

CHECKLIST OF THE MESOSTIGMATIC MITES OF THE NETHERLANDS

(ACARI: MESOSTIGMATA)

Henk Siepel, Herman Cremers, Wim Dimmers, Antoon Loomans & Bert Vierbergen

Most of the predatory mites belong to the order Mesostigmata, although not all mesostigmatic mites are predators. Quite a number of species are parasites and some feed on fungal material. Mesostigmata occur in a wide variety of habitats. Agricultural areas have been sampled extensively in the Netherlands, both on soil dwelling as well as on vegetation dwelling species. A number of more natural habitats are undersampled and more species for the Netherlands may be expected there. The current checklist contains 458 species, which are listed with their synonyms and occurrence records for the country. Some mesostigmatid mites are used in biological control and an additional table with native and non-native species admitted for this use is presented.

INTRODUCTION

Mesostigmata are usually called predatory mites. They form the most numerous order of mites in the superorder Parasitiformes. In this superorder we can also find the ticks (order Ixodida) and two orders that do not occur in the Netherlands (Opilioacarida in the tropics and Holothyrida on islands in the Pacific). Mesostigmata live in a wide variety of habitats, however, the very vast majority of the species is free-living in soil, among the vegetation or even in houses.

Next to a predatory behaviour, many species live in the nests of mammals or are parasitic on mammals. A more restricted number of species is specialized on bats (Spinturnicidae and some Macronyssidae), grey seal, walrus and California sea lion (Halarachnidae). Among the Mesostigmata, also parasites can be found on reptiles (*Entonyssus squamatus* Fain, Kutzer & Fordinal, 1983, and *Ophionyssus* species), birds (Rhinonyssidae, Macronyssidae: *Ornithonyssus sylviarum* (Canestrini & Fanzago, 1877) and Dermanyssidae: *Dermanyssus gallinae* (De Geer, 1778) and *D. hirundinis* (Hermann, 1904) and even in the brood of bees (*Varroa* species). The vertebrate parasites feed on the blood or body fluids of their hosts and for instance *Dermanyssus gallinae* can negatively affect

the condition of chickens and cause a serious pest in poultry husbandry. A few species are not predatory; some of the Uropodina are specialized in feeding on fungi. Species of *Trachytes* and *Uroseius* have been observed to feed on fungal material (Athias-Binche 1977, Hutu 1982). *Proctolaelaps pygmaeus* (Mueller, 1859) and *Androlaelaps casalis* (Berlese, 1887) feed on all kinds of material during development, including wheat germ, egg yolk, fresh meat and blood (Hughes 1976). However, in *Chiropturopoda bakeri* Zaher & Afifi, 1986 animal diet resulted in a better reproduction than fungal diet (Nawar et al. 1993). In the Phytoseiidae and in *Typhlodromus pyri* Scheuten, 1857 fungivory has been observed (Zemek & Prenerova 1997). Some phytoseiid mite species use plant food sources, possibly pollen (Wari et al. 2016).

In table 1 we give an overview of the higher categories in the systematics of Acari, with reference to the published checklists for the Netherlands. Here we present the first checklist of Mesostigmata of the Netherlands, containing 458 species. Former overviews (e.g. Siepel 2010) with estimated numbers per family added up to 315 mesostigmatid species for the country. More species can be expected as this group, as many other mite groups, is quite poorly sampled. However, in the national

Figure 1-25. Examples of mesostigmatid mites. Photos Henk Siepel (1-5, 7-9, 12), Herman Cremers (6, 18-21, 23-25) and Bert Vierbergen (10-11, 13-17, 22).

Figuur 1-25. Voorbeelden van mesostigmatid mijten. Fotos Henk Siepel (1-5, 7-9, 12), Herman Cremers (6, 18-21, 23-25) en Bert Vierbergen (10-11, 13-17, 22).



1. *Sejus togatus*.



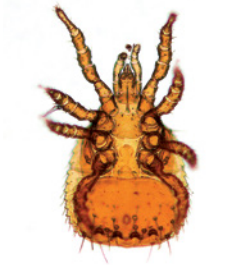
2. *Trachytes aegrota*.



3. *Dinychus perforatus*.



4. *Epicrius canestrinii*.



5. *Zercon triangularis*.



6. *Poecilochirus necrophori*, deutonymph.



7. *Veigaia planicola*.



8. *Dendrolaelaps nostricornutus*, male. Right: heteromorphic.



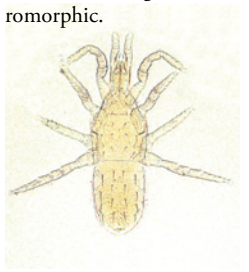
9. *Scarabaspis inexpectatus*.



10. *Macrocheles robustulus*.



11. *Iphidozercon gibbus*.



12. *Protogamasellus mica*.



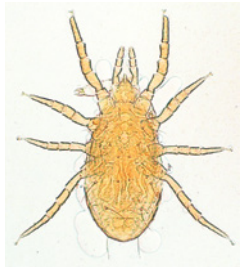
13. *Amblyseius herbicolus*.



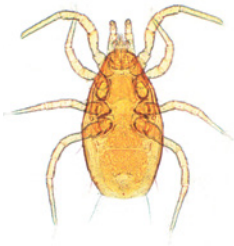
14. *Amblyseius obtusus*.



15. *Euseius gallicus*.



16. *Kampimodromus hmi-minai*.



17. *Propriozeiopsis okanagensis*.



18. *Dermanyssus gallinae*.



19. *Halarachne halichoeri*.



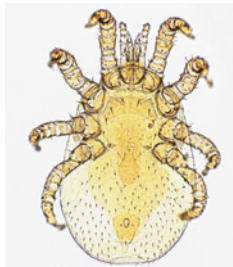
20. *Pneumonyssus oudemansi*, larva.



