	Bovidae	Redunca	arundinum			x								A
9881	2887b	Artiodactyla	Bovidae	Redunca	redunca			x								A
9882	29119a	Artiodactyla	Cervidae	Cervus	elaphus			x						1/2 Ukf	Solarnia	Pc
9883	29119b	Artiodactyla	Cervidae	Dama	dama			x						1/2 Ukf	Solarnia	Pc
9884	29197a	Artiodactyla	Cervidae	Cervus	elaphus			x							Rev. Jankowitz	Pc
9885	29197b	Artiodactyla	Cervidae	Cervus	elaphus			x						Uk		
9886	30819a	Artiodactyla	Cervidae	Cervus	elaphus			x							Gladrow/Greifswald	
9887	30819b	Artiodactyla	Cervidae	Mazama	spec.			x							Joinville	Bl
9888	31246a	Artiodactyla	Cervidae	Cervus	elaphus			x						Uk		
9889	31246b	Artiodactyla	Cervidae	Cervus	elaphus			x	?						Marnajo Geb.	
9890	32202a	Artiodactyla	Suidae	Sus	scrofa			x							Oberf. Kieferstädtel	Pc
9891	32202b	Artiodactyla	Suidae	Sus	scrofa			x							Oberf. Rauden	Pc
9892	32425a	Artiodactyla	Suidae	Potamochoerus	porcus			x								
9893	32425b	Artiodactyla	Suidae	Sus	salvianus							X		Zunge und innere Organe		
9894	33459a	Artiodactyla	Camelidae	Camelus	bactrianus				x					gest. 06.10.1924, Kisten I, II, III		
9895	33459b	Artiodactyla	Cervidae	Muntiacus	muntjak			x						Sch zerbrochen, getackert	Jalifu, Jynnan	
9896	33841a	Artiodactyla	Bovidae	Bison	bison			x	x					Skelett-Teile	Oberer Saskatchewan	
9897	33841b	Artiodactyla	Bovidae	Bison	bonasus			x							ob. S. katchewan?	
9898	33842a	Artiodactyla	Bovidae	Bison	bison			x	x						Oberer Saskatchewan	
9899	33842b	Artiodactyla	Bovidae	Bison	bonasus			x							oberer Seskatchewan?	
9900	33843a	Artiodactyla	Bovidae	Bison	bison			x	x						Oberer Saskatchewan	

Data storage in excel spreadsheets

- Continuously added and updated
- Information on taxonomy, inventory number, locality, preparation, accession, etc.
- Problem: updates per record, not cumulative
- Problematic for information on taxonomy, locality

