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A list of sound producing European grasshoppers and the availability of their sounds in Xeno-canto

Baudewijn Odé[1] | Marius Faiß[2] | Burooj Ghani[3] | Axel Hochkirch[4] | Robert Planqué[5] | Willem-Pier Vellinga[5] | Vincent J Kalkman[3]

[1]FLORON Plant Conservation Netherlands, Toernooiveld 1, 6525 ED Nijmegen, Netherlands

[2]Max Planck Institute of Animal Behavior, Bücklestraße 5, 78467 Konstanz, Germany

[3]Naturalis Biodiversity Center, Darwinweg 2, 2300 RA Leiden, Netherlands

[4]Musée national d'histoire naturelle, 25, rue Muenster, 2160 Luxembourg, Luxembourg

[5]Stichting Xeno-canto voor Natuurgeluiden, Laan van Nieuw Oost-Indië 177, 2593 BN The Hague, Netherlands

correspondence: Baudewijn Odé; e-mail: baudewijnode@gmail.com
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Abstract

A checklist of European Orthoptera is presented with indication of their sound production and the current availability of sound recordings on Xeno-canto. 926 out of 1232 Orthoptera species, or 75%, that have been reliably recorded in Europe produce sound. However, for just 802 (65%) of those species the sounds produced are meaningful for inventories and field identification. Sound recordings for 556 out of these 802 species (69%) are available now on Xeno-canto. The recordings are not spread evenly across Europe. Recordings are available for 190 of the 256 (74%) species occurring in the Iberian Peninsula; for 194 of the 230 species of Italy & Malta (84%); for 302 of the 374 of the species occurring in Balkan peninsula & Cyprus (81%); for 192 of the 218 of the species occurring in the North and Central Europe (88%) and for 168 of the 252 of the species occurring in the Eastern Europe (67%). The relatively high coverage of North and Central Europe is due to a combination of a relatively low number of species and a high density of sound recordists.

Keywords: bioacoustics, citizen science, open data, sound recordings

Zusammenfassung

Es wird eine Checkliste der europäischen Heuschrecken (Orthoptera)vorgestellt, mit Angaben zu deren Lauterzeugung und der aktuellen Verfügbarkeit von Tonaufnahmen ihrer Gesänge auf Xeno-canto. Von den 1232 zuverlässig in Europa nachgewiesenen Orthopterenarten erzeugen 926, also 75 %, Laute. Bei nur 802 dieser Arten (65 %) sind die Laute für Bestandsaufnahmen und die Bestimmung im Feld relevant. Für 556 dieser 802 Arten (69 %) sind derzeit Tonaufnahmen auf Xeno-canto verfügbar, doch sie sind nicht gleichmäßig über Europa verteilt. So sind Aufnahmen für 190 der 256 (74 %) Arten auf der Iberischen Halbinsel verfügbar, für 194 der 230 Arten in Italien und Malta (84 %), für 302 der 374 Arten auf der Balkanhalbinsel und Zypern (81 %), für 192 der 218 Arten in Nord- und Mitteleuropa (88 %) und für 168 der 252 Arten in Osteuropa (67 %). Die relativ hohe Abdeckung in Nord- und Mitteleuropa ist auf eine Kombination aus einer relativ geringen Artenzahl und einer hohen Dichte an Personen, die Tonaufnahmen erstellen, zurückzuführen.

Schlüsselwörter: Bioakustik, Bürgerwissenschaften, Gesangsaufnahmen, offene Daten

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Introduction

There are few animal groups in which sound plays such an important role in their communication, ecology, identification and our general appreciation of them than Orthoptera. It is therefore no surprise that sound production by grasshoppers has received attention of researchers for a long time and morphological adaptations used for sound production or reception have always played an important part in the taxonomy of grasshoppers (Faber 1928, Faber 1953, Jacobs 1953, Willemse et al. 2009). In recent decades, publications on the identification of grasshoppers often contained verbal descriptions of vocalizations, sometimes accompanied by oscillograms (for instance Duijm & Kruseman 1983). However, for readers it is difficult to really understand what is meant when a sound is described in words. The first commercially available and larger collections of grasshopper sounds of European species were published by Grein (1984) and Bellmann (1985). The latter is the best known and consisted of a cassette with recordings of 56 species occurring in Germany. This was a valuable resource for people working on the Orthoptera fauna of Central Europe, even though the cassette contained some distorted sounds due to limitations of the recording techniques available at the time. An updated version with 59 species appeared in 1993 (Bellmann 1993) on Compact Disc (CD). The first extensive overview of sound recordings and sound descriptions of Orthoptera occurring in Western and Central Europe was published by David Ragge and Jim Reynolds (Ragge & Reynolds 1998a, 1998b). This publication was accompanied with compact discs with good sound recordings, allowing field workers to identify most of the northwestern European species by their sound. Several other publications of European grasshopper sound on CD or DVD followed in the following years including Bonnet (1995), Kleukers et al. (1997), Odé & Fontana (2002), Roesti & Keist (2009), Massa et al. (2012) and Sardet et al. (2015).

These publications, in combination with cheaper and better recording techniques becoming available, led to an increased use of sounds for species recognition. However, since the start of this century the number of commercially available publications of sound collections of European grasshoppers has declined, probably because of the CD and DVD losing popularity. This is why Willemse et al. (2018) published the sound recordings accompanying their field guide in an online repository. Alternative access to sound recordings is provided by the Orthoptera App (Rutschmann & Roesti (2024), also available through Orthoptera.ch) which contains recordings of all species occurring in Germany, Austria and Switzerland. Nowadays many recordings are available through online biodiversity portals, for instance through Observation.org or iNaturalist. Lower numbers of recordings but from a wide variety of species are available on the website Orthoptera Species File (OSF). Another source of sound recordings is bio.acousti.ca were about 600 recordings (50 hours) of about 140 species can be found. Recently two large datasets were published based on data from public sources with the main goal of facilitating the construction of sound recognition models of grasshoppers (Faiß et al. 2025, Funosas et al. 2025).

In September 2022, Xeno-canto (xeno-canto.org) opened up for the upload of sound recordings of grasshoppers. Xeno-canto is a web platform that since 2005 has offered (citizen) scientists and other enthusiasts the possibility to share wildlife recordings. It uses open-source code and Creative Commons licensing on recordings to facilitate sharing and reuse. Recordings and metadata are also shared through GBIF (Vellinga 2024). Until 2022, Xeno-canto focused on birds. It is currently the largest online open access repository for bird sounds containing over 900.000 recordings representing 96 percent of the species worldwide. To allow for the upload of grasshopper sounds the website was modified to also accommodate ultrasonic recordings. The taxonomic backbone was extended using the world checklist of Orthoptera Species File (OSF) (Cigliano et al. 2024). In order to speed up the upload of grasshopper recordings a series of bulk uploads were done in 2023 and 2024. Orthopterists with large sound collections were contacted and asked if they were willing to share their recordings with the wider orthopterist community. With a grant by NLBIF it was possible to assist them with the restructuring of metadata (information on locality and date) and help with bulk uploading of their recordings. As a result, over 32.000 recordings of nearly a thousand species became available online in a relatively short time. This includes valuable sound collections brought together during many years, or, in some cases, decades, of fieldwork by experts like Julien Barataud, Dragan Chobanov, Paolo Fontana, Klaus-Gerhard Heller, Sigfrid Ingrisch and Baudewijn Odé. The growth of the available recordings on Xeno-canto also stimulated others to start uploading their records and presently there is a steady flow of new recordings of grasshoppers being submitted.

At present over 32.000 recordings of grasshoppers are available on Xeno-canto, most of which are from Europe. For each recording an oscillogram, a spectrogram

and metadata including location and date is available (Fig. 1). In this paper we present an overview of the availability of sound recordings of European species on Xeno-canto. We hope that by providing this overview field workers will be stimulated to collect and share recordings, to document geographic variation and add species whose sounds are still not available or even completely unknown.

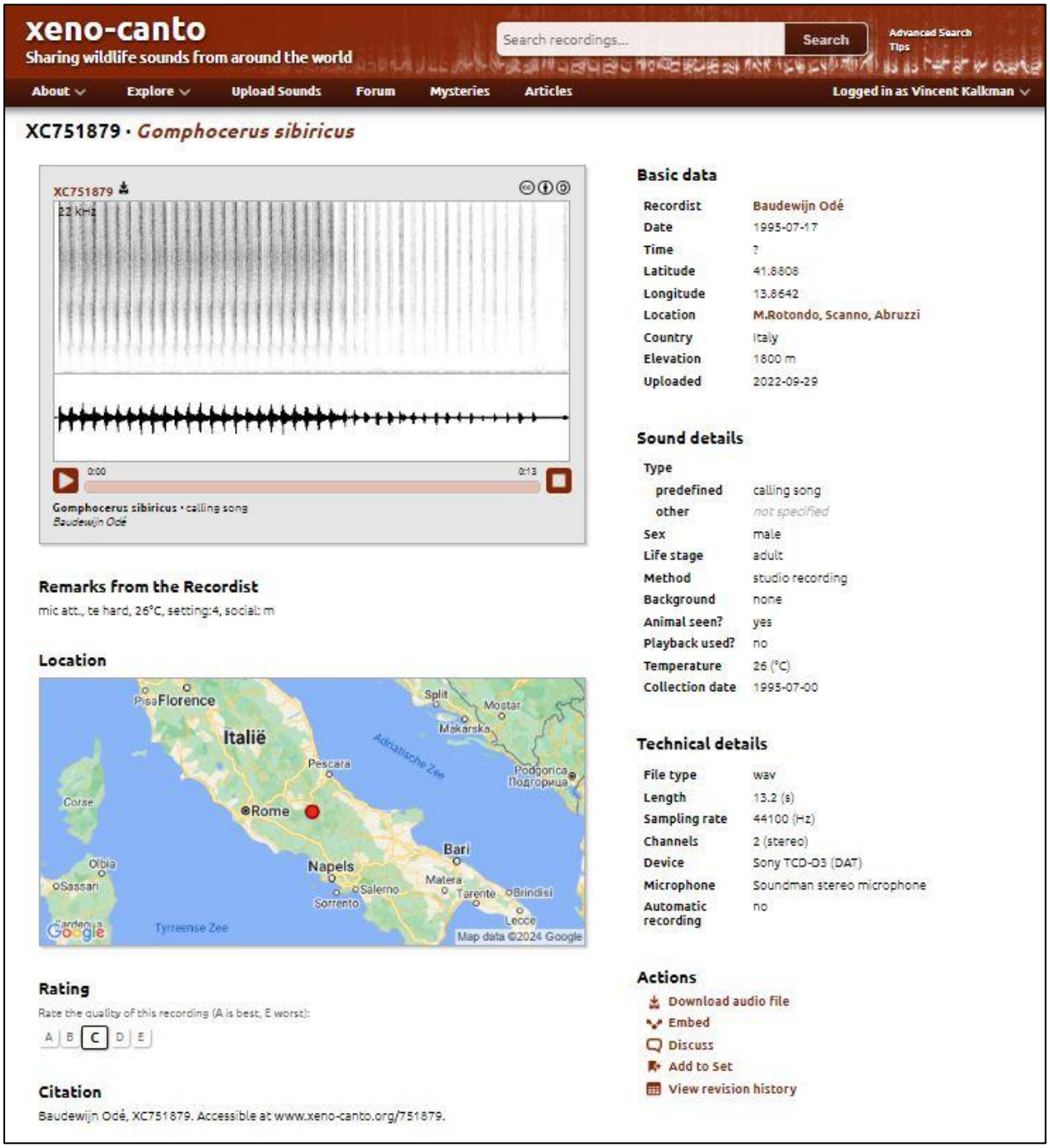

Fig. 1: Xeno-canto allows users to search sound recordings based on taxonomy or on location. For each recording an oscillogram, a spectrogram and metadata on the date and location are presented.

