

# THE HIMALAYAN UPLANDS PLANT DATABASE

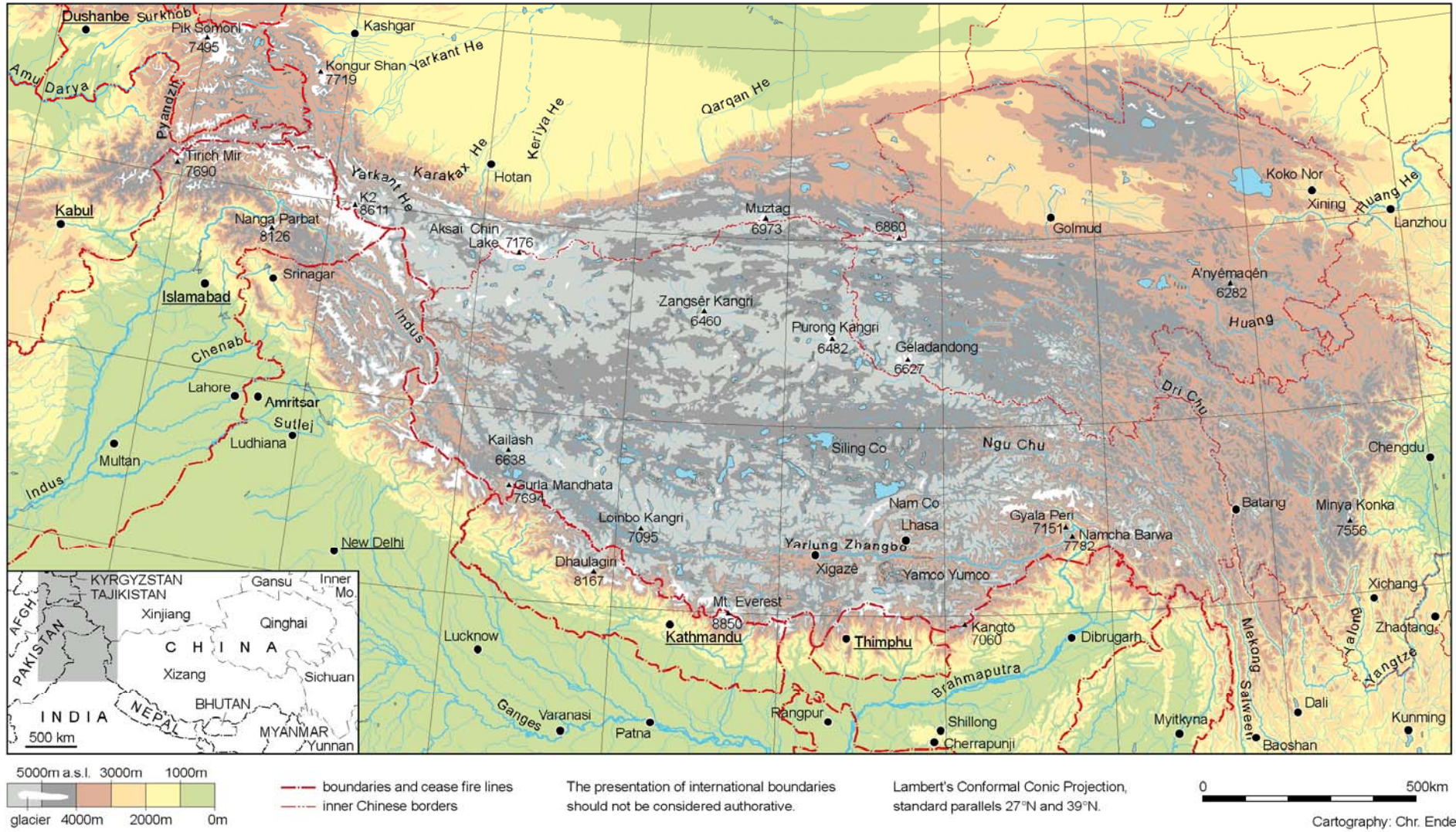
incorporating Flora Karakorumensis, Flora Tibetica