The project idea

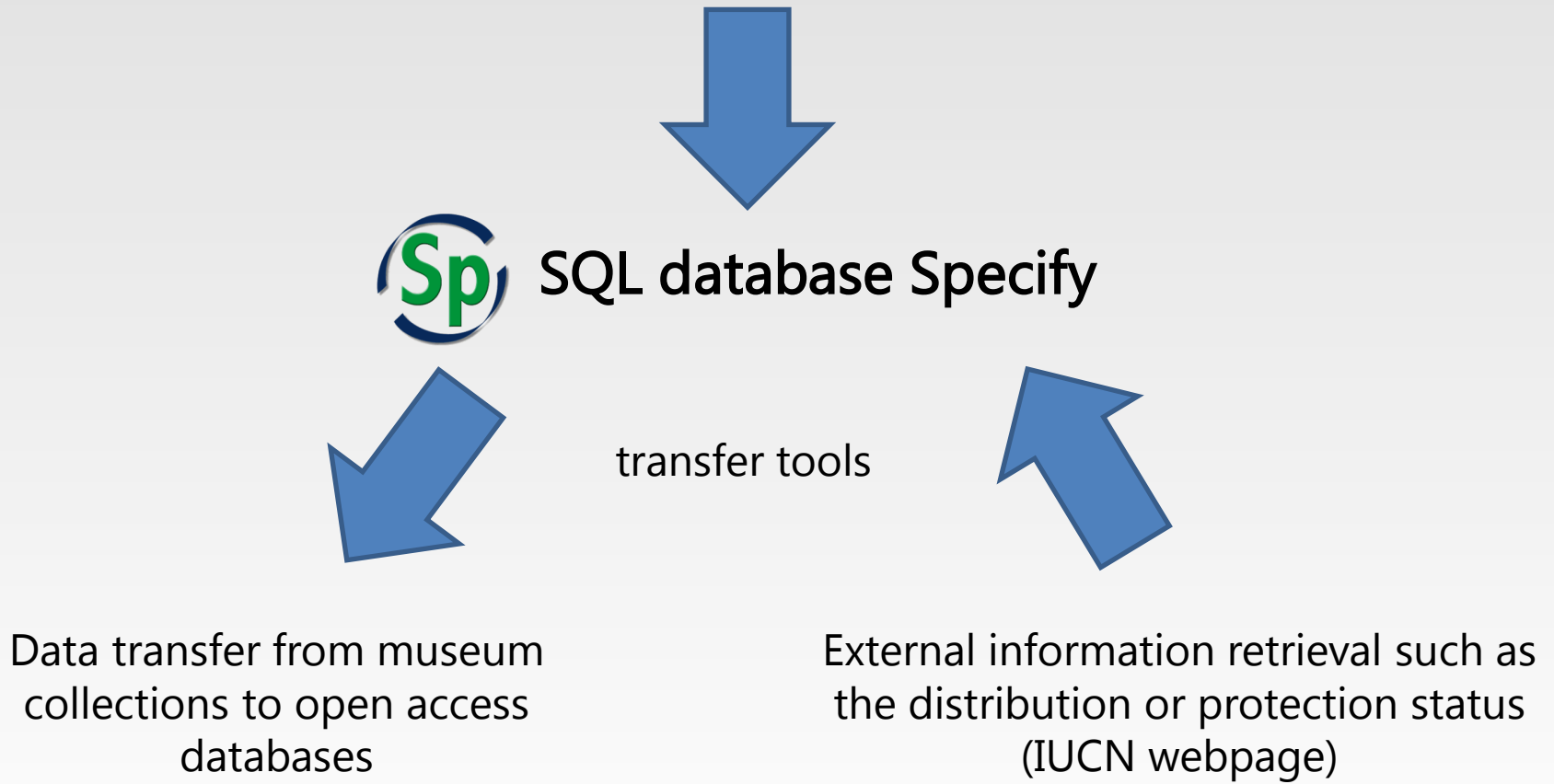
- Importance of museum collections for great spectrum of scientists and public education



Global online biodiversity databases (GBIF or BioCASE) → important open-access research infrastructure

Important research data stored locally in formats such as Excel, Access, CSV, sometimes even Word

The project idea



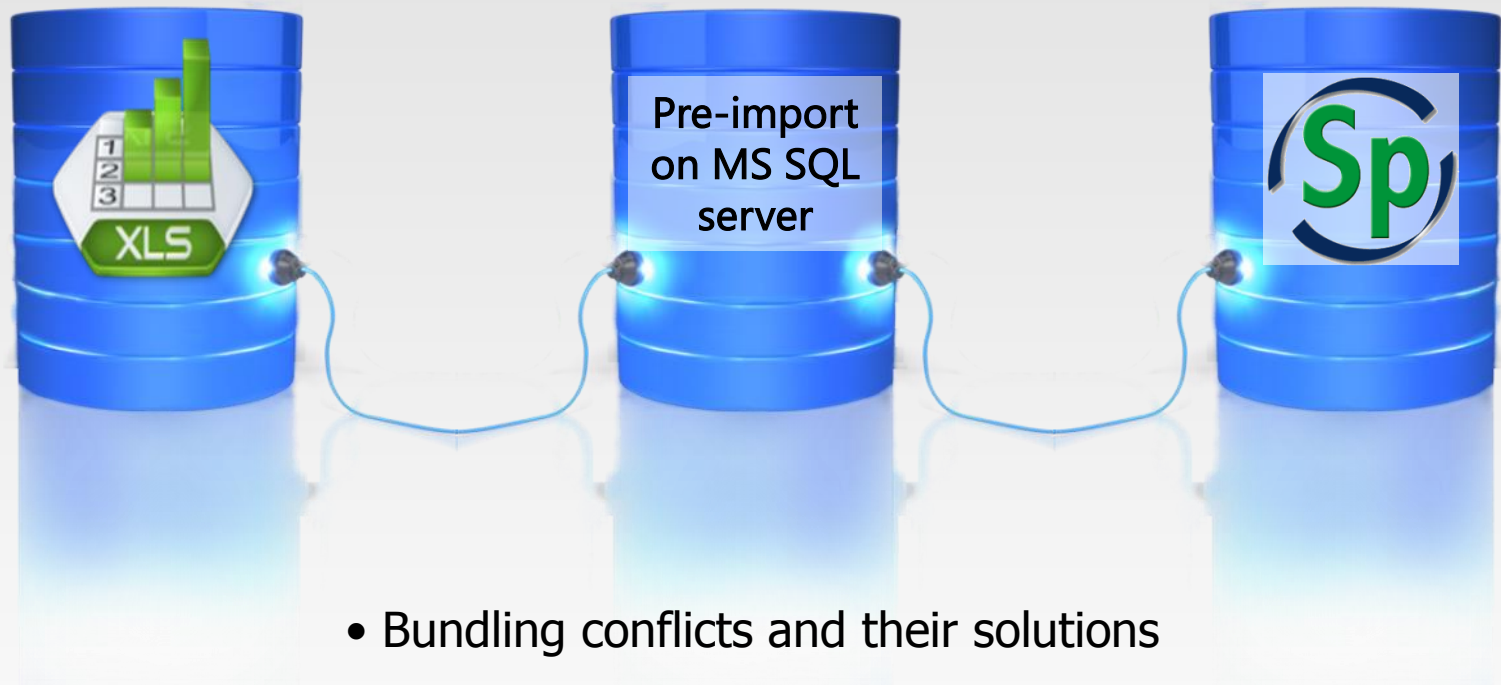
The collection management system Specify