Material and Methods

The checklist included is based on Ivković et al. (2024) with some name changes and additions of newly described species to align with the taxonomy of the latest version of Orthoptera species file (Cigliano et al. 2024). The list includes all species found in Europe up to 2024. For the author and year of publication of the species we refer to Ivković et al. (2024).

Largely based on the expert knowledge of the first author, and with further input from AH, all species were divided in three groups: species with no known sound production, species which rarely make sound or in which the sounds are very weak (so not meaningful for field identification) and species producing sounds which can be used for species identification in the field. Furthermore, for all species the presence in five regions was indicated based on the regions used in Ivković et al. (2024): Iberia & Canaries (including Canary Islands, Madeira and the Azores); Italy & Malta; Balkan & Cyprus (with the northern parts of Serbia and Croatia included in N & C Europe); North and Central Europe; Eastern Europe (Belarus, Ukraine, Romania, Moldova, Russia and Georgia).

For each species and each country, the availability of recordings on Xeno-canto was summarized as the number of recordings available and the total duration of these recordings.

Results

Table 1 contains a checklist of the 1,232 European species indicating their distribution, their sound production and the availability of sound recordings on Xeno-canto. On 15th of March 2025 Xeno-canto contained 32,429 recordings of grasshoppers (over 860 hours) representing 981 species (3.3 % of the globally described species). Of these, 27,500 (84.9 %) belong to European species. Of the 1,232 species known to occur in Europe 262 (21.3 %) do not produce sound and 123 (10.0 %) only rarely make sound or only make very weak sounds. For 44 species it is unclear if they make sounds. The remainder (802 species, 65.2 %) produce sounds (sometimes ultrasonic) that are meaningful for species identification in the field. For 556 of these 802 species recordings are available on Xeno-canto. For 26 of the 246 European species for which no recordings are available on Xeno-canto one or more recordings can be found on orthoptera.speciesfile.org (OSF). For some widespread and common species such as *Tettigonia viridissima*, *Leptophyes punctatissima* and *Pholidoptera griseoaptera* hundreds of recordings are available, but for most species only a handful or, in some cases, only a single recording is available.

Of the roughly 32,400 worldwide grasshopper recordings on Xeno-canto, about 22 % are constrained to audible frequencies (<20,000 Hz) due to lower sampling rates. The rest were recorded at higher sampling rates that make it possible to capture ultrasonic content.

The availability of recordings is not equally distributed across Europe (Fig. 2, Table 2). Recording activity is skewed towards Southern France (including Corsica), the Pyrenees, northern Italy and Greece, with smaller concentrations of records in the Netherlands and Montenegro. These are, except for the Netherlands, all species rich areas. Large parts of Spain, Portugal and Italy are species rich but clearly received less attention. Countries like Croatia, Bosnia Herzegovina, Serbia and Bulgaria are relatively species rich but are undersampled. This is especially true for Bosnia Herzegovina for which only one recording is available. Northwest and northern Europe is species poor and most species occurring there are well represented in the Xeno-canto database. Nonetheless it is a pity that for countries like the Czech Republic, Denmark, Estonia, Finland, Ireland, Sweden and Slovakia no or almost no records are currently available.

Table 3 gives the percentage of species for which sound recordings are available on Xeno-canto for each of the five main regions of Europe. For Central and Northern Europe close to 88 percent of the sound producing species recordings are available, with the species not included being either restricted in range or very rare. This high percentage is due to a combination of a relatively low number of species and a high density of sound recordists living in this region. The lowest coverage is found in eastern Europe (67 %), which is largely due to the scarcity of data from Russia. For the other areas, the coverage ranges from 74 to 84 %, with an average of 69 % for the whole of Europe. In absolute numbers the number of species lacking any recordings is highest in the Iberian Peninsula (66 species), the Balkan peninsula (73) and eastern Europe (84 species), with the latter mostly referring to species in the Ukraine or the southern parts of European Russia.

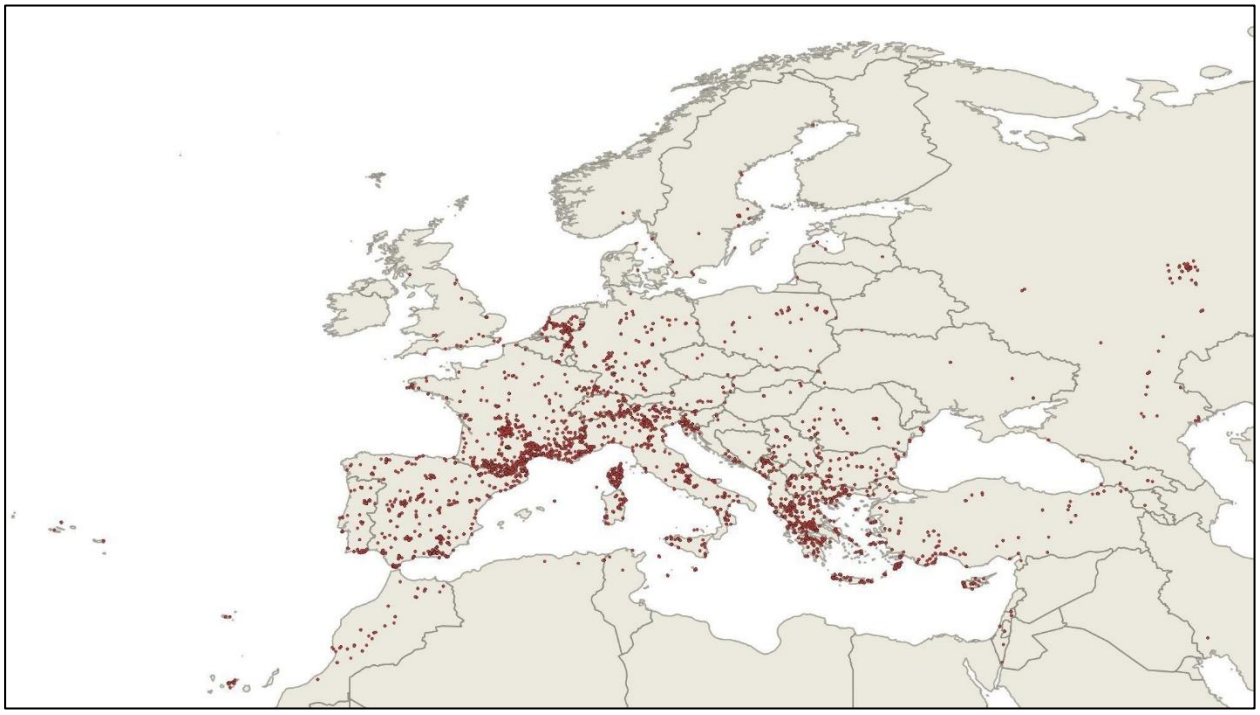

Fig. 2: Locations where sound recordings available on Xeno-canto were made.

Sound production is not distributed equally among the families and several, mostly small, families do not include any species producing sounds or sounds that facilitate identification: Dericorythidae, Myrmecophilidae, Pyrgomorphidae, Rhaphidophoridae, Tetrigidae and Tridactylidae. Together the large families of Acrididae and Tettigoniidae contain over 746 of the 803 (93 %) of the sounds producing European species. See Table 4.

For 23 European genera no recordings are available on Xeno-canto, many of which are represented in Europe only by one species. These include relatively many genera only found in eastern Europe (mostly Ukraine and Russia: *Aparapholidoptera* (1 species; recordings present on OSF), *Eremippus* (6), *Euconocercus* (2), *Gryllopsis* (1), *Isoimon* (1), *Lithodusa* (1), *Phonochorion* (1), *Phytodrymadusa* (1), *Schizonotinus* (3) and *Miramiola* (1). Genera with no recordings occurring in other parts of Europe are *Baratia* (1 species, Iberia), *Coracinotus* (3, Iberia; recordings of *Coracinotus notarioi* available through OSF), *Cycloptiloides* (1, Canary Islands; recording available through OSF), *Evergoderes* (1, Iberia), *Exodrymadusa* (1, Balkan), *Eyprepocnemis* (1, Mediterranean), *Oedaleus* (2, Mediterranean), *Praephippigera* (1, Italy), *Rammeihippus* (1, Balkan) and *Stenonemobius* (2, Mediterranean).

Table 1: Checklist of Orthoptera of Europe based on Ivković et al. (2024). For each species the general distribution, the sound production, the number of recordings on Xeno-canto and the total duration of these recordings is given. For those species for which no recordings are available on Xeno-canto the availability of recordings on orthoptera.speciesfile.org is indicated with 'OSF' in the last column. The species are divided into three groups based on the relevance of sound for identification and inventory: 0 – species not known to produce sound; 1 – species produce sound but sound is deemed of little relevance for identification as it is produced either very irregularly or it is generally not audible; 2 – species produce sound meaningful for identification and inventories.

	Iberia	Italy & Malta	Balkan	C-N Europe	East Europe	Sound production	Number	Length
TETTIGONIOIDEA Tettigoniidae								
Acrometopa cretensis			•			2	10	52:34
Acrometopa italica		•		•		2	29	20:57
Acrometopa macropoda		•	•			2	31	52:12
Acrometopa servillea			•			2	21	18:56
Acrometopa syriaca			•			2	14	07:09
Albarracinia zapaterii	•					2	40	63:24
Amedegnatiana vicheti				•		2	39	53:23
Amphiestris baetica	•					2	16	07:49
Anadrymadusa beckeri					•	2		
Anadrymadusa brevipennis			•			2	17	63:28
Anadrymadusa ornatipennis			•			2	21	69:52
Anadrymadusa picta					•	2		
Anadrymadusa retowskii					•	2	5	05:54
Anadrymadusa robusta					•	2		