Bernhard Dickoré



The Munich Herbaria: Botanische Staatssammlung (M)  
and Institute of Systematic Botany, LMU University of München (MSB)

# HUP: Area



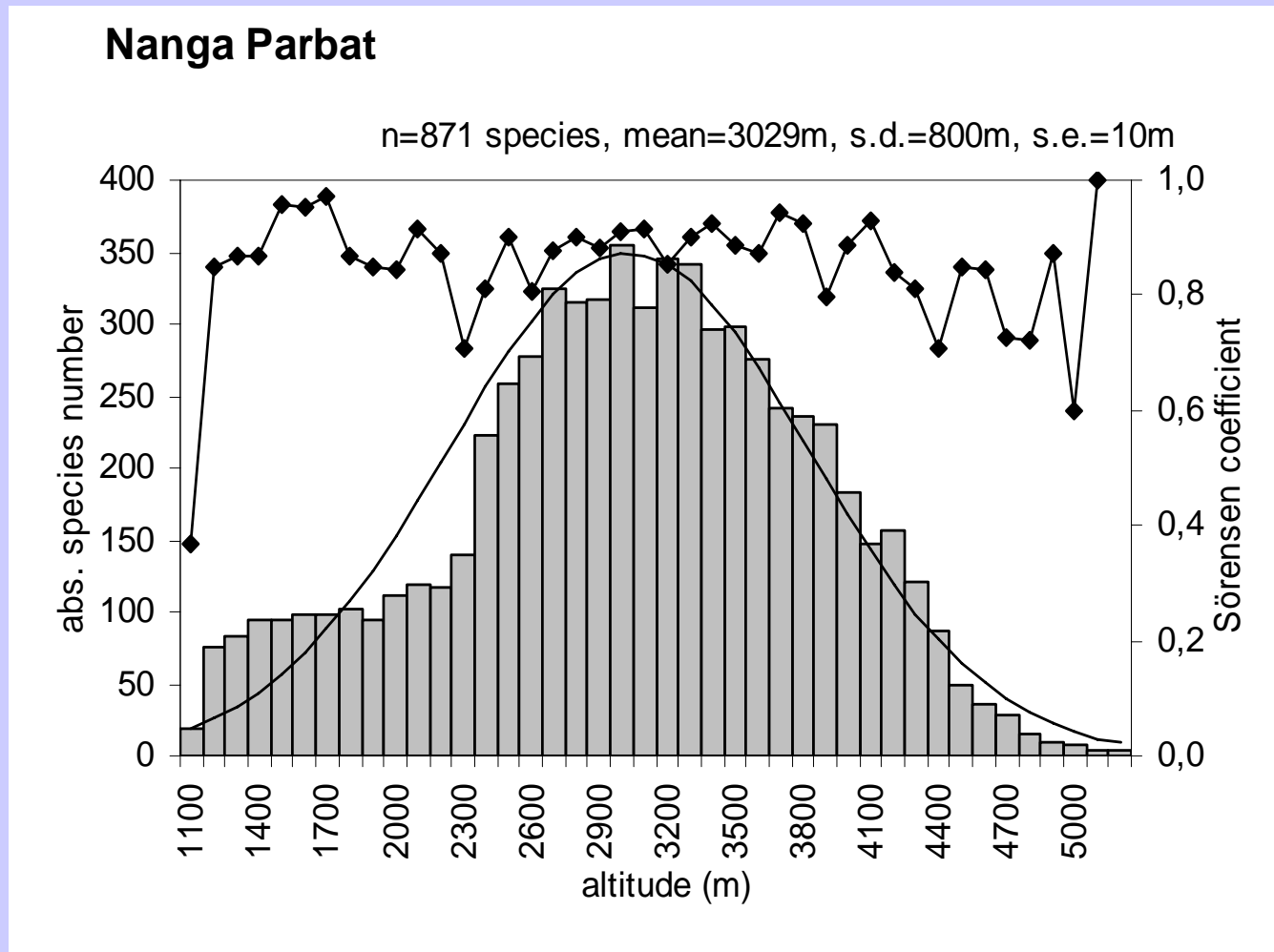


Karakorum, K2 North Glacier 4380 m; K2 (8611 m)