Specify

- Developer: University of Kansas
- Backend - MySQL database
- Frontend - Java application
- Open source licence
- Used in over 400 institutions

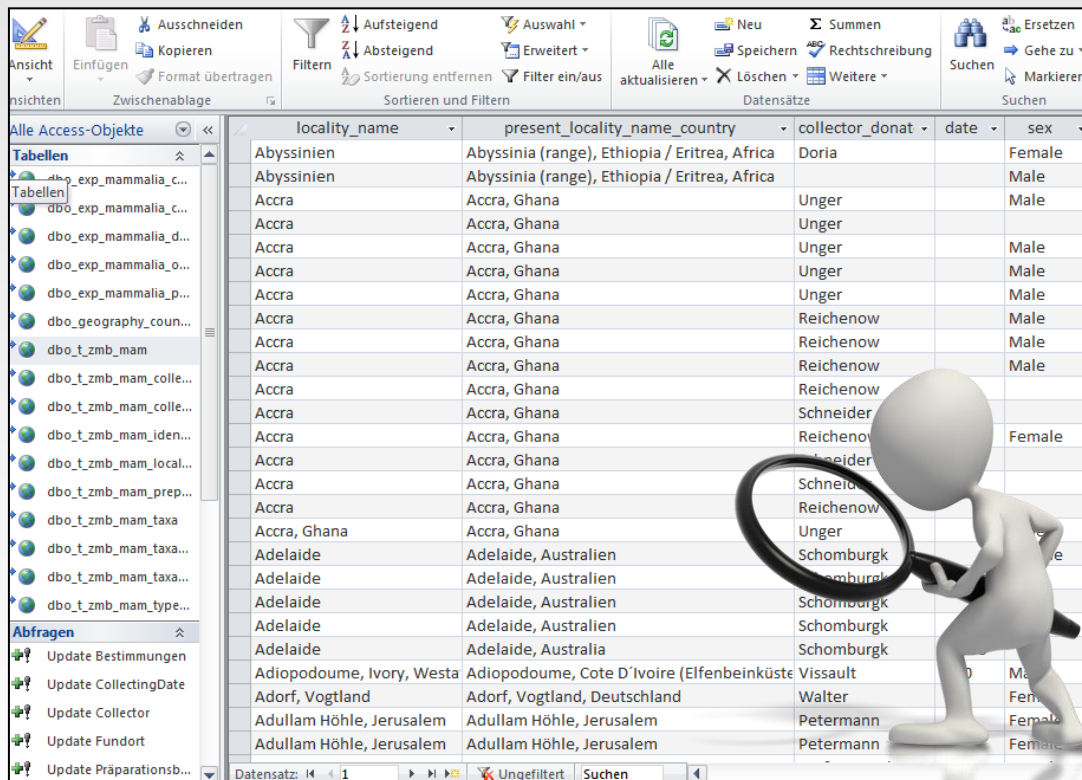
The data transfer challenges



- Bundling conflicts and their solutions
- Standardising data
- Improving data quality