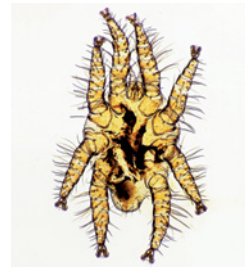
21. *Echinonyssus isabellinus*.



22. *Gaeolaelaps aculeifer*.



23. *Macronyssus flavus*.



24. *Spinturnix acuminatus*.



25. *Varroa destructor*.

Table 1. Classification of the higher categories of the subclass Acari (after Krantz & Walter 2009) and the checklists of those groups in the Netherlands. *Superfamily Halacaroida only, ** cohort Astigmatina.
 Tabel 1. Classificatie van de mijten (subklasse Acari) (naar Krantz & Walter 2009), met vermelding van checklists in Nederland. *Alleen superfamilie Halacaroida, ** cohort Astigmatina.

superorder Parasitiformes	
order Opilioacarida (not indigenous)	
order Holothyrida (not indigenous)	
order Ixodida	Van Bronswijk et al. (1979)
order Mesostigmata	This checklist
superorder Acariformes	
order Trombidiformes	
suborder Sphaerolichida	
suborder Prostigmata	
supercohort Labidostomatides	
supercohort Eupodides	Bartsch & Smit (2006)*
supercohort Anystides	
cohort Anystina	
cohort Parasitengonina	
subcohort Erythraiae	
subcohort Trombidiae	
subcohort Hydrachnidiae	Smit & Van der Hammen (2000)
subcohort Stygotrombiae	
supercohort Eleutherengonides	
cohort Raphignathina	
cohort Heterostigmata	
order Sarcoptiformes	
suborder Endeostigmata	In prep.
suborder Oribatida	Siepel et al. (2007), Siepel et al. 2016 **

soil biology monitoring program, soil samples have been extensively taken in grassland, arable land and forests. Phytoseiidae are quite extensively sampled by the National Plant Protection Organization. New species for the country are rather expected in poorly sampled biotopes as peatlands and mires, or in small biotope elements as compost heaps, epiphytes, mushrooms and various kinds of dung.

LIFE HISTORY

From the basic acarine life history, including a larva, protonymph, deutonymph, tritonymph and adult, Parasitiformes lack the tritonymph. Otherwise, they have an extra stage (called stases in acarology) in the egg: the prelarva, which indeed can be seen in the later egg stage. Such a hidden stase is called a calyptostase. Development of Mesostigmata can be very rapid: *Macrocheles muscaedomesticae* (Scopoli, 1772) (Macrochelidae) can complete its life cycle in three days (Wade & Rodriguez 1961) while most free-living species

have about one generation per year. Sometimes the way of life urges special adaptations: the parasitic mites on bats in the family Spinturnicidae have the development of eggs inside the body, up to ten embryos at a time, which come out as active immatures (Yastrebtsov 1992).

Species of the genera *Spinturnix* and *Eyndhovenia* are active in summer, while *Paraperiglischrus rhinolophinus* (C.L. Koch, 1844) is active in winter (Deunff & Beaucournu 1981). Phoresy, hitchhiking with other animals, is quite common among Mesostigmata. Most of the species of the Uropodina have special structures to fasten themselves to the host. Uropodids attach themselves to the host with a kind of glue stick, which give them their scientific name (oura is tail and pod is foot in Greek, so tail feet). Uropodids are only phoretic in the deutonymph stage. Many of the phoretic species are carrier specific, which means that attaching themselves to a specific host will result in transport to the same kind of environment. Many species are for instance phoretic on bark beetles, which transport them to a new tree of the same species. Lindquist (1975) described several forms of synchronization of phoretic and carrier, of which two forms will be mentioned here: one with a resting period and one with a race against time. *Dinogamasus braunsi* (Vitzthum, 1914) (Laelapidae) is phoretic on the carpenter bee *Xylocopa caffra* (Linnaeus, 1767) (Hymenoptera, Apidae). The mite undergoes an inactive post-phoretic period and female mites become active during the prepupal stage of the bee to feed on cuticular exudates. The deposited eggs develop during the pupal stage of the carrier to young female, which attach to the young bees and leave the nest (Skaife 1952). The race against time can be observed in above mentioned *Macrocheles muscaedomesticae*: the mites prey on eggs and first instar larvae of the housefly (before these are too big to handle; second instar maggots develop in two days) and attach to the young adult flies when they emerge (Wade & Rodriguez 1961).

Next to normal sexual reproduction some Mesostigmatids have thelytoky, asexual reproduction where females lay diploid unfertilized eggs. Examples among the Uropodina are *Trachytes aegrota* (C.L. Koch, 1841) and *Uropoda minima* Kramer, 1882 (Gulvik et al. 2007). The latter is also phoretic and consequently quite host-specific (Siepel 1994). Some *Cheiroseius* and *Lasioseius* species also have a thelytokous reproduction and some populations of *Zercoseius spathuliger* (Leonardi, 1899) (all Blattisociidae) (Walter & Lindquist 1989). Some Ascidae and Macrochelidae have another form of reproduction with a partial mix of genes: arrhenotoky, where females lay either fertilized diploid eggs, or unfertilized haploid eggs which develop to males (as in many Hymenoptera). Phytoseiidae have pseudarrhenotoky, wherein a large part of the male genome is lost after copulation (Hoy 1985). During mating, Mesostigmatids usually transfer the sperm with their chelicerae directly to the female genital opening, as spiders do with their pedipalps. Some species in the Mesostigmata are introduced into the Netherlands, either by importing their hosts (parasites) or because of their use in biological control, usually in greenhouses, but increasingly also in open cultures (Phytoseiidae).

