




# Library of Identification Resources


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# Over mij


- Student MSc Ecologie
- Radboud Universiteit, Nijmegen
- 2020: Waarneming.nl & iNaturalist
- Insecten determineren
- Determinatiesleutels





 Naturalis


 Hymenoptera


 Diptera


 Libellen/Juffers


 Microvlinders


 Plantparasieten


 Heukels


 Lieveheersbeestjes


 Naaktslakken


 Paddenstoelen


 Spinnen


 Snuitkevers


 Schietmotten


 Royal Entomological Society


 Vissen


 Hydrophycidae (Trichoptera)


 R<sup>6</sup> Chrysopinae larvae


 Knoppentabel

 Bekermos


 Adelidae


 Photos et clés de détermination des Insectes et Arachn


 Liste des clés de détermination - Galerie et clés de déte


 Neuroptera


Paederus | uk beetles


 Diptera


 Roofvliegen


 Zweefvliegen


 Wolzwevers


 Boor- en prachtvliegen


 Wappervliegen


 Motmuggen


 Langpootmuggen


 Eristalis

 Scathophagidae

 Tachinid Recording Scheme

 Tachinidae

 FSC Diptera

 Langpootmuggen

# Introductie

## Library of Identification Resources

<https://identification-resources.github.io/>

- maart 2021: spreadsheet
- juni 2021: website
- 2022: taxonomische index & zoekmachine
- 2023: GBIF Ebbe Nielsen Challenge (gedeelde 3<sup>de</sup> plek)



[www.gbif.org/news/EQgUzZ4YA75BSeLs1naI9](https://www.gbif.org/news/EQgUzZ4YA75BSeLs1naI9)

# Onderdelen van de "bibliotheek"

## 1. Catalogus

- Opbouw
- Statistieken
- Geografische verdeling

## 2. Taxonomische index

- Zoekmachine

## 3. Inhoud van sleutels (*in progress*)

# 1. Catalogus

Displaying 50 results of 1677 total.

ID	Title	Full-text URL	Archived URL	Entry type	Year/date	Language	Resource type	Taxon	Scope	Region	Completeness	Taxon. level
B1	Identification Key to the European Species of the Bee Genus <i>Nomada</i> Scopoli, 1770 (Hymenoptera: Apidae), Including 23 New Species	✓	⊗	📖	2018-01-22	en	1≡	Nomada		Europe	TRUE	species
B2	An illustrated key to the cuckoo wasps (Hymenoptera, Chrysididae) of the Nordic and Baltic countries, with description of a new species	✓	⊗	📖	2015	en	1≡	Chrysididae		Europe, Northern; Europe, Estonia; Europe, Latvia; Europe, Lithuania	TRUE	species
B3	Informatie op het net over bijen en wespen	✓	⊗	📖		nl-BE	📄	Hymenoptera		Europe, Belgium	FALSE	
B4	Beitrag zur Klärung des Artstatus von <i>Nomada goodeniana</i> (Kirby, 1802) und <i>Nomada succincta</i> Panzer, 1798 (Hymenoptera, Apidae)	✓	⊗	📖	2008	de-DE	1≡	<i>Nomada goodeniana</i> ; <i>Nomada succincta</i>		-	TRUE	species
B5	Schmetterlinge der Alpen	⊗	⊗	📖	2015	de-DE	1≡	Hesperiidae; Papilionidae; Pieridae; Riodinidae; Lycaenidae; Nymphalidae		Europe, Alps	TRUE	species
B6	Review and identification of the cuckoo bees of central Europe (Hymenoptera: Halictidae: Euclyptini)	✓	⊗	📖	2012-05-14	en	1≡	Sphecodes		Europe, Central	TRUE	species

# 1. Catalogus



## An illustrated key to the cuckoo wasps (Hymenoptera, Chrysididae) of the Nordic and Baltic countries, with description of a new species

2015

Resource type	☰ key
For identifying	Chrysididae
Precision	species
For the region	<a href="#">Europe, Northern</a> , <a href="#">Europe, Estonia</a> , <a href="#">Europe, Latvia</a> & <a href="#">Europe, Lithuania</a>
Complete	Yes