The data transfer challenges

- Standardising data and improving data quality



locality_name	present_locality_name_country	collector_donat	date	sex
Abyssinien	Abyssinia (range), Ethiopia / Eritrea, Africa	Doria		Female
Abyssinien	Abyssinia (range), Ethiopia / Eritrea, Africa			Male
Accra	Accra, Ghana	Unger		Male
Accra	Accra, Ghana	Unger		
Accra	Accra, Ghana	Unger		Male
Accra	Accra, Ghana	Unger		Male
Accra	Accra, Ghana	Unger		Male
Accra	Accra, Ghana	Reichenow		Male
Accra	Accra, Ghana	Reichenow		Male
Accra	Accra, Ghana	Reichenow		Male
Accra	Accra, Ghana	Reichenow		Male
Accra	Accra, Ghana	Schneider		
Accra	Accra, Ghana	Reichenow		Female
Accra	Accra, Ghana	Schneider		
Accra	Accra, Ghana	Schneider		
Accra	Accra, Ghana	Reichenow		
Accra	Accra, Ghana	Unger		
Adelaide	Adelaide, Australien	Schomburgk		
Adelaide	Adelaide, Australien	Schomburgk		
Adelaide	Adelaide, Australien	Schomburgk		
Adelaide	Adelaide, Australien	Schomburgk		
Adelaide	Adelaide, Australien	Schomburgk		
Adiopodoume, Ivory, Westa	Adiopodoume, Cote D'Ivoire (Elfenbeinküste)	Vissault		Male
Adorf, Vogtland	Adorf, Vogtland, Deutschland	Walter		Female
Adullam Höhle, Jerusalem	Adullam Höhle, Jerusalem	Petermann		Female
Adullam Höhle, Jerusalem	Adullam Höhle, Jerusalem	Petermann		Female