SYSTEMATICS

Currently, the subclass Acari of the class Arachnida consist of two superorders Parasitiformes and Acariformes. The superorder Parasitiformes contains four orders: Opilioacarida, Holthyrida, Ixodida and Mesostigmata, of which only the latter two occur in the Netherlands. Mesostigmata are divided in three suborders: Sejida, Trigynaspida, each so far with only one species in the Netherlands, and Monogynaspida, containing all other predatory mites in the Netherlands. These species are distributed over two cohorts: the Uropodina and the Gamasina. In the higher classification (superfamilies and families) we follow Krantz & Walter (2009), who also provide a key to the families.

In the systematics of Mesostigmata we saw quite a lot of changes recently, even in the composition of superfamilies and families. Compared to Karg (1993) Ascoidea is more homogenized in transferring the genera *Cheiroseius*, *Platyseius* and *Plesioseius* (formerly Ascidae) to the upgraded family Blattisociidae, together with *Lasioseius* (from Podocinidae) and *Blattisocius*. *Melichares* and *Proctolaelaps* are transferred from the Ameroseiidae and form the family Melicharidae (Krantz & Walter 2009). We follow Masan (2017) in his extensive review of the family Ameroseiidae and follow Britto (2011) in the nomenclature of the species.

For the Uropodina we follow the classification of Karg (1989), just like Krantz & Walter (2009). In the 20th century numerous new species of Uropodids have been described, mainly from the tropics, likewise resulting in an increase of the number of genera and families to accommodate all the new species in the superfamily Uropodoidea. See Halliday (2015) for a list of genus names and their type species and Halliday (2016) for a list of family names with their type genera. Later revisions and newer insights decreased the number of genera in the Uropodina again. These activities, however, led for example to no less than 22 synonyms of the genus *Urobovella*. Important to mention here are the activities of W. Hirschmann, who based his grouping of species on the so-called 'Gangmerkmale', several characteristics of the hypostoma, as these characteristics are constant during development and make it possible to identify larvae, deutonymphs and adults of the same species. Unfortunately, these characters are often very hard to see in practice and Hirschmann did not get much followers. Nevertheless, it helped in reducing the number of higher taxa (Wisniewski & Hirschmann 1993). Halliday (2016) qualifies Nenteriidae as a nomen nudum. We however maintain this name, as including this group in the Trematuridae as in Karg (1989) is not tenable. According to us the original description of the genus *Nenteria* Oudemans, 1915 can qualify

as family characteristic. Hirschmann & Wiśniewski (1985) present descriptions of all genera in the family.

Also in the Parasitidae a firm reorganization of genera took place. An important change is the abolishment of the large genus *Lysigamasus* Karg, 1971. The species of this genus were distributed over *Pergamasus* and *Paragamasus*. Other important changes with respect to the major identification keys used are the identity of *Alliphis* species, the identity of *Varroa* species, the upgrade of subgenera in *Hypoaspis* (Laelapidae) to genera, the revision of the families Ameroseiidae and Phytoseiidae and the recent descriptions of cryptic species among bat parasites (Spinturnicidae). All these subjects will be briefly mentioned below.

Confusion on the identity of some *Alliphis* species (Eviphididae) has been cleared by Halliday (2008). *Alliphis siculus* (Oudemans, 1905), as mentioned in the commonly used identification keys of Karg (1971, 1993), is in reality *Alliphis halleri* (G. & R. Canestrini, 1881) and Karg incorrectly synonymized *A. halleri* with *A. siculus* in his keys. The differences are quite clear: especially the dorsal shield setae (S₃, S₄ and S₅) are about three times as long in *A. siculus* than in *A. halleri* (resp. 59.3, 51.4 and 56.7 versus 16.7, 17.0 and 16.9) and all other dorsal shield setae are significantly longer too in *A. siculus*. Examination of collected material from the Netherlands revealed that all stored specimens belong to *A. halleri*. Possibly *A. siculus* has indeed a restricted Mediterranean distribution on Sicily and maybe mainland Italy, whereas *A. halleri* is more widespread in Europe and even has been dragged around the world (Halliday 2008). *Thinoseius* has been transferred to the Eviphididae (from Laelaptidae). Halbert erected this genus for a female *T. berlese*, where the males were described (earlier in the paper) as *Lasioseius fucicola*. Based on page priority the valid name is *Thinoseius fucicola* (see Evans 1954).

Also in the Phytoseiidae there has been much confusion about the generic status. Worldwide this is the most species rich family, partly because of the importance of the species in biological control, which increased the attention to these species. A checklist of the species of the Netherlands was presented in order to investigate which non-native species released for biological control actually have settled in the country (Vierbergen & Loomans 2009). The number of recognized genera varied from eight to several dozens and many, also economically important, species have been transferred to other genera several times. In this checklist the number of synonyms adds up to eight in *Neoseiulus* and sixteen in *Typhlodromus*. Chant & McMurtry (1994, 2003a,b, 2004a,b, 2005a,b,c, 2006a,b) revised this family. In this checklist we follow this classification. We found one species that is considered a nomen dubium: *Typhlodromus vepallidus* (C.L. Koch, 1839), described as *Gamasus vepallidus* (Chant & Yoshida-Shaul 1987, De Moraes et al. 2004). Oudemans (1896, 1903) gives the following data: Sneek, I, VI, VII in lichen on the trunk and on the leaves of *Ulmus glabra*; Sneek, V on leaves of *Crataegus monogyna*; Utrecht, VI on leaves of *Ulmus glabra montana* and VII on leaves of *Viburnum lantana*; it is not clear which species is meant here.