### Resources

Resource	Type	Taxa	Scope	Pages
<a href="#">B2:1</a>	☰ key	225 taxa		

### Bibliographical info

Entry type	💻 online
Authors	<a href="#">Juho Paukkunen</a> , <a href="#">Alexander Berg</a> , <a href="#">Villu Soon</a> , <a href="#">Frode Ødegaard</a> & <a href="#">Paolo Rosa</a>
Publisher	<a href="#">Pensoft Publishers</a>
Series	<a href="#">ZooKeys (1313-2970 ↗)</a>
Volume	548

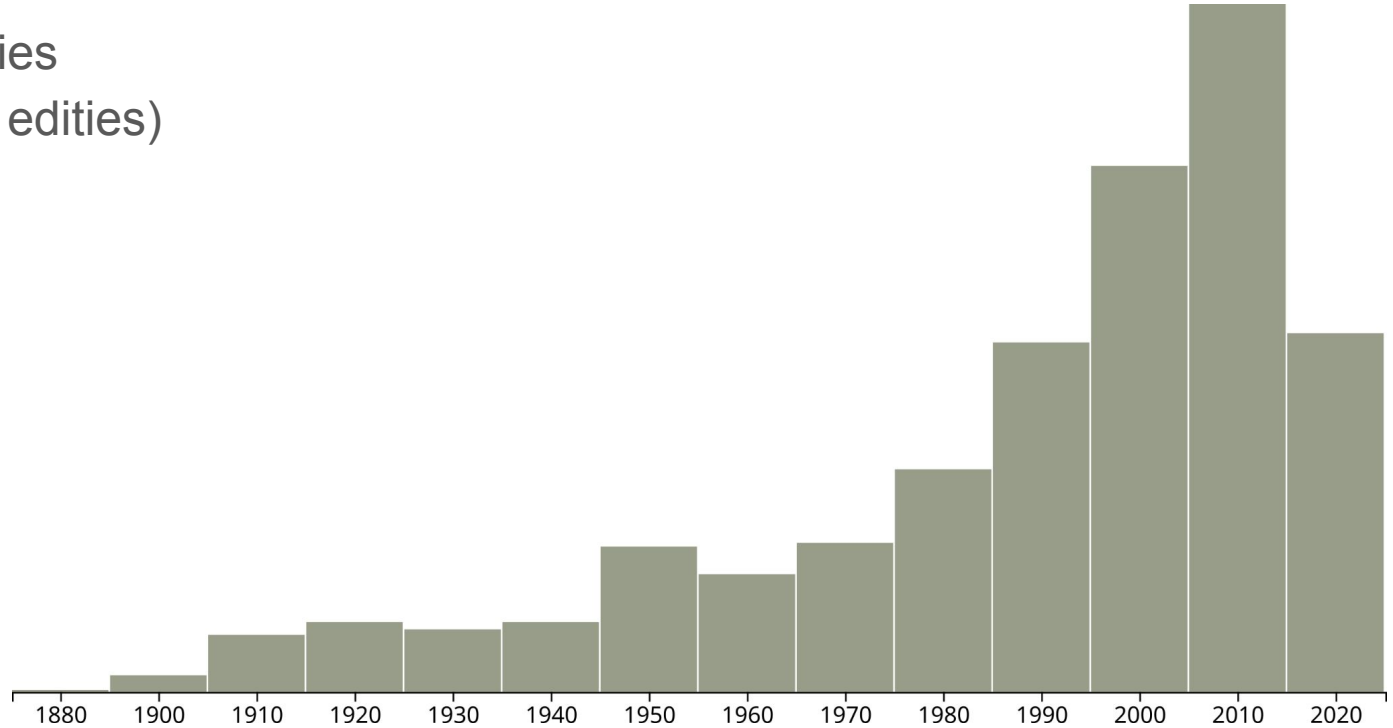
# 1. Catalogus: Opbouw

- Bibliografische data
  - Publicaties, auteurs, en uitgevers gekoppeld aan Wikidata
- Soort bron
  - Bijv. determinatiesleutel, soortbeschrijvingen, soortzoeker
  - Specificiteit (bv. "tot op genus")
- Bruikbaarheid van de bron
  - Taxonomische hoofdgroep (bv. "Heteroptera")
  - Beperking van soorten (bv. "alleen aquatische soorten")
  - Beperking van individuen (bv. "alleen imagines")
  - Compleetheid (wel/niet)
  - Regio van toepassing (bv. "Nederland")