78,775 specimen

→ 20,950 localities

→ 11,650 collection dates

→ 3,980 Taxa

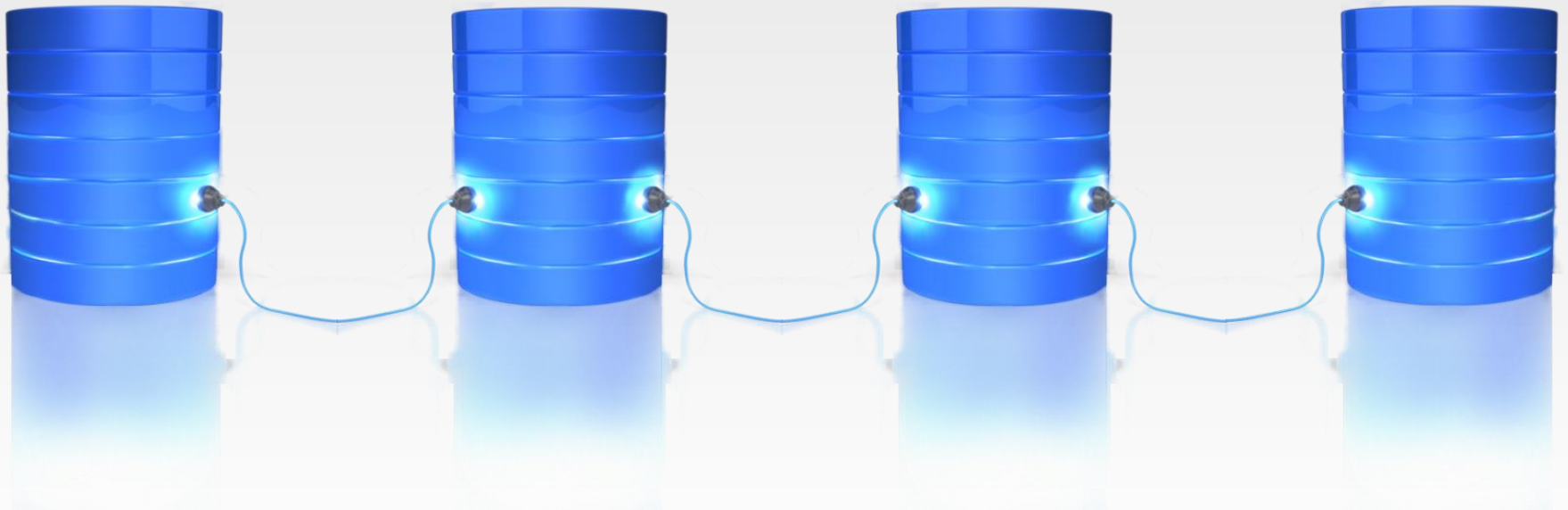
The data transfer challenges

Excel
spreadsheet

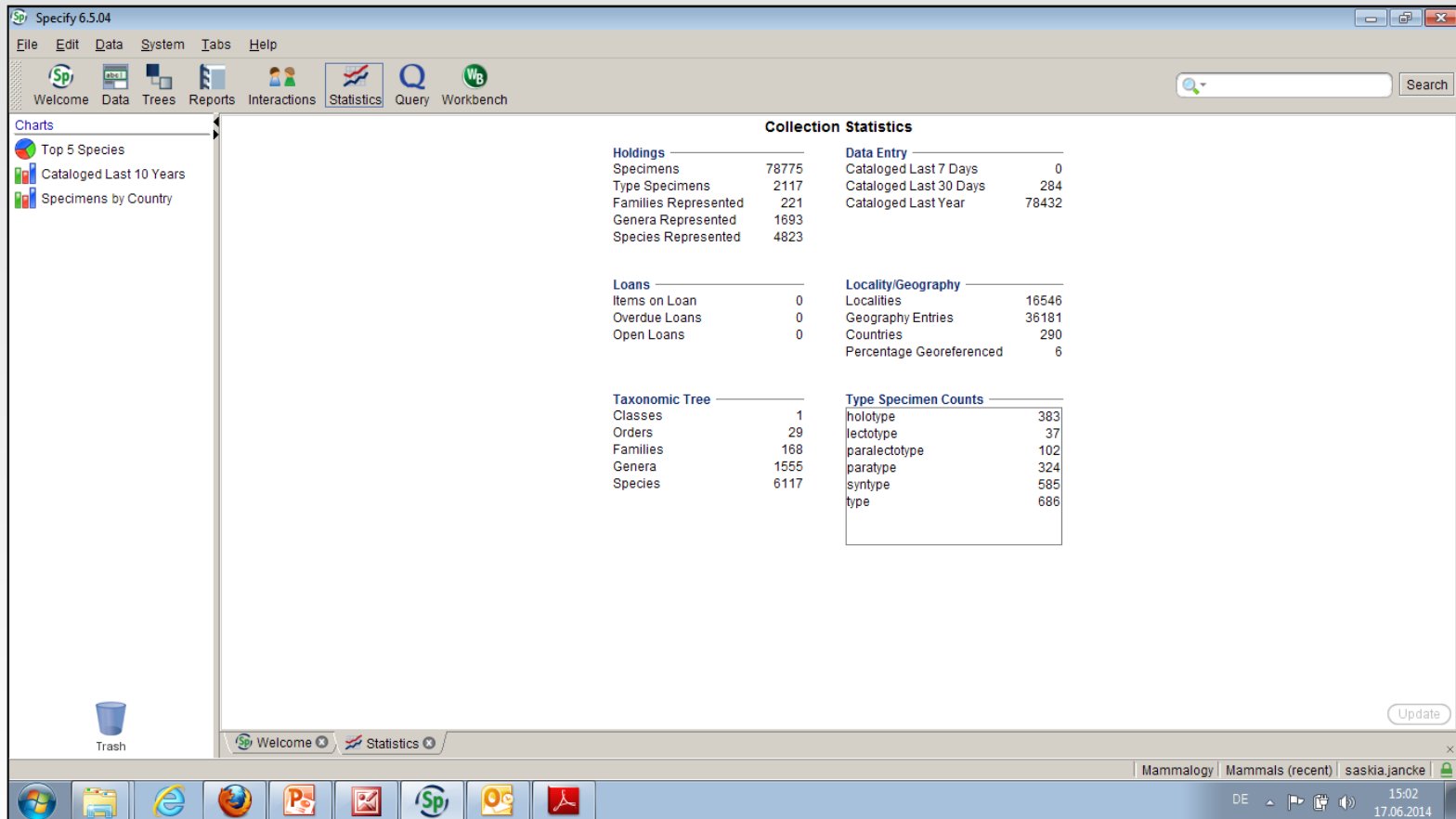
Pre-import
on MS SQL server

Import database
on MySQL server

Specify 6 database
on MySQL server



The new collection management system



New perspectives



Acknowledgement

Thanks to:

Christiane Funk

Nora Lange

Emma Berdan

Falko Glöckler

Dieter Korb

Deutsche Forschungsgesellschaft (DFG)

IUCN

And thank you for your attention.