East Himalaya/Kongbo, Tsangpo Valley 3230 m; Namchabarwa (7756 m)

# Vascular Plant Diversity along the World's Longest Altitudinal Gradient



Dickoré & Miehle 2002, in Körner et al., *Mountain Biodiversity*

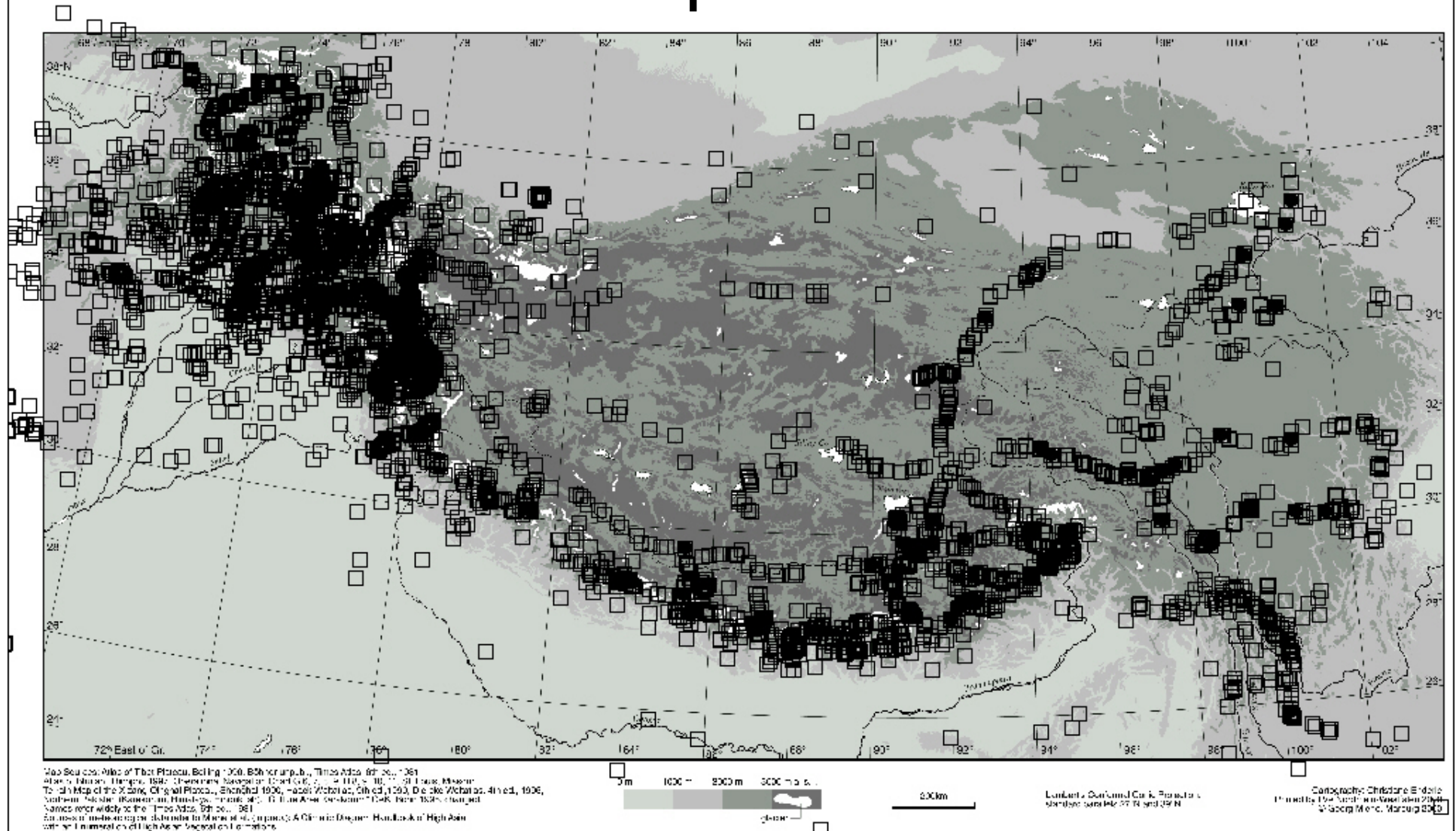


North Karakorum, Yarkand Valley 3560 m, *Krascheninnikovia-Ephedra* desert