	Iberia	Italy & Malta	Balkan	C-N Europe	East Europe	Sound production	Number	Length
Ancistrura nigrovittata			●			2	119	86:52
Andreiniimon nuptialis		●	●			2	48	18:34
Anonconotus alpinus		●		●		2	27	63:42
Anonconotus apenninigenus		●				2		
Anonconotus baracunensis		●		●		2	21	11:16
Anonconotus ghilianii		●		●		2	30	56:14
Anonconotus italoaustriacus		●		●		2	12	67:04
Anonconotus ligustinus		●		●		2	26	16:31
Anonconotus mercantouri				●		2	22	12:47
Anonconotus occidentalis		●		●		2	8	03:10
Anonconotus pusillus		●				2		
Anonconotus sibyllinus		●				2		
Antaxius beieri				●		2		
Antaxius bouvieri				●		2	13	09:50
Antaxius chopardi	●			●		2	44	160:14
Antaxius difformis		●	●	●		2	55	90:04
Antaxius florezi	●					2	17	11:32
Antaxius hispanicus	●			●		2	65	119:04
Antaxius kraussii	●					2	37	13:57
Antaxius pedestris		●		●		2	92	96:09
Antaxius sorrezensis				●		2	27	48:25
Antaxius spinibrachius	●			●		2	106	178:36
Anterastes serbicus			●			2	13	73:37
Aparapholidoptera distincta					●	2		
Ariagona margaritae	●					2	1	02:01
Baetica ustulata	●					2	41	72:29
Baratia sari	●					2		
Barbitistes alpinus		●				2	2	04:44
Barbitistes constrictus			●	●	●	2	13	13:33
Barbitistes fischeri	●	●		●		2	159	201:53
Barbitistes kaltenbachi			●			2	23	69:37
Barbitistes obtusus				●		2	69	116:45
Barbitistes ocskayi		●	●		●	2	232	139:54
Barbitistes serricauda	●	●	●	●	●	2	109	136:16
Barbitistes vicetinus		●				2	32	147:31
Barbitistes yersini		●	●			2	104	194:27
Bicolorana bicolor	●	●	●	●	●	2	179	326:58
Bicolorana kraussi		●	●			2	25	75:49
Bradyporus dasypus			●		●	2	35	60:01
Bradyporus latipes					●	2	2	01:53
Bradyporus macrogaster			●		●	2	15	18:40
Bradyporus multituberculatus					●	2		
Bradyporus oniscus			●			2	19	56:23
Bradyporus skopjensis			●			2	4	14:30
Broughtonia arnoldi			●			2	6	15:43
Broughtonia domogledi			●		●	2	32	85:26
Bucephaloptera bucephala			●			2	12	07:07
Bucephaloptera cypria			●			2		
Callicrania belarrensis	●					2		
Callicrania demandae	●					2		
Callicrania denticulata	●					2		

	Iberia	Italy & Malta	Balkan	C-N Europe	East Europe	Sound production	Number	Length
Callicrania faberi	●					2	1	00:30
Callicrania plaxicauda	●					2	11	00:53
Callicrania ramburii	●			●		2	43	69:00
Callicrania vicentae	●					2		
Calliphona alluaudi	●					2		
Calliphona gomerensis	●					2		
Calliphona koenigi	●					2	19	68:32
Calliphona palmensis	●					2		
Canariola emarginata	●					2	214	52:42
Canariola nubigena	●					2		
Canariola quinonesi	●					2		
Canariola willemsei	●					2		
Ceraeocercus fuscipennis					●	2	11	16:24
Conocephalus chavesi	●					2		
Conocephalus concolor	●					2	14	07:58
Conocephalus conocephalus	●	●	●	●		2	50	110:17
Conocephalus dorsalis	●	●	●	●	●	2	71	117:41
Conocephalus ebneri			●			2	8	17:01
Conocephalus fuscus	●	●	●	●	●	2	244	289:41
Conocephalus grebenchikovi			●			2		
Conocephalus hastatus			●		●	2		OSF
Conocephalus kisi			●			2	44	108:59
Conocephalus maculatus	●					2	4	10:59
Coracinotus notarioi	●					2		OSF
Coracinotus politus	●					2		
Coracinotus squamiferus	●					2		
Corsteropleurus chopardi				●		2	33	55:13
Ctenodecticus bolivari		●				2	6	11:09
Ctenodecticus granatensis	●					2	14	06:27
Ctenodecticus lusitanicus	●					2	6	04:40
Ctenodecticus major	●					2	21	121:49
Ctenodecticus masferreri	●					2		
Ctenodecticus pupulus	●					2		
Ctenodecticus ramburi	●					2	23	219:14
Ctenodecticus siculus		●				2		
Ctenodecticus thymi	●					2	37	57:28
Cyrtaspis scutata	●	●	●	●		2	135	197:31
Cyrtaspis tuberculata	●					2		
Decticus albifrons	●	●	●	●	●	2	198	148:15
Decticus aprutianus		●				2	25	107:54
Decticus loudoni		●				2	17	67:30
Decticus verrucivorus	●	●	●	●	●	2	240	409:27
Dinarippiger discoidalis		●	●	●		2	9	06:40
Drymadusa dorsalis			●			2	14	07:17
Ephippiger apulus		●				2	10	53:35
Ephippiger camillae		●				2		
Ephippiger carlottae		●				2	19	63:42
Ephippiger cavannai		●				2	25	95:15
Ephippiger diurnus	●			●		2	198	325:21
Ephippiger ephippiger			●	●	●	2	54	94:20
Ephippiger melisi		●				2	26	74:00

	Iberia	Italy & Malta	Balkan	C-N Europe	East Europe	Sound production	Number	Length
Ephippiger perforatus		●				2	12	61:20
Ephippiger persicarius		●	●	●		2	20	64:53
Ephippiger provincialis				●		2	11	06:12
Ephippiger ruffoi		●				2	27	53:10
Ephippiger terrestris		●		●		2	47	77:11
Ephippiger zelleri		●				2	2	14:17
Ephippigerida areolaria	●					2	31	51:21
Ephippigerida asella	●					2	9	10:55
Ephippigerida barati	●					2		OSF
Ephippigerida carinata	●					2	4	01:42
Ephippigerida diluta	●					2	3	02:10
Ephippigerida fernandezi	●					2		
Ephippigerida laserena	●					2	7	55:14
Ephippigerida longicauda	●					2		
Ephippigerida marceti	●					2		
Ephippigerida pantingana	●					2		
Ephippigerida rosae	●					2		
Ephippigerida saussuriana	●					2	3	01:37
Euconocercus caucasicus					●	2		
Euconocercus iris					●	2		
Eupholidoptera annamariae			●			2	6	06:57
Eupholidoptera astyla			●			2	15	11:31
Eupholidoptera bimucronata		●				2	2	04:35
Eupholidoptera brunneri		●				2		
Eupholidoptera cephalonica			●			2		
Eupholidoptera chabrieri		●	●	●		2	36	64:30
Eupholidoptera cretica			●			2		
Eupholidoptera cypria			●			2	25	234:35
Eupholidoptera danconai		●				2	13	77:02
Eupholidoptera epirotica			●			2	5	10:28
Eupholidoptera feri			●			2	1	02:12
Eupholidoptera forcipata			●			2	35	166:07
Eupholidoptera francisae			●			2		
Eupholidoptera garganica		●	●	●		2	43	96:17
Eupholidoptera gemellata			●			2		
Eupholidoptera giuliae			●			2	28	154:24
Eupholidoptera hesperica		●				2	4	13:29
Eupholidoptera icariensis			●			2	7	20:28
Eupholidoptera jacquelinae			●			2		
Eupholidoptera kekrops			●			2		
Eupholidoptera kykladica			●			2	8	11:21
Eupholidoptera latens			●			2	100	334:05
Eupholidoptera leucasi			●			2	4	01:59
Eupholidoptera magnifica		●				2	14	21:52
Eupholidoptera mariannae			●			2	24	18:05
Eupholidoptera marietheresae			●			2		
Eupholidoptera megastyla			●			2	50	84:39
Eupholidoptera pallipes			●			2		
Eupholidoptera prasina			●			2	6	08:24
Eupholidoptera schmidti		●	●	●	●	2	624	301:28
Eupholidoptera smyrnensis			●			2	50	152:26

	Iberia	Italy & Malta	Balkan	C-N Europe	East Europe	Sound production	Number	Length
Eupholidoptera spinigera			●			2		
Eupholidoptera tyrrhenica				●		2	20	09:42
Eupholidoptera uvarovi			●			2	21	62:08
Evergoderes cabrerai	●					2		
Exodrymadusa inornata			●			2		
Gampsocleis abbreviata			●			2	31	52:52
Gampsocleis assoi	●					2		
Gampsocleis glabra	●		●	●	●	2	81	147:03
Gampsocleis schelkovnikovae			●		●	2	10	48:48
Gampsocleis sedakovii					●	2	18	08:41
Incertana decorata	●					2	15	06:04
Incertana drepanensis		●				2	11	83:37
Incertana incerta			●			2	50	293:14
Isoimon riabovi					●	2		
Isophya amplipennis			●			2		
Isophya andreevae			●			2		OSF
Isophya beybienkoi				●		2		
Isophya bivittata					●	2		
Isophya boldyrevi					●	2		
Isophya brevicauda			●	●		2	16	74:15
Isophya brunneri					●	2	18	18:14
Isophya bucovinensis					●	2		
Isophya bureschi			●			2		OSF
Isophya camptoxypha				●	●	2	12	19:28
Isophya caspica					●	2		
Isophya ciucasi					●	2		
Isophya clara			●			2	31	176:40
Isophya costata				●	●	2	12	03:06
Isophya dobrogensis			●			2		
Isophya dochia					●	2		
Isophya doneciana					●	2		
Isophya fatrensis				●		2		
Isophya gulae			●			2	3	19:09
Isophya harzi					●	2	4	02:15
Isophya hospodar			●			2	41	101:41
Isophya kalishevskii					●	2		
Isophya kraussii				●	●	2	70	161:43
Isophya lemnotica			●			2	550	239:06
Isophya longicaudata			●		●	2	37	114:16
Isophya mavromoustakisi			●			2	25	111:29
Isophya miksici			●			2	6	70:12
Isophya modesta				●	●	2	29	102:40
Isophya modestior		●	●	●	●	2	126	368:11
Isophya nagyi					●	2		
Isophya nigrosignata					●	2		
Isophya obtusa			●			2	57	95:26
Isophya pavelii			●			2	23	68:17
Isophya pienensis				●	●	2	14	07:01
Isophya plevnensis			●			2	37	75:55
Isophya posthumoidalis				●	●	2	9	06:15
Isophya pyrenaea	●			●		2	58	128:38

	Iberia	Italy & Malta	Balkan	C-N Europe	East Europe	Sound production	Number	Length
Isophya rectipennis			●	●	●	2	53	96:33
Isophya rhodopensis			●			2	81	119:31
Isophya schneideri					●	2	2	02:06
Isophya sicula					●	2		
Isophya speciosa			●	●	●	2	28	90:50
Isophya stepposa					●	2		
Isophya straubei			●			2	10	16:22
Isophya stysi				●	●	2		
Isophya taurica					●	2	6	06:47
Isophya thracica			●			2	2	00:03
Isophya tosevski			●			2	41	50:29
Isophya transcaucasica					●	2		
Isophya zernovi					●	2	2	01:02
Isophya zubovskii			●		●	2		
Leptophyes albovittata		●	●	●	●	2	62	100:49
Leptophyes asamo			●			2		
Leptophyes axeli			●			2		
Leptophyes boscii		●	●	●	●	2	57	67:57
Leptophyes calabra		●				2	15	205:04
Leptophyes discoidalis			●	●	●	2	23	86:18
Leptophyes intermedia			●			2		OSF
Leptophyes laticauda		●	●	●	●	2	101	414:39
Leptophyes lisae			●			2	38	71:38
Leptophyes nigrovittata					●	2	1	00:10
Leptophyes punctatissima	●	●	●	●	●	2	343	458:13
Leptophyes sicula		●				2	27	54:58
Lithodusa daghestanica					●	2		
Lluciapomaresius anapaulae	●					2		
Lluciapomaresius asturiensis	●					2	31	20:23
Lluciapomaresius eclipticus	●					2		
Lluciapomaresius nobrei	●					2		
Lluciapomaresius ortegai	●					2	17	02:20
Lluciapomaresius panteli	●					2	5	02:52
Lluciapomaresius stalii	●					2	93	279:23
Lucasinova nigromarginata		●		●		2	37	63:13
Meconema meridionale	●	●	●	●	●	1	18	92:02
Meconema thalassinum	●	●	●	●	●	1	11	63:20
Medecticus assimilis					●	2	2	02:21
Metaplastes ippolitoi		●				2	11	85:40
Metaplastes oertzeni			●			2	25	10:33
Metaplastes ornatus			●			2	163	167:53
Metaplastes pulchripennis	●	●		●		2	53	74:48
Metrioptera ambigua	●					2	13	08:38
Metrioptera brachyptera		●	●	●	●	2	128	147:13
Metrioptera buyssoni	●			●		2	41	62:47
Metrioptera caprai		●				2	21	68:19
Metrioptera hoermanni			●			2	3	10:02
Metrioptera karnyana			●			2		
Metrioptera maritima	●					2	10	05:37
Metrioptera prenjica			●			2	18	70:43
Metrioptera saussuriana	●	●		●		2	148	260:53