Evans & Till (1979) revised the large family Laelapidae and upgraded most of the subgenera of *Hypoaspis* to the generic level. Beaulieu (2009) revised *Gaeolaelaps*, which was still a subgenus of *Hypoaspis* and upgraded it to the generic level. Berlese (1921) first used the name *Geolaelaps* (note other spelling), but did not give a proper definition (nomen nudum). Laelapids are ecologically a very diverse family, with a number of parasitic species (e.g. in the genera *Androlaelaps*, *Echinonyssus*, *Haemogamasus*, *Hyperlaelaps*, *Ichoronyssus*, *Laelaps* and *Ondatralelaps*) next to species found in nests of rodents or in soil (*Eulaelaps*) and free-living species in soil (e.g. *Hypoaspis* s.s., *Gaeolaelaps*, *Cosmolaelaps* and *Stratiolaelaps*).

The Dermanyssidae have been revised by Evans & Till (1966) and in the Macronyssidae the genus *Steatonyssus* has been studied by Till & Evans (1964). In the Spinturnicidae, Kolenati (1856, 1857) described a number of species, most of which can be recognized without any doubt. Some are doubtful, such as *Diplostaspis daubentonii* and *D. stellata*, both recorded from *Myotis daubentonii* (Kuhl, 1817) (Chiroptera, Vespertilionidae). Rudnick (1960) presents an extensive revision of the family. As the type material of the species described by Kolenati has been lost and the status of the species is questionable, Deunff (1977) re-described a species collected from *Myotis daubentonii* as *Spinturnix andegavinus*. The species currently has no synonyms, but if original type material of one of Kolenati's species will be rediscovered one of these might have priority. Later Deunff et al. (2004) reasoned that parasitic species may switch between hosts, as different bat species share winter or summer roosts. On the other hand, bat species that do not share roosts may have cryptic parasitic species, a hypothesis he could prove with the description of *Spinturnix bechsteini* Deunff, Walter, Bellido & Volleth, 2004, a cryptic species found on *Myotis bechsteini* (Kuhl, 1817) only. A checklist of the species associated with bats in Britain is presented by Baker & Craven (2003).

Varroa jacobsoni Oudemans, 1904 was described from material collected in Java from *Apis cerana* Fabricius, 1793 (Hymenoptera, Apidae) and the genus *Varroa* (Varroidae) was erected to accommodate this species. However, a molecular analysis showed eighteen haplotypes within this species (Anderson & Trueman 2000). Nine of these are from Java and one of these refers to the original *V. jacobsoni*, so these nine haplotypes are classified as *V. jacobsoni*. Six other haplotypes from mainland Asia appear to be a separate species and are named *V. destructor* Anderson & Trueman, 2000, while three haplotypes from the Philippines require further study. Material from the Netherlands appears to belong to the newly described *V. destructor*. Females of this species are significantly larger and less spherical than *V. jacobsoni*.

Table 2. Mesostigmata admitted for commercial use in the Netherlands (Van Dam 2016). *Release permitted with an exemption.

Tabel 2. Mesostigmata die in Nederland toegestaan zijn voor commercieel gebruik (Van Dam 2016). *Vrijstelling nodig voor gebruik.

Laelapidae

<i>Androlaelaps casalis</i> (Berlese, 1887)	non-native
<i>Gaeolaelaps aculeifer</i> (Canestrini, 1884)	native
<i>Stratiolaelaps scimitus</i> (Womersley, 1956)	non-native

Macrochelidae

<i>Macrocheles robustulus</i> (Berlese, 1904)	non-native
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Parasitidae

<i>Pergamasus quisquiliarum</i> (Canestrini, 1882)	native
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Phytoseiidae

<i>Amblydromalus limonicus</i> (Garman & McGregor, 1956)	non-native
<i>Amblyseius andersoni</i> (Chant, 1957)	native
<i>Amblyseius largoensis</i> (Muma, 1955)	non-native
<i>Euseius finlandicus</i> (Oudemans, 1915)	native
<i>Euseius gallicus</i> (Kreiter & Tixier, 2010)	non-native
<i>Euseius ovalis</i> (Evans 1953)	non-native
<i>Euseius scutalis</i> (Athias-Henriot, 1958)	non-native
<i>Galendromus occidentalis</i> (Nesbitt, 1951)	non-native
<i>Iphiseius degenerans</i> (Berlese, 1889)	non-native
<i>Neoseiulus barkeri</i> (Hughes, 1948)	native
<i>Neoseiulus californicus</i> (McGregor, 1954)	non-native
<i>Neoseiulus cucumeris</i> (Oudemans, 1930)	native
<i>Neoseiulus fallacis</i> (Garman, 1948)	non-native
<i>Phytoseiulus longipes</i> (Evans, 1958)	non-native
<i>Phytoseiulus macropilis</i> (Banks, 1904)*	non-native
<i>Phytoseiulus persimilis</i> Athias-Henriot, 1957	non-native
<i>Phytoseius finitimus</i> Ribaga, 1904	non-native
<i>Proprioseiopsis athiasae</i> (Hirschmann, 1962)	non-native
<i>Transeius montdorensis</i> (Schicha, 1979)	non-native
<i>Typhlodromips swirskii</i> (Athias-Henriot, 1962)	non-native
<i>Typhlodromus doreanae</i> (Schicha, 1987)	non-native
<i>Typhlodromus pyri</i> Scheuten, 1857	native

BIOLOGICAL CONTROL

In 1967 the first successful acarine biological control agent, *Phytoseiulus persimilis* Athias-Henriot, 1957, was commercially introduced in Dutch glasshouses to control the spider mite *Tetranychus urticae* C.L. Koch, 1836. Since then mass rearing of various species of native or non-native origin resulted in an extremely high number of predatory mites that have been released. In Table 2 an overview of species is given of predatory mite species, that, after a risk assessment of their impact, can be released in the Netherlands, either by derogation or registered as exempted under the Dutch Nature Protection Act ('Wet natuurbescherming'). Geographical races of native species are included in the procedure for admittance in commercial usage. It is clear that several of the non-native species mentioned in table 2 can be found quite commonly in plant cultures and some can become established.