Southeast Tibet/Kongbo, Gyala Peri N 3520 m, *Rhododendron faucium* forest

# HUP: Spatial data



Flora Tibetica: 144,618 geo-referenced specimen records (2007-06-21)



# Flora Tibetica: Vascular Plants (2007-06-21)

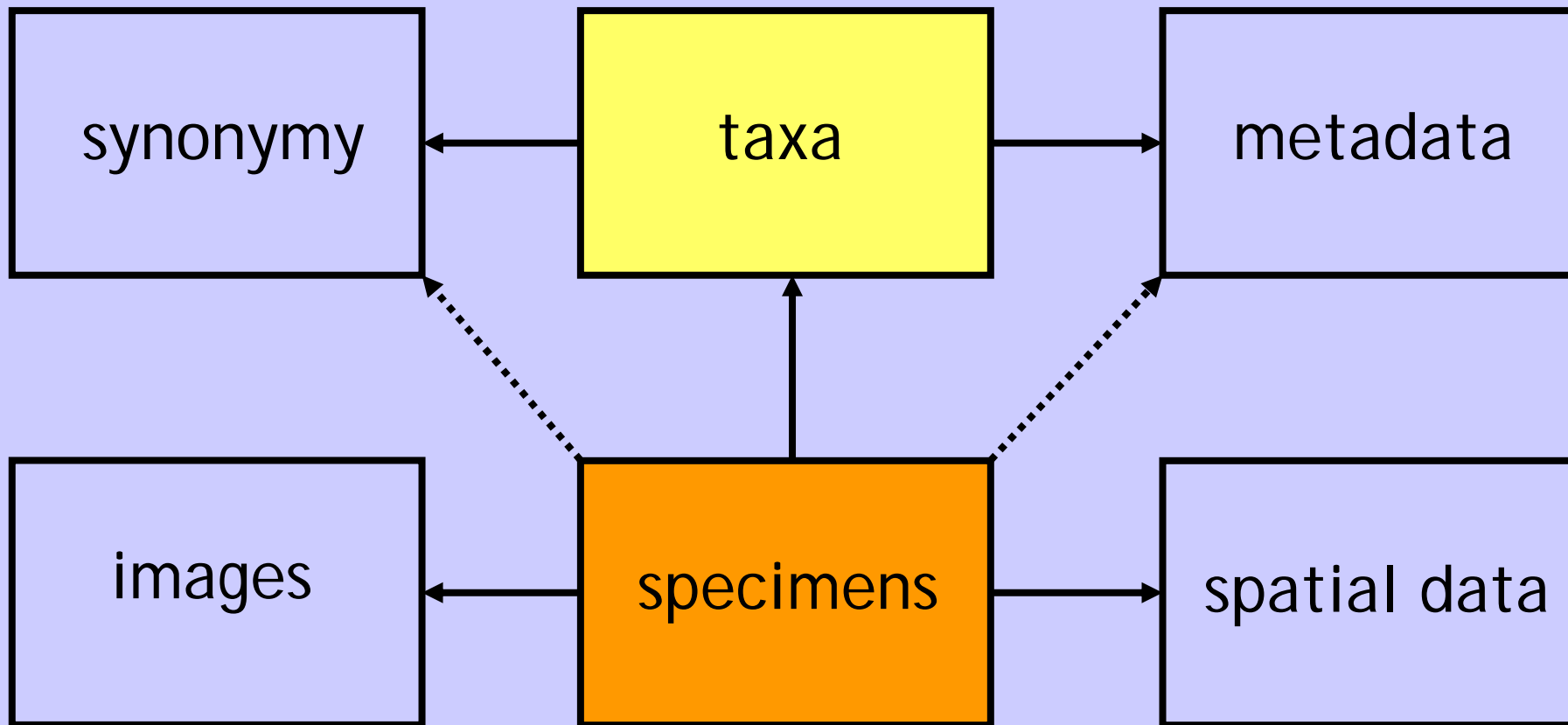
## HUP to GBIF (2009-07-11)