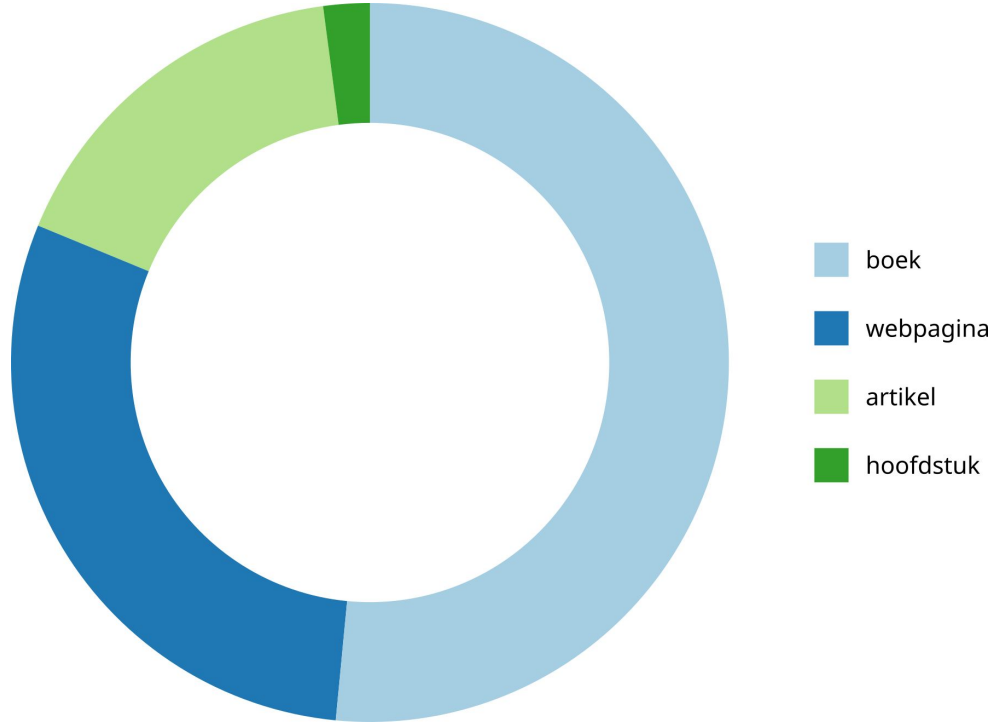
# 1. Catalogus: Statistieken

- 1677 publicaties
- (1449 zonder edities)
- Veelal recent



# 1. Catalogus: Statistieken

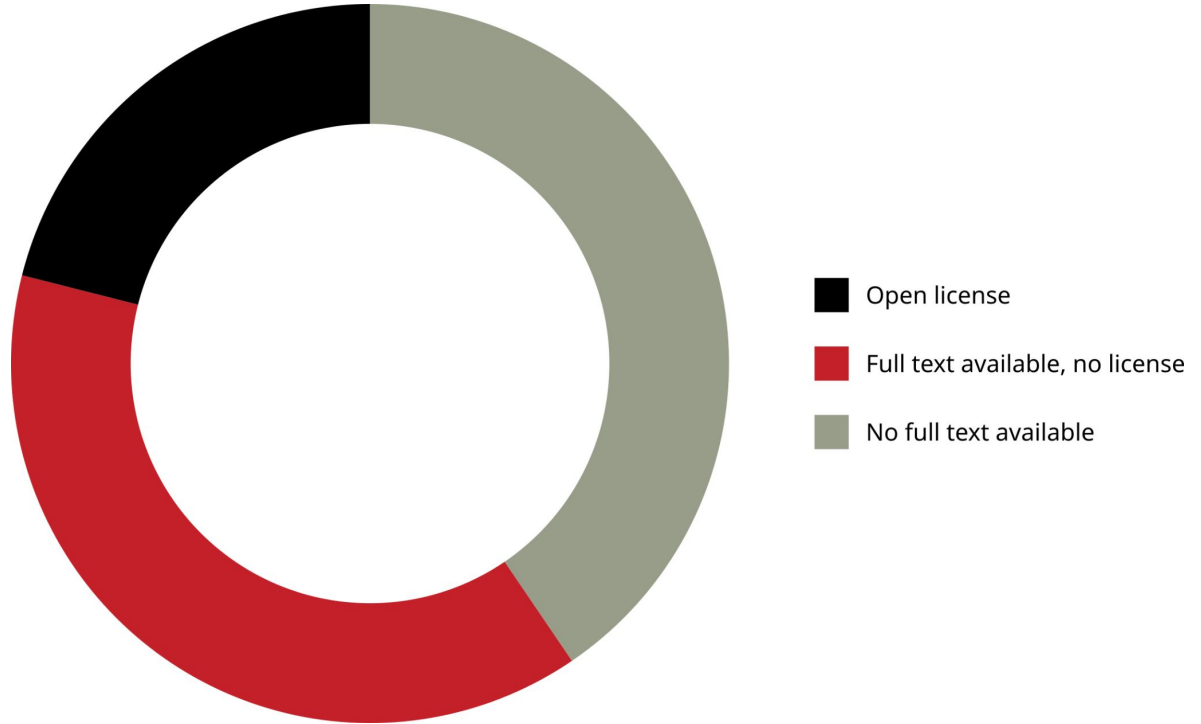