ABOUT THE CHECKLIST

The checklist is ordered systematically and for every species the first stored specimens and locations are given in the collections of Naturalis, of the authors (Cremers or HS), followed by records of Alterra, now Wageningen Environmental Research (ALT) and the former Plant Protection Service, now Netherlands Plant Protection Organization (NPPO) and records from bat surveys from the database of Aleksandra Krawczyk (AK) and sightings of Douwe van der Ploeg (DvdP). After the records the collection or database is mentioned in bold. All parasitic specimens in all collections have been checked by Cremers, including the sent in material from bat species. Phoretic mites found on beetles from the Kaaistoep (Tilburg) have been identified by Daria Baierlein. All records of ALT have been identified by respectively Chris van de Bund (†), Henk Siepel and Wim Dimmers and most species have been checked by Henk Siepel. NPPO collection specimens have been identified respectively by Chris van de Bund (†) and Bert Vierbergen, Henk Siepel re-examined a few doubtful specimen. Species with an asterisk (*) are known in the Netherlands only from introductions or zoo animals.

CHECKLIST

Class ARACHNIDA

Subclass ACARI

Order MESOSTIGMATA

Suborder SEJIDA

Superfamily SEJOIDEA

Family SEJIDAE

Sejus C.L. Koch, 1836

- 1 **togatus** C.L. Koch, 1836 (fig. 1)
Beekbergen, Lierderholt, 13.II.2013, dood hout
Pinus, in col. HS.

Suborder TRIGYNASPIDA

Superfamily CELAENOPSOIDEA

Family CELAENOPSIDAE

Celaenopsis Berlese, 1886

- 2 **badius** (C.L. Koch, 1839)
Gamasus badius
Gamasus cuspidatus Kramer, 1876
Arnhem, col. Oudemans in col. Naturalis
(Buitendijk 1945).

Suborder MONOGYNASPIDA

Cohort UROPODINA

Superfamily PROTODINYOCHOIDEA

Family PROTODINYCHIDAE

Protodinychus Evans, 1957

- 3 **punctatus** Evans, 1957
Bennekom, Bovenbuurt, 20.XI.1984, soil sample
light fertilized grasslands; Idem, 20.V.1985,
22.II.2000; Soerendonk, Cranendonk, 15.V.1991,
abandoned agricultural land, soil sample; Anloo,
Drentse Aa, 14.X.1992, light fertilized moist grass-
land, soil sample; Bennekom, Bovenbuurt,
23.V.2000, soil sample grassland, sandy soil;
Tilburg, Vloelvelden, 15.V.2000, soil sample
grassland sewage farm; Denekamp, 12.V.2000;
Schalkhaar, 19.V.2000; Voorthuizen, 20.VI.2000,
soil sample grassland, sandy soil; Bennekom,
Bovenbuurt, 23.IV.2001, soil sample arable land

on sandy soil; Langenholte, 21.IV.2004; Aalten,
Aaltense Goor, 6.V.2004; Diever, Oude Willem,
26.V.2004; Papenvoort, 28.VI.2004; Nispen,
Hopmeerweg, 17.VI.2004, soil samples, semi-
natural grassland sandy soil; records ALT.

Superfamily POLYASPIDOIDEA

Family POLYASPIDIDAE

Uroseius Berlese, 1888

- Apionoseius* Berlese, 1905
Pholeogynium Johnston, 1961
Urosepis Trägårdh, 1904
- 4 **cylindricus** (Berlese, 1916)
Polyaspinus cylindricus
Hoog Soeren, *Quercus robur* forest, 1.IX.1988,
litterbag with faeces of red deer *Cervus elaphus*
Linnaeus, 1758, 15.VI.1989; Ugchelen, Ugchelense
bos, soil and litter, 3.V.1994 in col. HS; Hoog
Soeren, forest *Quercus robur*, litterbag with
Deschampsia flexuosa, 15.VI.1989, 7.VII.1989,
8.IX.1989, 8.XII.1989, 8.III.1990, 8.VI.1990,
8.IX.1990, 12.XII.1990, 8.III.1991; Hoog Soeren,
forest *Quercus robur*, litterbag with faeces of red
deer *Cervus elaphus* Linnaeus, 1758, 15.VI.1989,
7.VII.1989, 8.IX.1989, 8.XII.1989, 8.III.1990,
8.VI.1990, 8.IX.1990, 12.XII.1990, 8.III.1991; Hoog
Soeren 9.XII.1991, forest *Quercus robur*, soil sample;
Loenen, old beech forest, 3.V.1994, soil sample;
Ugchelen, old beech forest, 3.V.1994, soil sample;
Epe, 22.IX.1997, old hedgerow, soil sample;
Klarenbeek, 22.IX.1997, old hedgerow, soil sample;
Soerendonk, Buulderbroek, 26.VI.2000; Hilver-
sum, Boswachterij De Vuursche, 3.V.2000;
Rheeze, Diffelerveld, 26.V.2000; Leusden, Leusder-
heide, 2.V.2000; Spier, Lheebroekerzand, 25.IV.2000;
Breda, Mastbos, 27.VI.2000, 27.X.2007; Kootwijk,
De Schotkamp, 8.V.2000; Doorwerth, 23.VI.2007,
forest on sandy soil; records ALT; Bunde, V.1967,
in litter *Stellario-Carpinetum* under *Corylus*
avellana with *Allium ursinum*, *Oxalis* sp.,
Convallaria and *Lamium galeobdolon*, in col. NPPO.
- 5 **hunzikeri** Schweizer, 1922
Bennekom, VI.1968 in chicken manure, in col.
NPPO.