	Iberia	Italy & Malta	Balkan	C-N Europe	East Europe	Sound production	Number	Length
Metrioptera tsirojanni			●			2	6	06:38
Miramiola pusilla					●	2		
Modestana ebneri			●			2	36	62:36
Modestana modesta		●	●			2	2	10:46
Montana armeniaca					●	2	8	08:42
Montana barretii	●					2	7	03:21
Montana carpetana	●					2	2	01:12
Montana daghestanica					●	2		
Montana decticiformis					●	2	7	11:13
Montana eversmanni					●	2	3	03:10
Montana macedonica			●			2	10	13:26
Montana medvedevi			●		●	2	2	18:24
Montana montana		●	●	●	●	2		OSF
Montana striata					●	2	1	10:38
Montana stricta		●	●			2	20	21:55
Neocallicrania barrosi	●					2		OSF
Neocallicrania bolivarii	●					2		
Neocallicrania lusitanica	●					2		
Neocallicrania miegii	●					2	31	56:20
Neocallicrania selligera	●					2	44	72:13
Neocallicrania serrata	●					2		
Odontura algerica		●				2		
Odontura aspericauda	●					2	36	147:26
Odontura calaritana		●				2		
Odontura glabricauda	●					2	42	165:27
Odontura macphersoni	●					2	35	54:29
Odontura martae		●				2		
Odontura stenoxypha		●				2	56	239:55
Onconotus laxmanni					●	2	1	00:10
Onconotus servillei			●		●	2	5	10:11
Pachytrachis bosniacus			●			2		OSF
Pachytrachis frater			●			2	4	03:23
Pachytrachis gracilis		●	●	●	●	2	70	356:30
Pachytrachis striolatus		●	●	●		2	21	52:17
Pachytrachis tumidus			●			2	3	06:02
Paradrymadusa abchazica					●	2		
Paradrymadusa galitzini					●	2	6	22:02
Paradrymadusa sciadophila					●	2		
Paradrymadusa sordida					●	2		
Parapholidoptera castaneoviridis			●		●	2	4	01:10
Parapholidoptera georgiae					●	2		
Parapholidoptera noxia					●	2	2	06:52
Parapholidoptera signata			●			2		OSF
Parasteropleurus balearicus	●					2		
Parasteropleurus martorellii	●					2	48	68:21
Parasteropleurus perezii	●					2	69	107:10
Parnassiana chelmos			●			2	52	174:54
Parnassiana coracis			●			2	27	182:29
Parnassiana dirphys			●			2	16	59:18
Parnassiana fusca			●			2	24	70:35
Parnassiana gionica			●			2	24	209:38

	Iberia	Italy & Malta	Balkan	C-N Europe	East Europe	Sound production	Number	Length
Parnassiana menalon			●			2	9	19:35
Parnassiana nigromarginata			●			2	6	06:30
Parnassiana panaetolikon			●			2	7	17:35
Parnassiana parnassica			●			2	22	52:17
Parnassiana parnon			●			2	8	12:37
Parnassiana tenuis			●			2	17	13:03
Parnassiana tymphiensis			●			2	15	66:16
Parnassiana tymphrestos			●			2	45	78:35
Phaneroptera bivittata					●	2		
Phaneroptera falcata	●	●	●	●	●	2	411	1492:44
Phaneroptera laticerca	●			●		2		
Phaneroptera nana	●	●	●	●	●	2	577	2044:07
Phaneroptera sparsa	●					2	323	75:02
Phaneroptera spinosa			●		●	2	7	52:00
Pholidoptera aptera		●	●	●	●	2	90	156:20
Pholidoptera brevipes			●			2	12	61:54
Pholidoptera dalmatica		●	●			2	10	11:11
Pholidoptera ebneri			●			2	16	65:33
Pholidoptera fallax		●	●	●	●	2	57	74:33
Pholidoptera femorata		●	●	●		2	143	157:13
Pholidoptera frivaldszkyi			●	●	●	2	18	215:45
Pholidoptera griseoaptera	●	●	●	●	●	2	1395	525:37
Pholidoptera kalandadzei					●	2	10	85:33
Pholidoptera littoralis		●	●	●	●	2	98	271:39
Pholidoptera lucasi			●			2	12	08:04
Pholidoptera macedonica			●			2	39	169:41
Pholidoptera pustulipes					●	2	2	03:39
Pholidoptera rhodopensis			●			2	11	11:41
Pholidoptera stankoi			●			2	42	19:51
Pholidoptera transsylvanica			●	●	●	2	14	71:30
Phonochorion satunini					●	2		
Phytodrymadusa longipes					●	2		
Platycleis affinis	●	●	●	●	●	2	166	190:40
Platycleis albopunctata	●	●	●	●	●	2	337	250:55
Platycleis concii		●				2	51	126:41
Platycleis escalerai		●	●			2	45	110:53
Platycleis falx	●	●		●		2	64	67:50
Platycleis grisea		●	●	●	●	2	91	98:48
Platycleis iberica	●					2	42	197:27
Platycleis iljinskii					●	2		
Platycleis intermedia	●	●	●	●	●	2	216	222:47
Platycleis kibris			●			2		
Platycleis longicauda					●	2		
Platycleis ragusai		●				2		
Platycleis romana		●	●			2	7	11:28
Platycleis sabulosa	●	●		●		2	85	109:35
Platycleis waltheri				●		2		
Platystolus martinezii	●					2	22	57:48
Platystolus monticola				●		2		
Platystolus surcularius	●					2		OSF
Poecilimon aegaeus			●			2	7	55:18

	Iberia	Italy & Malta	Balkan	C-N Europe	East Europe	Sound production	Number	Length
Poecilimon affinis			●	●	●	2	257	332:44
Poecilimon albolineatus			●			2	1	01:01
Poecilimon amissus			●			2	39	19:44
Poecilimon ampliatus			●		●	2	18	08:17
Poecilimon artedentatus			●			2	88	19:57
Poecilimon athos			●			2		
Poecilimon bidens			●			2	4	03:25
Poecilimon bifenestratus					●	2		
Poecilimon bischoffi					●	2		
Poecilimon bosphoricus			●			2	1	00:19
Poecilimon brunneri			●	●	●	2	16	51:06
Poecilimon chopardi			●			2	59	82:11
Poecilimon chostae					●	2		
Poecilimon concinnus					●	2		
Poecilimon cretensis			●			2		OSF
Poecilimon deplanatus			●			2	22	104:03
Poecilimon djakonovi					●	2		
Poecilimon ebneri			●			2	53	83:19
Poecilimon ege			●			2	1	00:06
Poecilimon elegans		●	●			2	50	95:19
Poecilimon erimanthos			●			2	18	14:27
Poecilimon fussii			●	●	●	2	40	23:14
Poecilimon geoktschajcus					●	2		
Poecilimon gerlindae			●			2		OSF
Poecilimon gracilioides			●			2	6	66:27
Poecilimon gracilis			●	●		2	29	18:49
Poecilimon hamatus			●			2	90	205:31
Poecilimon heinrichi			●			2	6	74:53
Poecilimon heroicus					●	2	9	05:17
Poecilimon hoelzeli			●			2	54	70:28
Poecilimon ikariensis			●			2	17	138:31
Poecilimon intermedius				●	●	2		
Poecilimon istanbul			●			2		
Poecilimon jablanicensis			●			2		OSF
Poecilimon jonicus			●			2	168	150:32
Poecilimon klausgerhardi			●			2	12	89:43
Poecilimon laevissimus		●	●			2	41	63:14
Poecilimon macedonicus			●			2	45	71:11
Poecilimon mariannae			●			2	24	07:37
Poecilimon marmaraensis			●			2	21	06:25
Poecilimon miramae			●			2	11	08:38
Poecilimon mytilenensis			●			2	76	55:04
Poecilimon nobilis			●			2	68	73:56
Poecilimon nonveilleri			●			2	16	73:15
Poecilimon obesus			●			2	33	18:42
Poecilimon oligacanthus					●	2		
Poecilimon orbelicus			●			2	33	08:17
Poecilimon ornatus		●	●	●		2	165	160:29
Poecilimon paros			●			2	37	110:42
Poecilimon pechevi			●			2	4	57:05
Poecilimon pergamicus			●			2	24	16:51

	Iberia	Italy & Malta	Balkan	C-N Europe	East Europe	Sound production	Number	Length
Poecilimon pindos			●			2	16	05:19
Poecilimon pliginskii					●	2	6	05:22
Poecilimon propinquus			●			2	40	67:01
Poecilimon pseudornatus			●			2	46	195:51
Poecilimon roseoviridis			●			2	10	04:48
Poecilimon sanctipauli			●			2	156	89:36
Poecilimon schmidtii			●	●	●	2	31	50:43
Poecilimon scythicus					●	2	4	00:27
Poecilimon similis					●	2	4	02:56
Poecilimon soulion			●			2	4	55:21
Poecilimon superbus		●				2	41	65:07
Poecilimon sureyanus			●			2	27	05:29
Poecilimon tauricus					●	2	8	08:37
Poecilimon tessellatus			●			2	54	64:51
Poecilimon thessalicus			●			2	30	13:32
Poecilimon thoracicus		●	●	●	●	2	39	55:46
Poecilimon tricuspis					●	2		
Poecilimon turcicus			●			2	20	04:59
Poecilimon ukrainicus			●	●	●	2	5	10:07
Poecilimon unispinosus			●			2	15	58:43
Poecilimon veluchianus			●			2	70	60:54
Poecilimon vodnensis			●			2		OSF
Poecilimon warchalowskae			●			2		OSF
Poecilimon werneri			●			2	63	69:48
Poecilimon zimmeri			●			2	74	87:45
Poecilimon zwicki			●			2	81	56:33
Polysarcus denticauda	●	●	●	●	●	2	102	199:59
Polysarcus scutatus			●	●		2	38	98:50
Polysarcus zacharovi					●	2	2	02:18
Praephippigera pachygaster		●				2		
Psalmatophanes barretoi	●					2	1	02
Psorodonotus fieberi			●			2	12	06:18
Psorodonotus illyricus			●			2	17	55:02
Psorodonotus macedonicus			●			2	18	52:47
Psorodonotus specularis					●	2	10	09:31
Psorodonotus venosus					●	2	3	03:45
Pterolepis cordubensis	●					2	27	15:48
Pterolepis elymica		●				2	2	00:31
Pterolepis grallata	●					2	15	09:44
Pterolepis lusitanica	●					2		
Pterolepis pedata		●				2	11	53:03
Pterolepis pityusensis	●					2		
Pterolepis spoliata	●					2	90	92:40
Pycnogaster algecirensis	●					2	1	00:28
Pycnogaster cucullatus	●					2	1	00:41
Pycnogaster finotii	●					2		
Pycnogaster gaditana	●					2	20	64:27
Pycnogaster graellsii	●					2		
Pycnogaster inermis	●					2	15	91:08
Pycnogaster jugicola	●					2	50	114:13
Pycnogaster rosae	●					2		