- Voornamelijk boeken
- Veel websites



# 1. Catalogus: Statistieken

## Toegang

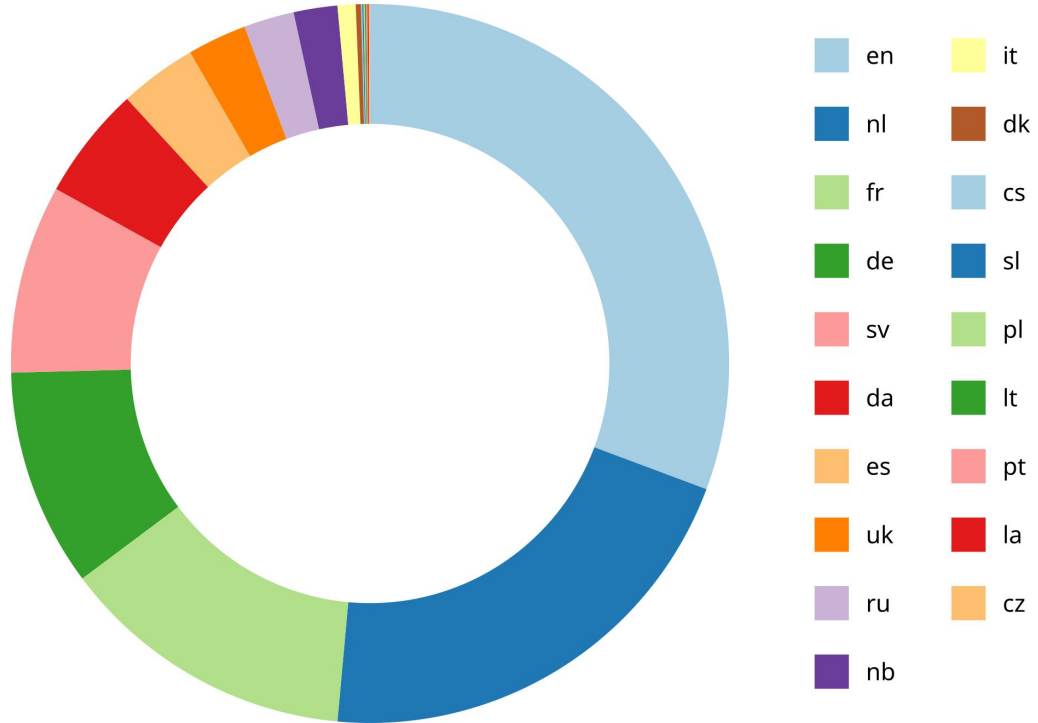
- Online beschikbaar: 998
- Open licentie: 353