Family TRACHYTIDAE

Trachytes Michael, 1894

- 6 **aegrota** (C.L. Koch, 1841) (fig. 2)
Celaeno aegrota
Trachynotus pyriformis Kramer, 1876
Haarlem, Overveen, Bergen op Zoom, De Steeg col. Oudemans in col. Naturalis (Buitendijk 1945); Epe, soil hedgerow, 22.IX.1997; Hoog Soeren, soil *Quercus robur* forest, 1.IX.1988 and in litterbag with faeces of red deer (*Cervus elaphus* Linnaeus, 1758), 22.II.1989, in col. HS; Deelerwoud 20.V.1985, Imbos 20.XI.1984 and 20.V.1985 soil samples unfertilized grassland; Hoog Soeren, forest *Quercus robur*, litterbag with *Deschampsia flexuosa*, 22.V.1989, 7.VII.1989, 8.IX.1989, 8.XII.1989, 8.III.1990, 8.VI.1990, 8.IX.1990, 12.XII.1990, 8.III.1991; Hoog Soeren, forest *Quercus robur*, litterbag with faeces of red deer (*Cervus elaphus* Linnaeus, 1758), 22.V.1989, 15.VI.1989, 7.VII.1989, 8.IX.1989, 8.XII.1989, 8.III.1990, 8.VI.1990, 8.IX.1990, 12.XII.1990, 8.III.1991; Hoog Soeren 9.XII.1991, forest *Quercus robur*, soil sample; Anloo, Drentse Aa 14.X.1992 light fertilized moist grassland soil sample; Epe 22.IX.1997 old hedgerow soil sample; Klarenbeek 22.IX.1997 old hedgerow soil sample; Aperlo 25.IX.1997 old hedgerow soil sample; Elspeet 25.IX.1997 old hedgerow soil sample; Harskamp 25.IX.1997 old hedgerow soil sample; Woudenberg 25.IX.1997 old hedgerow soil sample; records ALT. Slenaken, Grote Bos 5.X.2015, moss under *Fraxinus excelsior* HS. Drunen, Fellenoord (51°66N 5°13E), 24.II.2017 *Dryopteris dilatata* (frond), in col. Nppo. Common and frequent species in forest soils.
- 7 **pauperior** Berlese, 1914
Rykholt, Savelsbos, moss on decaying log of *Prunus avium*, 21.IV.1994, in col. HS; Hoenderloo old beech forest 3.V.1994 soil sample; Ugchelen old beech forest 3.V.1994 soil sample; records ALT. Slenaken, Grote Bos moss under *Fraxinus excelsior*, 5.X.2015. Bunde, v.1967 *Stellario-Carpinetum* litter under *Vinca minor* and *Hedera helix*, in col. Nppo.

Superfamily UROPODOIDEA

Family URODIASPIDIDAE

Urodiaspis Berlese, 1916

- 8 **tecta** (Kramer, 1876)
Uropoda tecta
Haarlem, Sneek, in col. Oudemans in col. Naturalis (Buitendijk 1945); Twello, soil hedgerow, 22.IX.1997; Ugchelen, Ugchelense bos, soil and litter, 3.V.1994 in col. HS. Ugchelen, old beech forest, 3.V.1994, soil sample; records ALT. Bunde, v.1967, litter *Stellario-Carpinetum* under *Vinca minor* and *Hedera helix*, in col. Nppo.

Family DINYCHIDAE

Dinychus Kramer, 1882

- Phyllodinychus* Trägårdh, 1943
Septentrionalidinychus Hirschmann, 1984
Woelkeidinychus Hirschmann, 1984
- 9 **arcuatus** Trägårdh, 1943
Phyllodinychus arcuatus
Anloo, Drentse Aa, 14.X.1992, light fertilized moist grassland, soil sample; records ALT
- 10 **bincheaecarinatus** Hirschmann & Wagrowska-Asamczyk & Zirngiebl-Nicol, 1984
Beekbergen, Nieuw Dennenlust, 19.VIII.2017, in compostheap, in col. HS.
- 11 **inermis** (C.L. Koch, 1839)
Sejus inermis
Dinychus varthismithii Hüll, 1936
Amsterdam, col. Oudemans in col. Naturalis (Buitendijk 1945); Akmarijp, 11.X.1966, fen meadow (*Cirsio dissecti-Molinietum*) under *Caltha palustris*, in col. Nppo.
- 12 **perforatus** Kramer, 1882 (fig. 3)
's Gravenhage, Haarlem, Amsterdam, Gulpen in col. Oudemans in col. Naturalis (Buitendijk 1945); Twello, soil hedgerow, 22.IX.1997, Harskamp, soil hedgerow, 25.IX.1997, in col. HS. Beutenaken, along brook Gulp, litter and moss under *Fraxinus excelsior*, 9.X.2015. Reeuwijk, 8.IV.2003; Purmerend, 28.IV.2010; Gouda, 20.IV.2010; Achttienhoven, 27.IV.2010, all soil

samples grassland on peat soil; Surhuisterveen, 2.VI.2004, soil sample grassland loamy sand; records ALT. Bunde, v.1967, litter *Stellario-Carpinetum* under *Vinca minor* and *Hedera helix*, in col. NPPO.

13 undulatus Sellnick, 1945

Akmarijp, 11.X.1966, fen meadow (*Cirsio dissecti-Molinietum*) under *Caltha palustris*, in col. NPPO.

14 woelkei Hirschmann & Zirngiebl-Nicol, 1969

Woelkeidinychus woelkei (Hirschmann & Zirngiebl-Nicol, 1969)

Anloo, Drentse Aa, 14.X.1992, light fertilized moist grassland, soil sample; Amsterdam, 25.III.2003, soil samples grassland on peat soil; records ALT.