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- 164,990 records, of which are  
144,618 geo-referenced,
- 164,360 140,594 identified to species,  
82,757 seen/verified specimens!
- 5,850 accepted species • 5575
- All taxa with distribution maps!
- ca. 20,000 scanned herbarium images
- references, queries, tools, links, etc.

# HUP: Basic structure

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Microsoft Access - [1-TAXA]

Datei Bearbeiten Ansicht Einfügen Format Datengätze Extras Fenster ?

Frage hier eingeben

4 Dicotyledoneae **BORAGINACEAE** status: **A** stat\_tax: stat\_reg: **A** stat\_map section: 3

**Pseudomertensia parviflora** checked Name: map: + doubt:

remarks: P. sericophylla (summer form) is virtually identical, exclude P. trollii ?, Skardu, TT: wrong loc.?

Taxon	Aut-First	Aut-Second	Ref-Title	Ref-V	Ref-Page	Year	Source	Notes	check
Pseudomertensia parvifl.	(Decne.)	Riedl in Rech. f.	Fl. Iran.	48:	60	1967			
* Pseudomertensia parvifl.									

Datensatz: 1 von 1

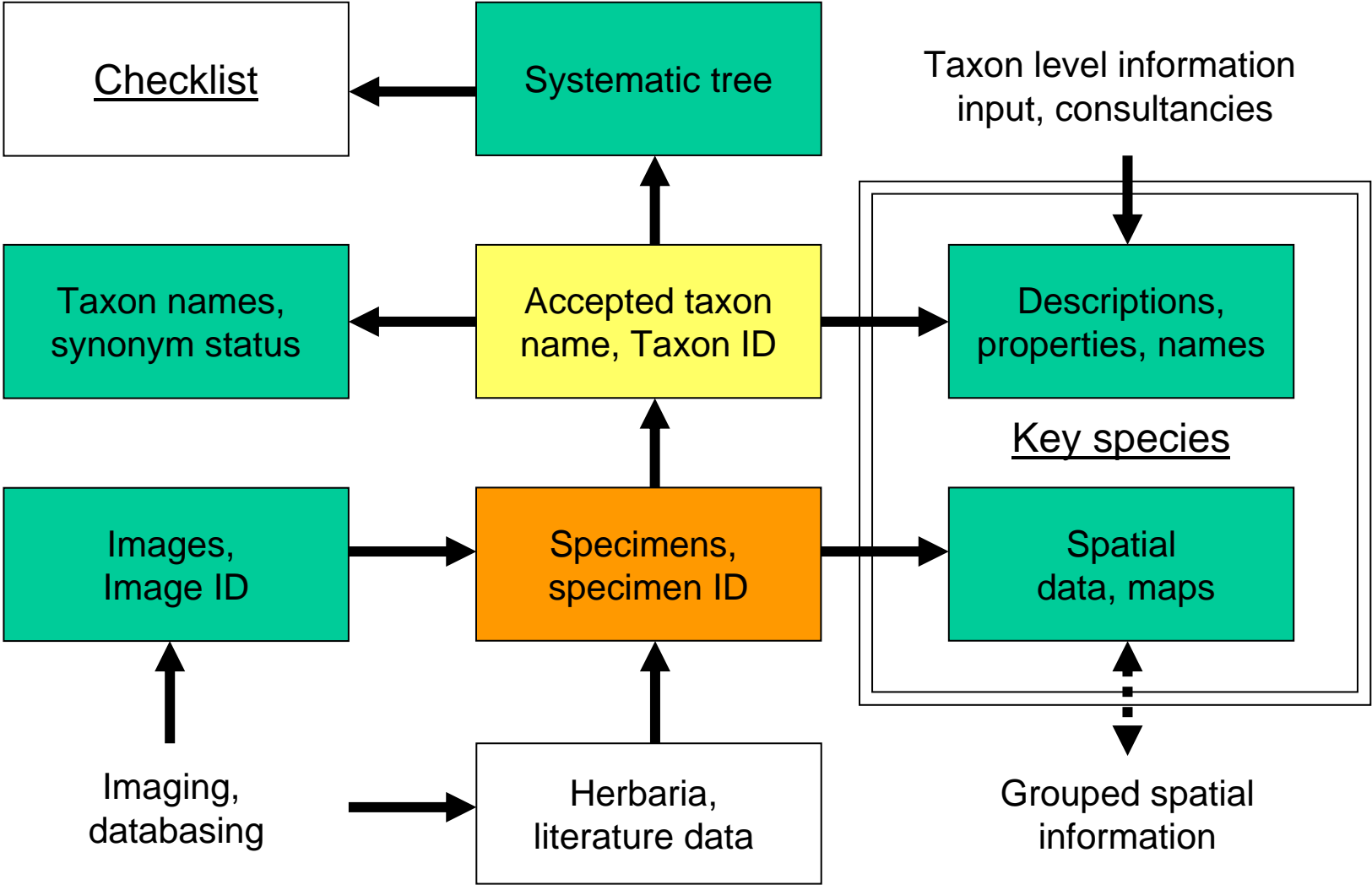
Taxon	Alias/D	Country	REG:	Subreg	LOC:	Nd:	Nm:	Ed:	Em:	CooSc	ECO:	DAT:	Amin:	Amax:	AU:	LEG:	AN:	NUM:	Num <sup>a</sup>	HERB	se:	type:	Source
Pseudc		India	Kashmir		"In summis p								2680		m	Jacquemont				K	!	type (iso	K99!