# 1. Catalogus: Statistieken

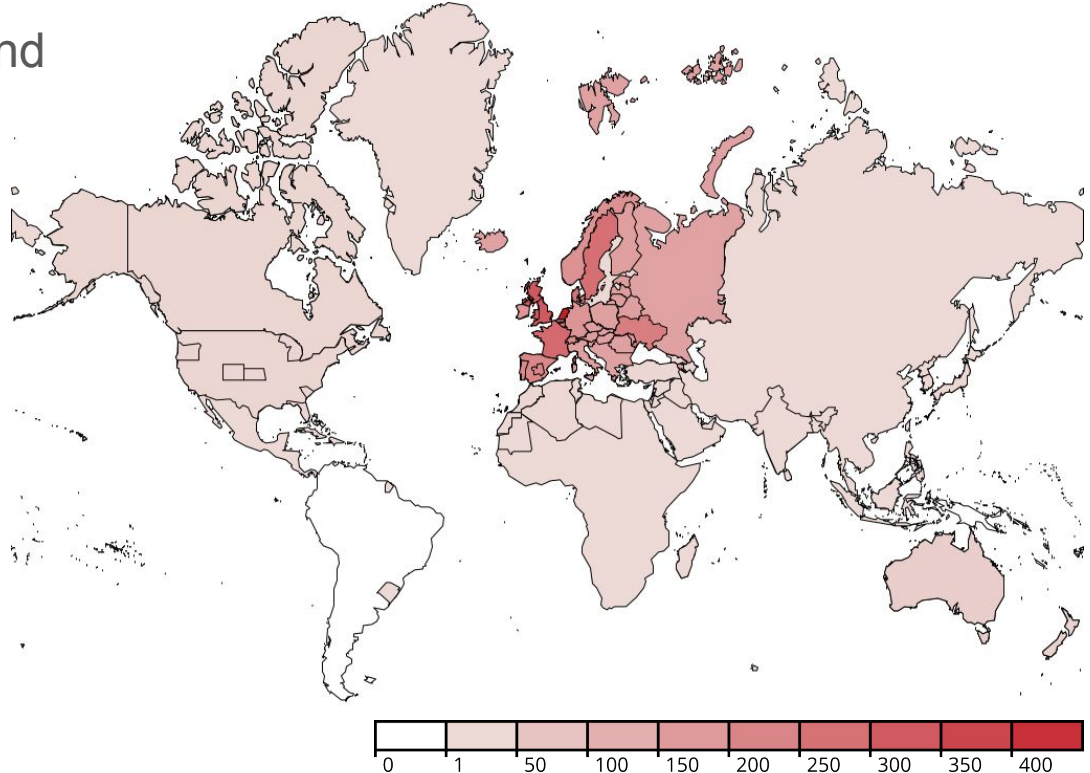
## Verdeling talen

- Engels: 529
- Nederlands: 358



# 1. Catalogus: Geografische verdeling

- Duidelijke focus op Nederland en Europa
- Zuid-Amerika erg onderbelicht



## 2. Taxonomische index

- Compleetheid?
- Orde/familie/genus + regio + jaar → niet genoeg
  - Is een Britse sleutel uit 1952 bruikbaar in Nederland?