Leiodinychus Berlese, 1918

15 krameri (G. & R. Canestrini, 1882)

Notaspis krameri

Tecturopoda krameri

Westdongeradeel, Beerta, 's Grevelduin-Kapelle, Haarlemmermeer col. Oudemans in col. Naturalis (Buitendijk 1945).

Family NENTERIIDAE

Ruhmneria Hirschmann, 1979

16 breviunguiculata (Willmann, 1949)

Pseuduropoda breviunguiculata

Nenteria breviunguiculata

Tilburg, de Kaaistoep, found phoretic on several beetles: *Philonthus quisquiliaris* (Gyllenhal, 1810) (Staphylinidae) and *Atomaria lewisi* Reitter, 1877 (Cryptophagidae) (pers. comm. Paul van Wielink, identification by Daria Baierlein). Numansdorp, 6.V.2013, soil sample arable land on marine clay soil; Goingarip, 8.V.2013; Kwadijk, 2.V.2013; Hobrede, 2.V.2013, all soil sample grassland on peat soil; Udenhout, 7.IV.2014, soil sample grassland on sandy soil; Burgwerd, 29.IV.2014, Wiuwert, 29.IV.2014; Baaium, 29.IV.2014, soil sample grassland on marine clay soil; records ALT. Lienden, 3.VII till 19.VIII.1975, in burried filterpaper package with oat flour (in Heijbroek & Van de Bund

1982 misidentified as *Nenteria elimata* Berlese, 1917), col. NPPO.

Family TRACHYUROPODIDAE

Trachyropoda Berlese, 1888

Cephalojanetia Willmann, 1951

Leonardiella Berlese, 1904

Michaeliella Berlese, 1904

Urotachytes Berlese, 1905

17 coccinea (Michael, 1891)

Uropoda coccinea

Nunspeet, col. Oudemans in col. Naturalis (Buitendijk 1945).

18 formicaria (Lubbock, 1881)

Uropoda formicaria

Urotachys formicaria (Lubbock, 1881)

't Rooth, Het Hoefijzer, 2.VI.2010, soil sample calcareous grassland; records ALT.

19 willmanni Hirschmann & Zirngiebl-Nicol, 1969

Vogelenzang, 25.V.2011, soil sample dune *Carex arenaria* vegetation; records ALT.

Family TREMATURIDAE

Trichouropoda Berlese, 1916

Cerolinychus Berlese, 1917

Dentidinychus Sellnick, 1926

Pseuduropoda Oudemans, 1938

Trematura Berlese, 1918

Trematurella Trägårdh, 1942

Trichodinychus Berlese, 1917

Urolaelaps Berlese, 1917

Urospina Sellnick, 1932

20 calcarata Hirschmann & Zirngiebl-Nicol, 1961

Trichoobscura calcarata (Hirschmann & Zirngiebl-Nicol, 1961)

Bemelen, Bemelerberg, 20.XI.2007, soil sample calcareous grassland; records ALT.

21 campomolendina (Berlese, 1887)

Uropoda campomolendina

Utrecht, col. Oudemans in col. Naturalis (Buitendijk 1945).

22 **levisetosa** (Oudemans & Voigts, 1904)

Uropoda levisetosa

Haarlem, Arnhem col. Oudemans in col. Naturalis (Buitendijk 1945).

23 **livorniana** Wisniewski & Hirschmann, 1988

Tilburg, de Kaaistoep found phoretic on several beetles: *Glischrochilus quadripunctatus* Linnaeus, 1758 (Nitidulidae) and *Asemum striatum* (Linnaeus, 1758), *Rhagium inquisitor* Linnaeus, 1758 and *Arbopalus rusticus* (Linnaeus, 1758) (Cerambycidae) (pers. comm. Paul van Wielink, identification by Daria Baierlein).

24 **obscura** (C.L. Koch, 1836)

Notaspis obscura

Uropoda kempersi Oudemans, 1905
Meerssen, col. Oudemans in col. Naturalis (Buitendijk 1945); Aalten 14.IV.2006, soil sample, grassland on sandy soil; records ALT.

25 **orbicularis** (C.L. Koch, 1839)

Notaspis orbicularis

Uropoda krameri Canestrini, 1884
Avenhorn, 16.IX.1987; Schiermonnikoog, 11.VI.1967, in house; Eethen, 18.IX.1956, in farm, in col. NPP0.

26 **ovalis** (C.L. Koch, 1839)

Notaspis ovalis

Beekbergen, Elsbosweg, edge of ditch under *Mnium hornum*, 14.VII.1991; Beekbergen, Lierderholt, decaying logg of *Betula pendula*, 13.II.2013, in col. HS. Tilburg, de Kaaistoep found phoretic on several beetles: *Phosphuga atrata* Linnaeus, 1758 (Silphidae), *Athous subfuscus* (Mueller, 1767) and *Dicronychus cinereus* (Herbst, 1784) (Elateridae) and *Chrysolina polita* (Linnaeus, 1758) (Chrysomelidae) (pers. comm. Paul van Wielink, identification by Daria Baierlein). Klarenbeek, 22.IX.1997, old hedgerow, soil sample; Elspeet, 25.IX.1997, old hedgerow, soil sample; Garderen, 25.IX.1997, old hedgerow, soil sample; Harskamp, 25.IX.1997, old hedgerow, soil sample; Nunspeet, 25.IX.1997, old hedgerow, soil sample; Stroe, 25.IX.1997, old hedgerow, soil sample; Woudenberg, 25.IX.1997, old hedgerow, soil sample; records ALT. Vorden, Hackfort, 18.VII.1962, hole in oak stump; Ommen, 8.X.1956, in farm, in col. NPP0.

27 **spatulifera** (Moniez, 1892)

Uropoda spatulifera

's Gravenhage, Velp, col. Oudemans in col. Naturalis (Buitendijk 1945).