	Iberia	Italy & Malta	Balkan	C-N Europe	East Europe	Sound production	Number	Length
Pycnogaster sanchezgomezi	●					2	9	16:17
Pycnogaster valentini	●					2	3	02:03
Rhacocleis agiostratica			●			2		
Rhacocleis anatolica			●			2		
Rhacocleis andikithirensis			●			2		
Rhacocleis annulata		●	●	●		2	59	667:39
Rhacocleis baccettii		●				2	22	68:54
Rhacocleis bonfilsi				●		2	24	14:45
Rhacocleis buchichii			●			2	15	180:53
Rhacocleis corsicana		●		●		2	52	63:48
Rhacocleis crypta			●			2	9	10:28
Rhacocleis derrai			●			2	6	02:46
Rhacocleis distinguenda			●			2	33	323:20
Rhacocleis edentata			●			2	26	15:47
Rhacocleis ferdinandi			●			2	5	04:49
Rhacocleis germanica		●	●	●	●	2	121	159:46
Rhacocleis graeca			●			2	16	49:55
Rhacocleis grallata	●					2		OSF
Rhacocleis insularis			●			2	10	10:49
Rhacocleis japygia		●				2	10	57:57
Rhacocleis lithoscirtetes			●			2	26	353:41
Rhacocleis maculipedes		●				2	8	49:25
Rhacocleis neglecta		●				2	20	71:29
Rhacocleis poneli				●		2	40	599:03
Rhacocleis silvestrii			●			2	11	53:14
Rhacocleis thyrrhenica		●				2	8	01:33
Rhacocleis trilobata			●			2		
Rhacocleis uvarovi			●			2		
Rhacocleis werneri			●			2	9	02:59
Roeseliana ambitiosa			●			2	18	97:31
Roeseliana azami		●		●		2	106	76:40
Roeseliana brunneri		●				2	15	83:33
Roeseliana epirotica			●			2		
Roeseliana fedtschenkoi			●		●	2		OSF
Roeseliana oporina	●					2	24	14:37
Roeseliana pylnovi					●	2	3	02:10
Roeseliana roeselii	●	●	●	●	●	2	258	317:43
Ruspolia differens			●	●		2		OSF
Ruspolia nitidula	●	●	●	●	●	2	154	172:17
Sabaterpia hispanica	●					2		
Sabaterpia paulinoi	●					2		
Sabaterpia taeniata	●					2	16	05:04
Saga campbelli			●			2	19	12:28
Saga ephippigera					●	2	4	11
Saga gracilis			●			2		
Saga hellenica			●			2	693	139:40
Saga natoliae			●			2	28	64:20
Saga pedo	●	●	●	●	●	0		
Saga rammei			●			2	7	65:57
Saga rhodiensis			●			2	6	08:14
Sardoplatycleis galvagnii		●				2	14	58:00

	Iberia	Italy & Malta	Balkan	C-N Europe	East Europe	Sound production	Number	Length
Schizonotinus crassicercus					●	2		
Schizonotinus forficalis					●	2		
Schizonotinus kerketa					●	2		
Sepiana sepium	●	●	●	●	●	2	137	175:07
Sorapagus catalaunicus	●			●		2	78	120:41
Sporadiana sporadarum			●			2	6	12:05
Steropleurus andalusius	●					2	56	292:55
Steropleurus brunnerii	●					2	18	68:52
Steropleurus castellanus	●					2		
Steropleurus flavovittatus	●					2	33	12:57
Steropleurus obsoletus	●					2		
Steropleurus pseudolus	●					2	3	51:09
Steropleurus recticarinatus	●					2	3	12:09
Synephippius obvius	●					2	40	178:56
Tessellana carinata			●			2	4	04:43
Tessellana lagrecai		●				2	437	212:37
Tessellana nigrosignata		●				2	14	79:39
Tessellana orina			●			2	21	12:24
Tessellana tessellata	●	●	●	●	●	2	144	269:54
Tessellana veyseli			●	●	●	2	6	16:30
Tettigonia balcanica			●			2	19	62:30
Tettigonia cantans	●	●	●	●	●	2	246	444:03
Tettigonia caudata		●	●	●	●	2	70	107:24
Tettigonia hispanica	●					2	31	62:43
Tettigonia longispina		●				2	30	62:41
Tettigonia silana		●				2	34	91:37
Tettigonia viridissima	●	●	●	●	●	2	566	1383:28
Thyreonotus bidens	●					2	31	14:23
Thyreonotus corsicus	●			●		2	78	81:25
Tylopsis lilifolia	●	●	●	●	●	2	122	222:57
Uromenus agarenus	●					2	14	07:22
Uromenus annae		●				2	3	01:42
Uromenus bonneti		●				2		
Uromenus brevicollis	●	●		●		2	69	124:35
Uromenus dyrrhachiacus			●			2	1	04:45
Uromenus elegans		●	●			2	31	100:29
Uromenus maroccanus	●					2	9	54:45
Uromenus riggioi		●				2		
Uromenus rugosicollis	●			●		2	156	229:54
Uromenus siculus		●				2	8	11:52
Vichetia knipperi			●			2		
Vichetia oblongicollis			●			2	43	70:59
Yersinella beybienkoi		●		●		2	56	111:28
Yersinella raymondii	●	●	●	●	●	2	198	113:36
Zeuneriana abbreviata	●	●		●		2	86	126:58
Zeuneriana amplipennis			●	●		2	17	67:52
Zeuneriana burriana	●					2	19	11:44
Zeuneriana marmorata		●	●			2	9	22:26
RHAPHIDOPHOROIDEA Rhaphidophoridae								
Dolichopoda aegilion		●				0		

	Iberia	Italy & Malta	Balkan	C-N Europe	East Europe	Sound production	Number	Length
Dolichopoda annae			●			0		
Dolichopoda apollinea		●				0		
Dolichopoda araneiformis			●			0		
Dolichopoda athosensis			●			0		
Dolichopoda azami				●		0		
Dolichopoda baccettii		●				0		
Dolichopoda bakolitsasi			●			0		
Dolichopoda bolivari	●					0		
Dolichopoda bormansi				●		0		
Dolichopoda calabra		●				0		
Dolichopoda calidnae			●			0		
Dolichopoda capreensis		●				0		
Dolichopoda cassagnaui			●			0		
Dolichopoda chopardi				●		0		
Dolichopoda christosnifoni			●			0		
Dolichopoda cyrnensis				●		0		
Dolichopoda dalensi			●			0		
Dolichopoda dirussoi			●			0		
Dolichopoda epidavrii			●			0		
Dolichopoda euxina					●	0		
Dolichopoda gasparoi			●			0		
Dolichopoda geniculata		●		●		0		
Dolichopoda giachinoi			●			0		
Dolichopoda giulianae			●			0		
Dolichopoda graeca			●			0		
Dolichopoda hussoni			●			0		
Dolichopoda insignis			●			0		
Dolichopoda ithakii			●			0		
Dolichopoda kalithea			●			0		
Dolichopoda karoutsosi			●			0		
Dolichopoda kikladica			●			0		
Dolichopoda kiriakii			●			0		
Dolichopoda kofinasi			●			0		
Dolichopoda kotsabasi			●			0		
Dolichopoda laetitiae		●				0		
Dolichopoda linderii	●			●		0		
Dolichopoda lustriae			●			0		
Dolichopoda makrykapa			●			0		
Dolichopoda margiolis			●			0		
Dolichopoda matsakisi			●			0		
Dolichopoda muceddai		●				0		
Dolichopoda naxia			●			0		
Dolichopoda ochtoniai			●			0		
Dolichopoda palpata		●				0		
Dolichopoda paraskevi			●			0		
Dolichopoda patrizii			●			0		
Dolichopoda pavesii			●			0		
Dolichopoda petrochilosi			●			0		
Dolichopoda poseidonica			●			0		
Dolichopoda propantii			●			0		
Dolichopoda remyi			●			0		

	Iberia	Italy & Malta	Balkan	C-N Europe	East Europe	Sound production	Number	Length
Dolichopoda saraolacosi			●			0		
Dolichopoda schiavazzi		●				0		
Dolichopoda steriotisi			●			0		
Dolichopoda thasosensis			●			0		
Dolichopoda unicolor			●			0		
Dolichopoda vandeli			●			0		
Tachycines asynamorus		●	●	●	●	0		
Troglophilus andreinii		●				0		
Troglophilus brevicauda			●			0		
Troglophilus cavicola		●	●	●		0		
Troglophilus lagoi			●			0		
Troglophilus lazaropolensis			●			0		
Troglophilus marinae			●			0		
Troglophilus neglectus		●	●	●		0		
Troglophilus ovuliformis			●			0		
Troglophilus spinulosus			●			0		
Troglophilus zoiai			●			0		
Troglophilus zorae			●			0		
GRYLLOIDEA Gryllidae								
Acanthogryllus acus	●					2	2	01:20
Acheta domesticus	●	●	●	●	●	2	68	227:09
Acheta gossypii		●				2		
Acheta hispanicus	●	●				2	8	04:04
Acheta meridionalis	●					2	1	01:34
Acheta pantescus		●				2		
Acroneuroptila puddui		●				0		
Acroneuroptila sardoa		●				0		
Brachytrupes megacephalus		●				2	1	00:35
Eugryllodes escalerae	●					2	35	105:32
Eugryllodes littoreus	●					2		
Eugryllodes pipiens	●			●		2	113	204:52
Eumodicogryllus bordigalensis	●	●	●	●	●	2	160	1199:08
Eumodicogryllus theryi	●					2	25	54:23
Grylloderes brunneri		●				2	12	48:15
Gryllodes sigillatus	●			●		2	51	71:13
Gryllodinus kerkennensis	●		●		●	2	22	58:07
Gryllodinus odicus					●	2	1	00:10
Gryllomorpha albanica			●			0		
Gryllomorpha canariensis	●					0		
Gryllomorpha dalmatina	●	●	●	●		0		
Gryllomorpha gestroana					●	0		
Gryllomorpha gracilipes	●					0		
Gryllomorpha lanzarotensis	●					0		
Gryllomorpha longicauda	●					0		
Gryllomorpha miramae			●		●	0		
Gryllomorpha uclensis	●	●		●		0		
Gryllopsis caspicus					●	2		
Gryllus bimaculatus	●	●	●	●	●	2	153	350:23
Gryllus campestris	●	●	●	●	●	2	278	366:17
Melanogryllus desertus	●	●	●	●	●	2	77	113:09