Oplossing:

- Lijst van soorten (& genus, enz.)
- Gekoppeld aan GBIF (Backbone Taxonomy)
- Gemaakt voor **546 van de 1677 publicaties** (32,6%)

## 2. Taxonomische index

### Identification resource B2:1

**Part of** [An illustrated key to the cuckoo wasps \(Hymenoptera, Chrysididae\) of the Nordic and Baltic countries, with description of a new species \(B2\)](#)

#### Key info

Resource type	 key
Applies to	
For the region	<a href="#">Europe</a> , <a href="#">Northern, Europe</a> , <a href="#">Estonia</a> , <a href="#">Europe</a> , <a href="#">Latvia</a> & <a href="#">Europe</a> , <a href="#">Lithuania</a>
Number of taxa	225

#### Taxa

[Download as Darwin Core](#)

Cleptinae subfamily [↗](#)

- ▼ *Cleptes* Latreille, 1802 genus [↗](#) [①](#)
  - ▼ *Cleptes nitidulus*-group group [↗](#)
    - ▶ *Cleptes nitidulus* (Fabricius, 1793) species [↗](#) [①](#)
      - Cleptes semicyaneus* Tournier, 1879 species [↗](#) [①](#)
  - ▼ *Cleptes semiauratus*-group group [↗](#)

Chrysidinae subfamily [↗](#)


▼ Elampini tribe [↗](#)

- ▼ *Omalus* Panzer, 1801 genus [↗](#) [①](#)
  - ▶ *Omalus biacinctus* (Du Buysson, 1892) species [↗](#) [①](#)
  - ▶ *Omalus aeneus* (Fabricius, 1787) species [↗](#) [①](#)
  - ▶ *Omalus puncticollis* (Mocsary, 1887) species [↗](#) [①](#)
- ▼ *Pseudomalus* Ashmead, 1902 genus [↗](#) [①](#)
  - ▶ *Pseudomalus pusillus* (Fabricius, 1804) species [↗](#) [①](#)
  - ▶ *Pseudomalus auratus* (Linnaeus, 1758) species [↗](#) [①](#)
  - ▶ *Pseudomalus triangulifer* (Abeille de Perrin, 1877) species [↗](#) [①](#)
  - ▶ *Pseudomalus violaceus* (Scopoli, 1763) species [↗](#) [①](#)
- ▼ *Philoctetes* Abeille de Perrin, 1879 genus [↗](#) [①](#)
  - ▶ *Philoctetes truncatus* (Dahlbom, 1831) species [↗](#) [①](#)
- ▼ *Elampus* Spinola, 1806 genus [↗](#) [①](#)
  - = *Ellampus* Agassiz, 1846 genus [↗](#) [①](#)
  - = *Notozus* Förster, 1853 genus [↗](#) [①](#)
  - ▶ *Elampus constrictus* (Förster, 1853) species [↗](#) [①](#)
  - ▶ *Elampus foveatus* Mocsáry, 1914 species [↗](#) [①](#)
  - ▶ *Elampus panzeri* (Fabricius, 1804) species [↗](#) [①](#)
- ▼ *Holopyga* Dahlbom, 1845 genus [↗](#) [①](#)
  - ▼ *Holopyga fervida*-group group [↗](#)
    - ▶ *Holopyga fervida* (Fabricius, 1781) species [↗](#) [①](#)
    - ▶ *Holopyga metallica* (Dahlbom, 1854) species [↗](#) [①](#)
  - ▼ *Holopyga lucida*-group group [↗](#)
    - = *Holopyga gloriosa*-group species [↗](#)
    - ▶ *Holopyga generosa* (Förster, 1853) species [↗](#) [①](#)
    - ▶ *Holopyga inflammata* (Förster, 1853) species [↗](#) [①](#)

## 2. Taxonomische index: Zoekmachine

- Checklist
  - Van GBIF waarnemingen
  - Van publicatie in de catalogus
- Vergelijking met soortenlijsten uit taxonomische index

### Taxonomic coverage

This resource includes 49 of the expected 59 species, meaning  83%.

Scaled by observations, this covers  94% of observations.