Pseudc	Pseudc	India	Kashmir		Mahadeo	34	9	74	59	gns													Cat.Pa
Pseudc		India	Kashmir	Kashm	[Banihal P.]	33	27	73	37	gns		1848-05-08				T.Thomson				K	!		K99!
Pseudc	Pseudc	India	Kashmir	Kashm	Banihal	33	25	75	12	gns			9000		ft	B.O.Coventry		1448		K	!		K99!
Pseudc		India	Kashmir	Liddar	Kirimola Vy.	34	12	75	16	enc0		1901-05-23				Inayat		25705		K	!		K99!
Pseudc		India	Kashmir	Pir Par	Gulmarg	34	3	74	23	gns			9000		ft	Timins		110		BM	!		BM96!
Pseudc		India	Kashmir	Pir Par	Gulmarg	34	3	74	23	gns			9000		ft	P.N.Mehra		6		K	!		K99!
Pseudc		India	Kashmir	Pir Par	Gulmarg	34	3	74	23	gns		1877	8600		ft	J.E.T.Aitchisc		74		K	!		K99!
Pseudc	Pseudc	India	Kashmir	Pir Par	Gulmarg nr.	34	3	74	23	gns			7500		ft	B.O.Coventry		1465		K	!		K99!
Pseudc	Pseudc	India	Kashmir	Pir Par	Tangmarg	34	2	74	26	gns													Cat.Pa
Pseudc		India	Unloc.		Himal. Bor. C								5000	7000	ft	T.Thomson				BMI, E	!		BM96!
Pseudc		Pakistan	Chitral	Lowari	Ziarat, Lowa	35	24	71	46	p			8000		ft	Stainton		2337		BMI, E	!		BM96!
Pseudc		Pakistan	Hazara		Titri							1899-06-15				Inayat				K	!		K99!
Pseudc		Pakistan	Hazara	Kagha	Bhurji	34	23	73	21	gns		1899-07-15	11000		ft	Inayat				K	!		K99!
Pseudc		Pakistan	Hazara	Kagha	Kaghan Vy.	34	40	73	30			1920-07-01/				R.R.& I.D.Ste		6017		K	!		K99!
Pseudc		Pakistan	Hazara	Kagha	Kamalban	34	47	73	32	KF		1877-05-31				Inayat		22005		K	!		K99!