	Iberia	Italy & Malta	Balkan	C-N Europe	East Europe	Sound production	Number	Length
Modicogryllus algirius		●		●		2	28	23:05
Modicogryllus cyprius			●			2	2	05:55
Modicogryllus frontalis			●	●	●	2	23	101:55
Modicogryllus guanchicus	●					2		
Modicogryllus pseudocyprius			●			2		
Modicogryllus truncatus			●	●	●	2	16	55:20
Ovaliptila buresi			●		●	0		
Ovaliptila kinzelbachi			●			0		
Ovaliptila krueperi			●			0		
Ovaliptila lindbergi			●			0		
Ovaliptila nana			●			0		
Ovaliptila newmanae			●			0		
Ovaliptila rhodos			●			0		
Ovaliptila wettsteini			●			0		
Ovaliptila willemsei			●			0		
Petaloptila aliena	●			●		0		
Petaloptila andreinii		●		●		0		
Petaloptila baenai	●					0		
Petaloptila barrancoi	●					0		
Petaloptila bolivari	●					0		
Petaloptila carabajali	●					0		
Petaloptila clauseri		●				0		
Petaloptila fermini	●					0		
Petaloptila fragosoi	●					0		
Petaloptila galaica	●					0		
Petaloptila isabelae	●					0		
Petaloptila llorenteae	●					0		
Petaloptila malacitana	●					0		
Petaloptila mogon	●					0		
Petaloptila pallescens	●					0		
Petaloptila pyrenaea	●					0		
Petaloptila sbordonii		●				0		
Petaloptila venosa	●					0		
Sciobia boscai	●					?		
Sciobia caliendra	●					2	25	65:45
Sciobia lusitanica	●					?		
Sciobia natalia	●					2		
Svercus palmetorum	●	●	●	●		2	71	110:04
Tartarogryllus sandanski			●			2		
Tartarogryllus tartarus	●		●		●	2	24	18:31
Turanogryllus lateralis					●	2	14	10:25
Velarifictorus micado					●	2	19	51:03
GRYLLOIDEA Trigonidiidae								
Natula averni	●	●	●	●	●	2	57	80:39
Nemobius interstitialis	●					0		
Nemobius sylvestris	●	●		●	●	2	122	221:02
Pteronemobius heydenii	●	●	●	●	●	2	209	247:55
Pteronemobius lineolatus	●	●		●		2	53	153:59
Stenonemobius bicolor			●	●	●	2		
Stenonemobius gracilis	●	●	●		●	2		

	Iberia	Italy & Malta	Balkan	C-N Europe	East Europe	Sound production	Number	Length
Trigonidium cicindeloides	●	●	●	●		0		
GRYLLOIDEA Oecanthidae								
Oecanthus dulcisonans	●	●	●			2	80	167:54
Oecanthus pellucens	●	●	●	●	●	2	226	303:48
Oecanthus turanicus					●	2	1	00:11
GRYLLOIDEA Mogoplistidae								
Arachnocephalus vestitus	●	●	●	●	●	0		
Cycloptiloides canariensis	●					2		OSF
Mogoplistes brunneus	●	●	●	●		0		
Mogoplistes kinzelbachi			●			0		
Paramogoplistes dentatus	●					0		
Paramogoplistes novaki		●	●			0		
Paramogoplistes ortini	●					0		
Pseudomogoplistes byzantius			●		●	0		
Pseudomogoplistes madeirae	●					0		
Pseudomogoplistes squamiger	●	●	●	●		0		
Pseudomogoplistes vicentae	●			●		0		
GRYLLOTALPOIDEA Gryllotalpidae								
Gryllotalpa africana	●					2	58	82:17
Gryllotalpa cossyrensis		●				2		
Gryllotalpa gryllotalpa	●	●	●	●	●	2	115	156:53
Gryllotalpa krimbasi			●			2	2	02:04
Gryllotalpa octodecim		●		●		2		
Gryllotalpa quindecim		●				2		
Gryllotalpa robusta	●					2		
Gryllotalpa sedecim		●		●		2		
Gryllotalpa septemdecimchromosomica	●	●		●		2		
Gryllotalpa stepposa			●	●	●	2		
Gryllotalpa unispina			●		●	2	1	00:35
Gryllotalpa viginti		●				2		
Gryllotalpa vigintiunum		●				2		
Gryllotalpa vineae	●			●		2	48	64:38
GRYLLOTALPOIDEA Myrmecophilidae								
Myrmecophilus acervorum	●	●	●	●	●	0		
Myrmecophilus aequispina		●		●		0		
Myrmecophilus balcanicus			●			0		
Myrmecophilus baronii		●				0		
Myrmecophilus fuscus	●	●		●		0		
Myrmecophilus gallicus				●		0		
Myrmecophilus hirticaudus			●		●	0		
Myrmecophilus myrmecophilus		●	●	●		0		
Myrmecophilus nonveilleri			●	●	●	0		
Myrmecophilus ochraceus	●	●	●			0		
Myrmecophilus orientalis			●			0		
TETRIGOIDEA Tetrigidae								
Paratettix meridionalis	●	●	●	●	●	0		
Paratettix uvarovi					●	0		
Tetrix bipunctata	●	●	●	●	●	0		

	Iberia	Italy & Malta	Balkan	C-N Europe	East Europe	Sound production	Number	Length
Tetrix bolivari	●	●	●	●	●	0		
Tetrix ceperoi	●	●	●	●	●	0		
Tetrix depressa	●	●	●	●	●	0		
Tetrix fuliginosa				●	●	0		
Tetrix gavoyi				●		0		
Tetrix nodulosa	●					0		
Tetrix subulata	●	●	●	●	●	0		
Tetrix tenuicornis	●	●	●	●	●	0		
Tetrix transsylvanica			●	●	●	0		
Tetrix tuerki		●	●	●	●	0		
Tetrix undulata	●		●	●	●	0		
TRIDACTYLOIDEA Tridactylidae								
Bruntridactylus irremipes			●			0		
Bruntridactylus tartarus			●		●	0		
Asiotridactylus fasciatus					●	0		
Xya iberica	●					0		
Xya pfaendleri			●	●	●	0		
Xya variegata	●	●	●	●	●	0		
ACRIDOIDEA Acrididae								
Acanthacris ruficornis	●					0		
Acrida bicolor	●				●	0		
Acrida oxycephala					●	0		
Acrida turrita		●	●			0		
Acrida ungarica	●	●	●	●	●	1	1	00:02
Acrotylus fischeri	●	●		●		1		
Acrotylus insubricus	●	●	●	●	●	1		
Acrotylus longipes	●	●	●	●	●	1		
Acrotylus patruelis	●	●	●	●	●	1		
Aeropedellus variegatus		●	●	●	●	2	18	79:54
Aeropedellus volgensis					●	2		
Aiolopus puissanti	●			●		1		
Aiolopus simulatrix		●	●			1		
Aiolopus strepens	●	●	●	●	●	1	6	05:31
Aiolopus thalassinus	●	●	●	●	●	1		
Anacridium aegyptium	●	●	●	●	●	0		
Arcyptera alzonai		●		●		2		
Arcyptera brevipennis	●		●	●		2	7	01:54
Arcyptera fusca		●	●	●	●	2	40	69:40
Arcyptera kheili				●		2	9	00:40
Arcyptera labiata			●			2		
Arcyptera microptera	●	●	●	●	●	2	14	08:10
Arcyptera tornosi	●					2	22	12:52
Arminda brunneri	●					0		
Arminda burri	●					0		
Arminda canariensis	●					0		
Arminda fuerteventurae	●					0		
Arminda hierroensis	●					0		
Arminda lancerottensis	●					0		
Arminda latifrons	●					0		
Arminda palmae	●					0		

	Iberia	Italy & Malta	Balkan	C-N Europe	East Europe	Sound production	Number	Length
Bohemanella frigida	●	●	●	●	●	0		
Brachycrotaphus tryxalicerus	●	●				2	2	02:02
Bryodema gebleri					●	2	1	00:02
Bryodemella tuberculata		●		●	●	2	4	01:50
Calephorus compressicornis	●	●		●		1	3	00:22
Calliptamus barbarus	●	●	●	●	●	1		
Calliptamus coelesyriensis			●			1		
Calliptamus italicus	●	●	●	●	●	1	3	00:48
Calliptamus madeirae	●					1		
Calliptamus plebeius	●					1		
Calliptamus siciliae		●		●		1		
Calliptamus tenuicercis			●		●	1		
Calliptamus wattenwylianus	●	●		●		1		
Capraiuscola ebneri				●	●	0		
Caucasippus rufipes					●	?		
Celes variabilis	●	●	●	●	●	0		
Chorthippus abchasicus					●	2		
Chorthippus acroleucus					●	2	27	134:56
Chorthippus albomarginatus	●			●	●	2	33	103:29
Chorthippus alticola		●		●		2	13	72:57
Chorthippus apicalis	●					2	13	11:46
Chorthippus apricarius	●	●	●	●	●	2	73	142:13
Chorthippus ariasi	●					2		
Chorthippus armoricanus				●		2		
Chorthippus biguttulus	●	●	●	●	●	2	411	1092:05
Chorthippus binotatus	●			●		2	66	135:09
Chorthippus biroi			●			2		
Chorthippus brunneus	●	●	●	●	●	2	206	352:13
Chorthippus cazurroi	●					2		
Chorthippus chloroticus	●					2		
Chorthippus cialancensis		●		●		2		
Chorthippus corsicus				●		2	39	99:15
Chorthippus crassiceps			●			2		
Chorthippus dichrous		●	●	●	●	2	18	255:12
Chorthippus dorsatus	●	●	●	●	●	2	59	159:53
Chorthippus dubius					●	2	15	06:12
Chorthippus eisentrauti		●	●	●		2	181	656:26
Chorthippus fallax					●	2	5	05:07
Chorthippus ferdinandi			●			2		
Chorthippus hirtus					●	2		
Chorthippus jacobsi	●			●		2	88	69:29
Chorthippus jucundus	●			●		2	12	12:47
Chorthippus jutlandica				●		2		
Chorthippus karelini					●	2	26	128:24
Chorthippus lacustris			●			2		
Chorthippus loratus			●	●	●	2	2	04:11
Chorthippus macrocerus			●		●	2	12	08:13
Chorthippus maritimus		●	●		●	2	39	85:06
Chorthippus messinai		●				2	11	18:31
Chorthippus mollis	●	●	●	●	●	2	290	1012:50
Chorthippus moreanus			●			2		