#### ▼ Matching taxa

1. [Hedychrum rutilans Dahlbom, 1854](#)
2. [Chrysis ignita Linnaeus, 1761](#)
3. [Hedychrum nobile \(Scopoli, 1763\)](#)
4. [Chrysis viridula L.](#)
5. [Chrysis indigotea Dufour & Perris, 1840](#)
6. [Hedychridium ardens \(Coquebert, 1801\)](#)
7. [Chrysis fulgida Linnaeus, 1761](#)
8. [Cleptes semiauratus \(Linnaeus, 1761\)](#)
9. [Pseudomalus auratus \(Linnaeus, 1758\)](#)
10. [Pseudospinolia neglecta \(Shuckard, 1837\)](#)

#### ► Missing taxa

Close


























## 2. Taxonomische index: Zoekmachine

- Invoer: orde/familie/genus & coördinaten
- Uitvoer: bruikbare, beschikbare sleutels

Toekomst:

- Talen
- Persoonlijke bibliotheek

B2	 An illustrated key to the cuckoo wasps (Hymenoptera, Chrysididae) of the Nordic and Baltic countries, with description of a new species (2015) 
	 <a href="https://doi.org/10.3897/zookeys.548.6164">https://doi.org/10.3897/zookeys.548.6164</a>
	Language English
B430	 The Chrysidid Wasps of the World (1991)
 	Language English
B593	 Определитель Насекомых Европейской Части СССР. Том III. Перепончатокрылые. Первая часть (1978) 
	 <a href="https://www.zin.ru/publications/fauna_keys/Keys_119_Medvedev_1978.pdf">https://www.zin.ru/publications/fauna_keys/Keys_119_Medvedev_1978.pdf</a>
	Language Russian
B209	 Cuckoo-Wasps. Hymenoptera, Chrysididae (1984) 
	 <a href="https://www.royensoc.co.uk/wp-content/uploads/2021/12/Vol06_Part05.pdf">https://www.royensoc.co.uk/wp-content/uploads/2021/12/Vol06_Part05.pdf</a>
	Language English
B433	 Die Goldwespen Nordafrikas (Hymenoptera, Chrysididae) (1999) 
 	 <a href="https://www.zobodat.at/pdf/ENTS_S10_0001-0281.pdf">https://www.zobodat.at/pdf/ENTS_S10_0001-0281.pdf</a>
	Language German
B454	 Opmerkingen over enige Chrysididae (4) (1960)
	 <a href="https://www.biodiversitylibrary.org/item/264924#page/223/mode/1up">https://www.biodiversitylibrary.org/item/264924#page/223/mode/1up</a>
	Language Dutch

### 3. Inhoud van sleutels

- Toegankelijkheid
  - Gebonden aan licenties ("maar" 353 met open licentie)
- Archivering
  - Bijbehorende media & interactieve functionaliteit
  - Geen standaard data-formaat

### 3. Inhoud van sleutels

Voordelen:

- Ontwikkelen applicaties
- Archiveren sleutels
- Taxonomie indexeren

Doelgroepen:

- Wetenschappelijke uitgevers (Pensoft, enz.)
- Musea & landelijke natuurorganisaties (Naturalis, NBIC, SLU Artdatabanken)
- Natuurverenigingen (Vlinderstichting)

### 3. Inhoud van sleutels

Opties:

- Structured Descriptive Data
  - Biodiversity Information Standards (TDWG)
- Clavis
- + allerlei formaten voor specifieke programma's

→ TDWG working group & nieuwe TDWG standaard?

Hagedorn, G., Thiele, K., Morris, R., & Heidorn, P. B. (2005). The Structured Descriptive Data (SDD) w3c-xml-schema (version 1.0). <http://rs.tdwg.org/UBIF/2005/rddl.html>

Koch, W., Elven, H., & Finstad, A. G. (2022). Clavis: An open and versatile identification key format. *PLoS ONE*, 17(12), e0277752. <https://doi.org/10.1371/journal.pone.0277752>

# Volgende stappen

- Zoekmachine verbeteren
- Meer sleutels!
  - Automatisch indexeren van tijdschriften
  - Bijdragen makkelijker maken

<https://identification-resources.github.io/>

<https://github.com/identification-resources/>

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<https://forms.gle/7mGXCCK4GNSaV8Nv9>