Pseudc	Pseudc	Pakistan	Hazara	Kagha	Kamalban Rl	34	47	73	32	KF		1990-06-05	2210		m	U.Schickhoff	90/	1425		-	!		Tibet-c
Pseudc		Pakistan	Hazara	Kagha	Narain	34	54	73	39	gns		1896-05-23	8000		ft	Inayat		19487	a	K	!		K99!
Pseudc		Pakistan	Hazara	Kagha	Narain	34	54	73	39	gns		1896-05-25	11500		ft	Inayat		19487		K	!		K99!
Pseudc		Pakistan	Hazara	Kagha	Naran	34	54	73	39	gns						Altaf Shah		29083		E	!		E00!
Pseudc	Pseudc	Pakistan	Hazara	Kagha	Nuri >	34	38	73	36	KF?		1990-04-16	1950		m	U.Schickhoff	90/	106		-	!		Tibet-c
Pseudc		Pakistan	Hazara	Kagha	Sharhan	34	41	73	26	p		1899-06-14				Inayat				K	!		K99!
Pseudc	Pseudc	Pakistan	Hazara	Kagha	Shogran	34	35	73	29	o	Pinus w	1995-09-12	2550		m	B.Dickoré		13029		Dic	!		Pak9E
Pseudc	Pseudc	Pakistan	Hazara	Kagha	Shogran <	34	35	73	29	p		1990-05-12	2170		m	U.Schickhoff	90/	106	A	-	!		Tibet-c
Pseudc	Pseudc	Pakistan	Hazara	Kagha	Shogran N	34	35	73	29	o	Cedrus	1995-09-15	2250	2300	m	B.Dickoré		13296		Dic	!		Pak9E
Pseudc	Pseudc	Pakistan	Hazara	Murree	Changla Gali	33	59	73	23	gns						Dickason		83					Cat.Pa
Pseudc	Pseudc	Pakistan	Hazara	Murree	Changla Gali	33	59	73	23	gns						S.M.A.Kazmi		746					Cat.Pa
Pseudc	Decale	Pakistan	Hazara	Murree	Nathia Gali	34	4	73	24	gns		1907				H.Deane				K	!	type (hol	K99!