	Iberia	Italy & Malta	Balkan	C-N Europe	East Europe	Sound production	Number	Length
Chorthippus nevadensis	●					2	14	12:11
Chorthippus oschei			●	●	●	2	12	79:47
Chorthippus parnon			●			2		
Chorthippus pulloides			●			2	5	12:18
Chorthippus pullus		●		●	●	2	17	116:36
Chorthippus reissingeri	●					2	9	05:41
Chorthippus rubratibialis		●				2	21	72:10
Chorthippus sampeyrensis		●		●		2	1	00:07
Chorthippus sangiorgii			●			2		
Chorthippus saulcyi	●	●		●		2	87	90:00
Chorthippus saxatilis					●	2		
Chorthippus tatrae				●		2		
Chorthippus trinacriae		●				2		
Chorthippus uvarovi					●	2		
Chorthippus vagans	●	●	●	●	●	2	134	235:23
Chorthippus willemsei			●			2		OSF
Chorthippus yersini	●					2	20	52:38
Chortopodisma cobelli		●				0		
Chrysochraon beybienkoi		●				2		
Chrysochraon dispar	●	●	●	●	●	2	66	101:07
Cophopodisma pyrenaea	●			●		0		
Dociostaurus brevicollis			●	●	●	2	2	01:27
Dociostaurus crassiusculus	●					2		
Dociostaurus genei	●	●	●	●		2		
Dociostaurus hispanicus	●					2		
Dociostaurus jagoi	●	●	●	●		2	23	54:48
Dociostaurus kraussi	●				●	2	2	01:14
Dociostaurus maroccanus	●	●	●	●	●	2	20	22:39
Dociostaurus minutus		●				2		
Dociostaurus tartarus					●	2		
Duroniella carinata					●	0		
Duroniella fracta			●			0		
Duroniella gracilis					●	0		
Duroniella kalmyka					●	0		
Duroniella laticornis			●			0		
Duroniella lucasii		●	●			0		
Egnatius apicalis					●	0		
Epacromius coerulipes		●	●	●	●	1		
Epacromius pulverulentus					●	1	13	02:29
Epacromius tergestinus	●	●	●	●	●	1		
Epipodisma pedemontana		●		●		0		
Eremippus comatus					●	2		
Eremippus costatus					●	2		
Eremippus miramae					●	2		
Eremippus opacus					●	2		
Eremippus simplex					●	2		
Eremippus sobolevi					●	2		
Euchorthippus albolineatus		●				2	2	01:22
Euchorthippus angustulus	●					2		
Euchorthippus chopardi	●			●		2	25	51:59
Euchorthippus declivus	●	●	●	●	●	2	47	63:27

	Iberia	Italy & Malta	Balkan	C-N Europe	East Europe	Sound production	Number	Length
Euchorthippus elegantulus	●	●		●		2	24	54:30
Euchorthippus madeirae	●					2		
Euchorthippus pulvinatus			●	●	●	2	1	01:38
Euchorthippus sardous		●				2	10	16:02
Euchorthippus transcaucasicus					●	2		
Euthystira brachyptera	●	●	●	●	●	2	47	133:35
Eyprepocnemis plorans	●	●	●	●	●	?		
Gomphoceridius brevipenne	●			●		2	3	02:54
Gomphocerippus rufus	●	●	●	●	●	2	73	268:03
Gomphocerus sibiricus	●	●	●	●	●	2	44	115:25
Heteracris adspersa		●	●		●	1		
Heteracris annulosa		●				1		
Heteracris littoralis	●		●			1		
Heteracris pterosticha					●	1		
Hyalorrhipis canescens	●					1		
Hyalorrhipis clausii					●	1		
Italohippus albicornis		●				2	3	05:27
Italohippus modestus		●				2	5	58:09
Italohippus monticola		●				2	26	108:34
Italopodisma acuminata		●				0		
Italopodisma baccettii		●				0		
Italopodisma costae		●				0		
Italopodisma ebneri		●				0		
Italopodisma fiscellana		●				0		
Italopodisma lagrecai		●				0		
Italopodisma lucianae		●				0		
Italopodisma samnitica		●				0		
Italopodisma trapezoidalis		●				0		
Leptopternis gracilis	●				●	1		
Locusta migratoria	●	●	●	●	●	2	6	05:44
Mecostethus parapleurus	●	●	●	●	●	1		
Megaulacobothrus aethalinus					●	2	1	00:24
Micropodisma koenigi					●	0		
Micropodisma salamandra		●	●	●		0		
Micropodisma svanetica					●	0		
Mioscirtus wagneri			●		●	?		
Miramella albanica			●			0		
Miramella alpina		●		●	●	0		
Miramella carinthiaca				●		0		
Miramella demissa			●			0		
Miramella frinias		●				0		
Miramella irena		●	●	●	●	0		
Morphacris fasciata	●					1	5	12
Myrmeleotettix antennatus			●	●	●	2		OSF
Myrmeleotettix maculatus	●	●	●	●	●	2	57	191:41
Myrmeleotettix pallidus					●	2		
Nadigella formosanta		●		●		0		
Notostaurus albicornis					●	1		
Notostaurus anatolicus			●		●	1		
Ochrilidia gracilis					●	2		
Ochrilidia hebetata					●	2		

	Iberia	Italy & Malta	Balkan	C-N Europe	East Europe	Sound production	Number	Length
Ochrilidia nuragica		●				2		
Ochrilidia pruinosa			●			2	4	05:42
Ochrilidia sicula		●				2	6	67:47
Ochrilidia tibialis			●			2		
Odontopodisma acuminata					●	0		
Odontopodisma albanica			●			0		
Odontopodisma carpathica					●	0		
Odontopodisma decipiens		●	●	●	●	0		
Odontopodisma fallax		●	●			0		
Odontopodisma montana			●	●	●	0		
Odontopodisma rubripes				●	●	0		
Odontopodisma schmidtii		●	●	●		0		
Oedaleus decorus	●	●	●	●	●	2		
Oedaleus senegalensis	●	●				2		
Oedipoda aurea			●			1		
Oedipoda caerulescens	●	●	●	●	●	1	16	10:12
Oedipoda canariensis	●					1		
Oedipoda charpentieri	●			●		1		
Oedipoda coerulea	●			●		1		
Oedipoda cynthiae		●				1		
Oedipoda fuscocincta	●	●		●		1		
Oedipoda germanica	●	●		●		1	1	00:02
Oedipoda mauritanica		●				1		
Oedipoda meridionalis			●		●	1		
Oedipoda miniata			●		●	1		
Oedipoda pentagonalis		●				1		
Oedipoda schochii					●	1		
Oedipoda venusta			●			1		
Omocestus africanus		●				2	7	03:42
Omocestus antigai	●			●		2	65	96:46
Omocestus bolivari	●					2	42	19:31
Omocestus defauti				●		2	3	01:40
Omocestus femoralis	●					2	3	07:16
Omocestus haemorrhoidalis	●	●	●	●	●	2	40	61:53
Omocestus lopadusae		●				2	4	52:00
Omocestus minutissimus	●					2	10	56:16
Omocestus minutus			●	●	●	2	8	09:39
Omocestus panteli	●					2	15	48:44
Omocestus petraeus	●	●	●	●	●	2	15	68:26
Omocestus raymondi	●	●	●	●		2	51	54:28
Omocestus rufipes	●	●	●	●	●	2	56	139:53
Omocestus simonyi	●					2		
Omocestus uhagonii	●					2	10	07:53
Omocestus uvarovi		●				2	3	16:04
Omocestus viridulus	●	●	●	●	●	2	84	291:39
Oropodisma chelmosi			●			0		
Oropodisma erymanthosi			●			0		
Oropodisma karavica			●			0		
Oropodisma kylinii			●			1		
Oropodisma lagrecai			●			0		
Oropodisma macedonica			●			0		

	Iberia	Italy & Malta	Balkan	C-N Europe	East Europe	Sound production	Number	Length
Oropodisma parnassica			●			0		
Oropodisma taygetosi			●			0		
Oropodisma tymphrestosi			●			0		
Oropodisma willemsei			●			0		
Pachypodisma crassa					●	0		
Pachypodisma lezgina					●	0		
Paracaloptenus bolivari	●			●		0		
Paracaloptenus caloptenoides			●	●	●	0		
Paracaloptenus cristatus			●			0		
Paracinema tricolor	●	●	●	●	●	?		
Peripodisma ceraunii			●			0		
Peripodisma llofizii			●			0		
Peripodisma tymphii			●			0		
Pezotettix anatolica			●			0		
Pezotettix cypria			●			0		
Pezotettix giornae	●	●	●	●	●	0		
Pezotettix lagoi			●			0		
Phlocerus savenkoae					●	?		
Phlocerus svaneticus					●	?		
Phlocerus zaitzevi					●	?		
Platypygius crassus			●		●	0		
Platypygius platypygius	●	●				0		
Podisma amedegnatoae				●		0		
Podisma cantabricae	●					0		
Podisma carpetana	●					0		
Podisma dechambrei		●		●		0		
Podisma eitschbergeri		●				0		
Podisma emiliae		●				0		
Podisma goidanichi		●				0		
Podisma magdalenae		●				0		
Podisma miramae					●	0		
Podisma pedestris	●	●	●	●	●	0		
Podisma ruffoi		●				0		
Podisma satunini					●	0		
Podisma silvestrii		●				0		
Podisma teberdina					●	0		
Podisma uvarovi					●	0		
Podismopsis frontalis					●	2		
Podismopsis keisti				●		2	2	04:57
Podismopsis poppiusi					●	2		
Podismopsis relicta			●			2		OSF
Podismopsis styriaca				●		2		
Podismopsis transsylvanica					●	2		
Pseudoceles obscurus					●	?		
Pseudoceles oedipodioides					●	?		
Pseudochorthippus montanus	●	●		●	●	2	18	97:02
Pseudochorthippus parallelus	●	●	●	●	●	2	236	397:17
Pseudochorthippus smardai				●		2		
Pseudopodisma fieberi		●	●	●	●	0		
Pseudopodisma nagyi				●		0		
Pseudopodisma transilvanica				●	●	0		

	Iberia	Italy & Malta	Balkan	C-N Europe	East Europe	Sound production	Number	Length
Pseudoprumna baldensis		●				0		
Psophus stridulus	●	●	●	●	●	2	20	13:56
Ptygippus brachypterus					●	?		
Pyrgodera armata					●	1		
Ramburiella bolivari					●	2	1	00:10
Ramburiella foveolata					●	2		
Ramburiella hispanica	●			●		2	16	13:11
Ramburiella turcomana		●	●		●	2	3	05:26
Rammeihippus dinaricus			●			2		
Schistocerca gregaria	●	●	●	●		0		
Scintharista notabilis	●					1	1	00:19
Sphingoderus carinatus			●		●	1		
Sphingonotus almeriense	●					0?		
Sphingonotus azurescens	●					0?		
Sphingonotus caerulans	●	●	●	●	●	0?	8	12:26
Sphingonotus candidus		●				0?	4	05:42
Sphingonotus coerulipes					●	0?		
Sphingonotus corsicus		●		●		0?	5	02:31
Sphingonotus crivellarii						0?		
Sphingonotus eurasius		●	●		●	0?		
Sphingonotus fuerteventurae	●					0?		
Sphingonotus guanchus	●					0?		
Sphingonotus gypsicola	●					0?		
Sphingonotus halocnemi					●	0?		
Sphingonotus halophilus					●	0?		
Sphingonotus imitans	●					0?		
Sphingonotus lluciapomaresi	●					0?		
Sphingonotus lusitanicus	●					0?		
Sphingonotus morini	●					0		
Sphingonotus nebulosus					●	0?		
Sphingonotus nodulosus	●					0?		
Sphingonotus obscuratus		●			●	0?		
Sphingonotus octofasciatus	●				●	0?		
Sphingonotus pachecoi	●					0		
Sphingonotus personatus		●	●			0?		
Sphingonotus picteti	●					0		
Sphingonotus rubescens	●	●	●	●	●	0?	6	05:01
Sphingonotus rugosus	●					0?		
Sphingonotus salinus					●	0?		
Sphingonotus satrapes					●	0?		
Sphingonotus savignyi	●				●	0?	1	00:21
Sphingonotus sublaevis	●					0?		
Sphingonotus uvarovi		●		●		0?		
Sphingonotus willemsei	●					0?		
Stauroderus scalaris	●	●	●	●	●	2	84	161:43
Stenobothrus apenninus		●				2	1	07:33
Stenobothrus bolivarii	●					2	12	135:23
Stenobothrus carbonarius					●	2		
Stenobothrus clavatus			●			2	4	59:41
Stenobothrus cotticus		●	●	●		2	4	02:13
Stenobothrus crassipes			●	●	●	2		

	Iberia	Italy & Malta	Balkan	C-N Europe	East Europe	Sound production	Number	Length
Stenobothrus croaticus			●			2		OSF
Stenobothrus eurasius			●	●	●	2	3	10:03
Stenobothrus festivus	●			●		2	27	19:28
Stenobothrus fischeri	●	●	●	●	●	2	18	06:08
Stenobothrus graecus			●			2	5	07:01
Stenobothrus grammicus	●			●		2	12	16:07
Stenobothrus lineatus	●	●	●	●	●	2	82	160:47
Stenobothrus miramae					●	2		
Stenobothrus mistshenkoi					●	2		
Stenobothrus nigromaculatus	●	●	●	●	●	2	46	56:15
Stenobothrus posthumus			●			2		
Stenobothrus rubicundulus		●	●	●	●	2	42	80:54
Stenobothrus stigmaticus	●	●	●	●	●	2	78	103:15
Stenobothrus sviridenkoi					●	2		
Stenobothrus ursulae		●				2		
Stenobothrus werneri					●	2		
Stenohippus mundus	●					2		
Stethophyma grossum	●	●	●	●	●	2	39	49:00
Tropidopola cylindrica	●	●		●		1	1	02:47
Tropidopola graeca		●	●			1		
Tropidopola longicornis			●			1		
Tropidopola turanica					●	1		
Truxalis eximia			●		●	0		
Truxalis nasuta	●	●	●		●	0		
Truxalis robusta					●	0		
Xerohippus azami			●			2		
Xerohippus cyprius			●			2		
Xerohippus occidentalis	●					2	17	68:36
Xerohippus sinuosus			●			2		
Xerohippus solerii			●			2		
Zubovskya banatica					●	0		
ACRIDOIDEA Dericorythidae								
Dericorys carthagonovae	●					0		
Dericorys lobata	●					0		
Dericorys minutus	●					0		
Dericorys tibialis					●	0		
Dericorys uvarovi					●	0		
ACRIDOIDEA Pamphagidae								
Acinipe calabra		●				1		
Acinipe comptei	●					1		
Acinipe deceptoria	●					1		
Acinipe eulaliae	●					1		
Acinipe galvagnii		●				1		
Acinipe hesperica	●					1		
Acinipe ignatii	●					1		
Acinipe mabillei	●					1		
Acinipe paulinoi	●					1		
Acinipe perisi	●					1		
Acinipe segurensis	●					1		
Acinipe tibialis	●					1		

	Iberia	Italy & Malta	Balkan	C-N Europe	East Europe	Sound production	Number	Length
Acrostira bellamyi	●					1		
Acrostira euphorbiae	●					1		
Acrostira tamarani	●					1		
Acrostira tenerifae	●					1		
Asiotmethis limbatus			●			1		
Asiotmethis muricatus					●	1		
Asiotmethis tauricus					●	1		
Asiotmethis turritus					●	1		
Atrichotmethis semenovi					●	1		
Eremopeza festiva					●	1		
Eumigus ayresi	●					?		
Eumigus cucullatus	●					?		
Eumigus monticola	●					?		
Eumigus punctatus	●					?		
Eumigus rubioi	●					?		
Eunothrotes derjugini					●	?		
Euryparyphes bolivarii	●					1		
Euryparyphes terrulentus	●					1		
Glyphanus obtusus			●			1		
Glyphotmethis heldreichi			●			1		
Kurtharzia nugatoria	●					?		
Kurtharzia sulcata	●					?		
Nocaracris bulgaricus			●			?		
Nocaracris curtus					●	?		
Nocaracris cyanipes					●	?		
Nocaracris granosus					●	?		
Nocaracris istanbul			●			?		
Nocaracris latipes					●	?		
Nocaracris rimansonae					●	?		
Nocaracris rubripes					●	?		
Nocarodes daghestanicus					●	?		
Nocarodes geniculatus					●	?		
Nocarodes serricollis					●	?		
Ochnerodes brunneri	●					?		
Ochnerodes fallaciosus	●					?		
Ochnerodes prosternalis	●					?		
Ochnerodes soleri	●					?		
Ocneridia nigropunctata		●				?		
Orchamus gracilis			●			?		
Orchamus kaltenbachi			●			?		
Orchamus raulini			●			?		
Orchamus yersini			●			?		
Pamphagus marmoratus		●				1		
Pamphagus ortolaniae		●				1		
Pamphagus sardeus		●				1	1	03
Paranocarodes chopardi			●			?		
Paranocarodes fieberi			●			?		
Paranocarodes straubei			●			?		
Paranothrotes margaritae					●	?		
Prionotropis ancosae	●					1		
Prionotropis appula		●				1	8	04:03

	Iberia	Italy & Malta	Balkan	C-N Europe	East Europe	Sound production	Number	Length
Prionotropis azami				•		1		
Prionotropis flexuosa	•					1	1	02:11
Prionotropis hystrix		•	•			1		
Prionotropis rhodanica				•		1		
Prionotropis willemsorum			•			1		
Prionotropis xausi	•					1		
Purpuraria erna	•					1		OSF
Purpuraria magna	•					1		OSF
ACRIDOIDEA Pyrgomorphidae								
Pyrgomorpha bispinosa					•	0		
Pyrgomorpha cognata			•			0		
Pyrgomorpha conica	•	•	•	•		0		
Pyrgomorpha cypria			•			0		
Pyrgomorpha guentheri					•	0		
Pyrgomorphula serbica			•			0		

Discussion

In a relatively short period of time, Xeno-canto has become a valuable source of information on the sounds of European grasshoppers. Recordings of 556 of the 802 (69%) European species producing sound meaningful for identification and inventory are already available on Xeno-canto with one or more recordings and in most areas of Europe the vast majority of the commonly encountered species is represented on Xeno-canto. This has only been made possible due to the willingness of people to share recordings.

In the bird community, AI-based sound recognition is already an established means of identification and many bird watchers throughout the world already use apps like BirdNET and Merlin for help with the identification of sounds. Naturalis Biodiversity Center (Leiden, Netherlands) is working on sound recognition models for European grasshoppers, and a first version will be available in 2025. The underlying algorithm will be published open access as part of the EU Horizon project TETTRIs. In order to include a species in these models at least five recordings of a species are needed. Because of this 87 species with recordings currently cannot yet be included in the models. As a result, with the current availability of recordings 468 of the 802 (58%) European species making sound meaningful for identification can be included. It is expected that in the next few years many new recordings will become available so that the percentage of species included in the models will increase with each published update. The influx of additional recordings will also improve the sound recognition quality of the model over time.

Table 2: Availability of sound recordings per country. * The data for Russia and Turkey also includes recordings from the Asian part of the countries.

Country	Number recordings	hours/minutes/seconds
Albania	857	10:25:10
Andorra	79	01:14:29
Austria	189	04:51:39
Belarus	0	00:00:00
Belgium	43	56:26:00
Bosnia Herzegovina	1	00:00:22
Bulgaria	735	25:34:36
Croatia	174	06:21:58
Cyprus	103	07:03:53
Czech Republic	5	00:03:46
Denmark	3	00:06:06
Estonia	0	00:00:00
Finland	0	00:00:00
France	5439	95:06:15
Georgia	58	01:19:11
Germany	1195	40:59:40
Greece	5437	121:33:32
Hungary	25	02:56:35
Iceland	0	00:00:00
Ireland	0	00:00:00
Italy	3407	120:15:09
Kosovo	19	00:03:46
Latvia	8	00:02:49
Liechtenstein	0	00:00:00
Lithuania	2	00:00:56
Luxembourg	0	00:00:00
Macedonia	287	06:10:10
Malta	12	00:02:47
Moldova	0	00:00:00
Monaco	0	00:00:00
Montenegro	0	00:00:00
Netherlands	2770	100:37:17
Norway	2	00:03:41
Poland	55	39:18:00
Portugal	297	13:33:50
Romania	259	22:42:20
Russian Federation	401	05:32:39
San Marino	0	00:00:00
Serbia	187	07:32:32
Slovakia	7	00:05:02
Slovenia	195	02:18:07
Spain	4003	92:46:17
Sweden	34	00:21:23
Switzerland	268	12:37:17
Turkey	583	11:36:49
Ukraine	154	03:04:30
United Kingdom	70	50:08:00

In addition to serving as identification tools for specialists and citizen scientists the sound recognition model will also be used for monitoring. Xeno-canto also contains sound libraries for bats, amphibians and land mammals, and the long-term aim is to make sound recognition that can analyze soundscapes. When successful, this can be applied for transect monitoring in which repeated sound recordings across a transect are used to monitor changes in birds, mammals, amphibians and grasshoppers. A first demonstration of the possibilities for this for Orthoptera was published by Bennett et al (2025) who showed that 86.4 % of the sound recordings of a set of 20 species were identified correctly. Applying these methods is especially valuable in areas where citizen scientists are scarce or in areas that are less attractive to monitor such as large-scale agricultural areas. Sharing recordings on Xeno-canto thus makes it possible to allow others to enjoy the audio diversity of nature and to help develop new methods to monitor biodiversity.

Table 3: Taxonomic coverage of recordings on Xeno-canto in the main European regions.

	Europe	Iberia & Canaries	Italy & Malta	Balkan & Cyprus	C & N Europe	E Europe
Total number of species	1232	413	355	558	315	382
Number of species in category 2	802	256	230	374	218	252
Number of category 2 species for which recordings are available	556	190	194	302	192	168
% of category-2 species for which recordings are available	69.3%	74.2%	84.3%	80.7%	88.0%	66.7%

Table 4: Diversity of the 14 families of Orthoptera found in Europe with percentage of species producing sound meaningful for identification or inventory.

Family	Europe	Species in cat 2	% species in cat 2
Acrididae	368	176	47.8
Dericorythidae	5	0	0.0
Gryllidae	73	33	45.2
Gryllotalpidae	14	14	100.0
Mogoplistidae	11	1	9.1
Myrmecophilidae	11	0	0.0
Oecanthidae	3	3	100.0
Pamphagidae	71	0	0.0
Pyrgomorphidae	6	0	0.0
Rhaphidophoridae	70	0	0.0
Tetrigidae	14	0	0.0
Tettigonidae	572	569	99.5
Tridactylidae	6	0	0.0
Trigonodiidae	8	6	75.0

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