Datensatz: 36 von 34

Datensatz: 1129 von 12260

Formularansicht

# HUP: Workflow





*Leontopodium dedekensii*



*L. sinense*



*L. himalayanicum*



*L. franchetii*



*L. "kongboense"*



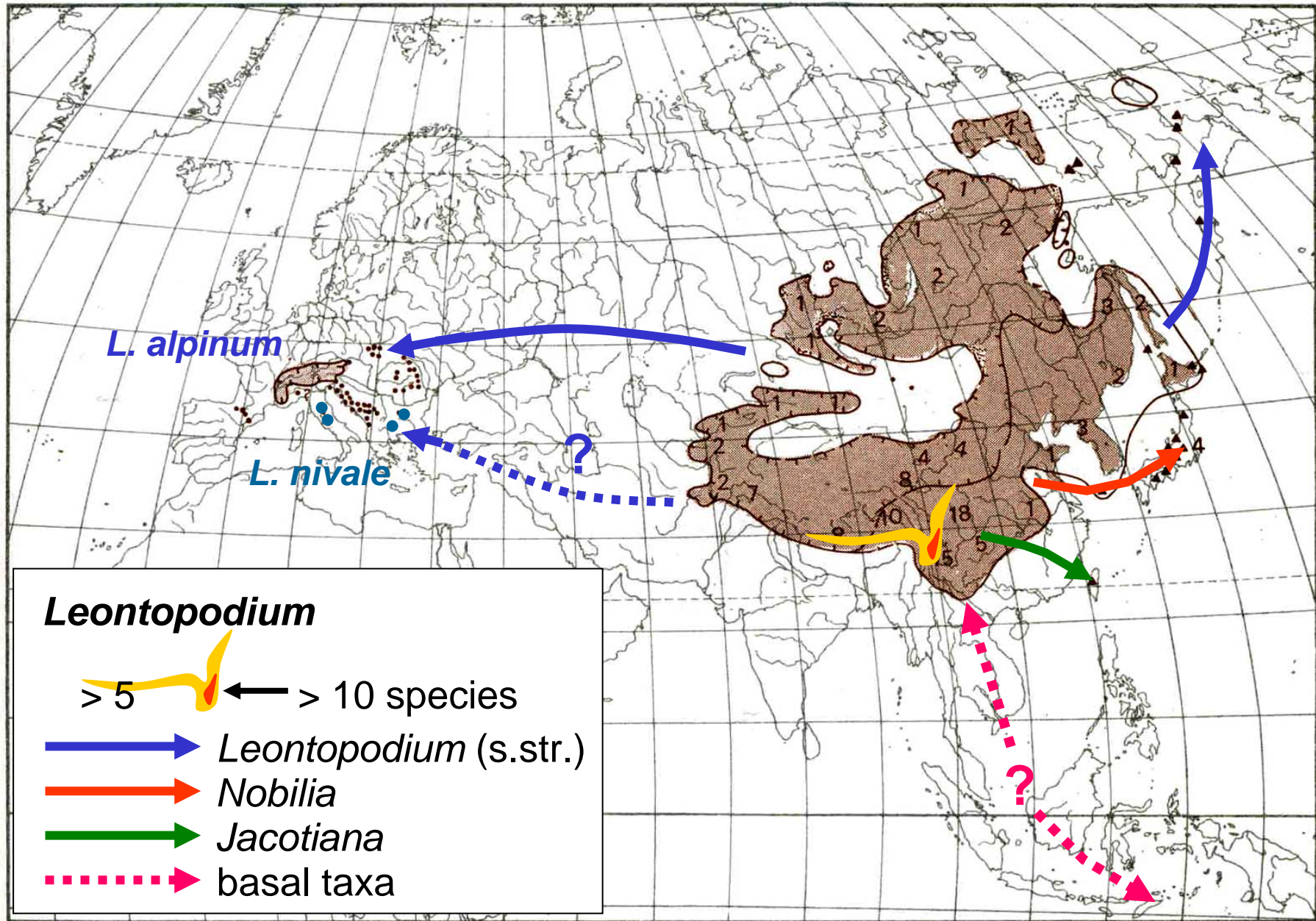
*L. haastioides*



*L. caespitosum*



*L. lingianum*



 . ▲ *Leontopodium* R. BROWN ex CASS. (mit Artenzahlen)  
 . ser. *Leontopodium*

Dickoré (ongoing,  
based on map Meusel & Jäger 1992)



- Acanthaceae\Barleria+cristata\_BD\_13828.jpg
- Acanthaceae\Dicliptera+bupleuroides\_BD\_13401.jpg
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- Acanthaceae\Justicia+adhathoda\_PG\_9938.jpg
- Acanthaceae\Justicia+peploides\_BD\_13814.jpg
- Acanthaceae\Strobilanthes+1\_MW\_94-183-4.jpg
- Acanthaceae\Strobilanthes+2\_MW\_94-224-3.jpg
- Acanthaceae\Strobilanthes+3\_MW\_94-221-1.jpg
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- Aceraceae\Acer+mono\_MW\_94-543-4\_B.jpg
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- Adoxaceae\Adoxa+moschatellina\_GM\_9551-20.jpg
- Adoxaceae\Adoxa+moschatellina\_LK\_89-14-65.jpg
- Adoxaceae\Adoxa+moschatellina\_MW\_94-404-4.jpg
- Adoxaceae\Adoxa+moschatellina\_MW\_94-405-5.jpg

## HUP: Conclusions and Outlook

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- Taxonomic and high-resolution spatial data to the Tibetan and Himalayan Flora
  - reflect biogeography since 50 Ma
  - suggestive of large-scale glaciations and recent radiations
- Large data set fed in GBIF node
- Place HUP database online
- Work to fill data gaps, improve taxonomy, georeferencing and links



# Credits

## Major Contributors to Flora Tibetica Database

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Thank you