Family URODINYCHIDAE

Uroobovella Berlese, 1903

Allodinychus Trägårdh, 1943

Austruropoda Womersley, 1955

Calouropoda Berlese, 1916

Caluropoda Berlese, 1917

Dendrouropoda Willmann, 1959

Dinychopsis Berlese, 1917

Dinychura Berlese, 1913

Fuscourupoda Vitzthum, 1924

Indrotrachytes Deb & Reychanduri, 1965

Neoseius Oudemans, 1903

Olouropoda Berlese, 1917

Paradinychus Berlese, 1917

Paulitzia Oudemans, 1915

Phaulodiaspis Vitzthum, 1925

Phaulotrachytes Valle, 1954

Polyaspidella Berlese, 1910

Prodinychus Berlese, 1918

Styluropoda Trägårdh, 1952

Trachyxenura Leitner, 1946

Urocicella Berlese, 1913

Urocycellopsis Willmann, 1953

Urosternella Berlese, 1918

28 **appendiculata** (Berlese, 1910)

Dinychus appendiculatus

Nieuwegein, 11.III.2014, soil sample, orchard on riverine clay soil; records ALT. Wijnandsrade, 10.XII.1975, in loess; Wageningen, 8.V.1969, litter-bag wheat straw; Wageningen, 2.XI.1965, under oat; 30.IX.1964, soil sample insecticide treatment; Vreeswijk, Hagestein, 14.X.1965, under beet, in col. NPP0.

29 **bosi** (Oudemans, 1903)

Uropoda bosi

Pseuduropoda bosi

Leiden, col. Oudemans in col. Naturalis (Buitendijk 1945).

- 30 **fimicola** (Berlese, 1903)
Dinychus fimicola
Sevenum, IX.1966, litter henhouse; Zaltbommel, 13.X.1958, mushroom manure; Kerkdriel, 20.I.1958, mushroom manure, in col. NPPO.
- 31 **marginata** (C.L. Koch, 1839)
Notaspis marginata
Fuscuropoda marginata
Uropoda obscura Berlese, 1888
Uropoda obnoxia Reuter, 1905
Westland, Voorburg, Haarlemmermeer, Bergen, Jisp, Utrecht, Renkum, Wageningen, Velp, col. Oudemans in col. Naturalis (Buitendijk 1945); Arnhem, Kemperbergerweg, in compost, I.1965, leg. J.H. de Gunst, in col. HS. Oosterhesselen, I.VI.2010, soil sample, vegetable cultivation; records ALT. Naaldwijk, 27.III.1973, experimental station, aubergine; Vreeswijk, Hagestein, 14.X.1965, under potato; Emmen, 10.IX.1962, potting soil with *Cyclamen* sp.; Aalsmeer, 22.VIII.1962, in green house on *Oxidus gracilis* (C.L. Koch, 1847); Wageningen, 10.X.1961, on *Ocyopus olens* Mueller, 1764 (Coleoptera, Staphylinidae); Zwijndrecht, 4.VIII.1958, under cucumber, in col. NPPO.
- 32 **minima** (C.L. Koch, 1841)
Eumaeus minima
Veenendaal, Blauwe Hel, acidified quagmire, 3.VII.1992, in col. HS.
- 33 **nova** (Oudemans, 1902)
Uroseius nova
Arnhem, col. Oudemans in col. Naturalis (Buitendijk 1945); Tilburg, de Kaaistoep found phoretic on carrion beetles (*Nicrophorus humator* Gleditsch, 1767, *N. vespillo* (Linnaeus, 1758) and *N. vespilloides* Herbst, 1783) (Silphidae) (pers. comm. Paul van Wielink, identification by Daria Baierlein).
- 34 **obovata** (G. Canestrini & Berlese, 1884)
Uropoda obovata
West Terschelling aan Zee, Eldorado, 23.IX.2017, phoretic on *Bombus terrestris* (Linnaeus, 1758), in col. HS; Bennekom, Bovenbuurt, 20.V.1985, light fertilized grassland; Wageningen, Dijkgraaf, 20.V.1985, agricultural grassland, all soil samples grasslands on sandy soil; Schin op Geul, Schael-bergbos, 19.V.2010, soil sample forested hills on loess; Ubachsberg, Kunderberg, 22.XI.2011, soil sample calcareous grassland; records ALT.
- 35 **pulchella** (Berlese, 1904)
Trachyuropoda pulchella
Rykholt, Savelsbos, moss on decaying log of *Prunus avium*, 21.IV.1994; Beekbergen, Lierderholt, in litter of nestbox, 12.XI.2017, in col. HS.
- 36 **rackei** (Oudemans, 1912)
Trachyuropoda rackei
Sittard, col. Oudemans in col. Naturalis (Buitendijk 1945).
- 37 **varians Hirschmann & Zirngiebl-Nicol, 1962**
Tilburg, de Kaaistoep, found phoretic on water scavenger beetles (*Cercyon analis* (Paykull, 1798) and *C. unipunctatus* (Linnaeus, 1758)) (Hydrophilidae) (pers. comm. Paul van Wielink, identification by Daria Baierlein).
- 38 **vinicolora** (Vitzthum, 1926)
Uropoda vinicolora
Hoog Soeren, litterbag with faeces of red deer (*Cervus elaphus* Linnaeus, 1758), 15.VI.1989, in col. HS. Hoog Soeren, forest *Quercus robur*, litterbag with faeces of red deer (*Cervus elaphus* Linnaeus, 1758), 22.V.1989, 15.VI.1989; Rinsumageest, 13.VI.2005, soil sample grassland on peat soil; records ALT.

Family UROPODIDAE

Cilliba Von Heyden, 1826

Discopoma Canestrini, 1882

39 **cassidea** (Hermann, 1804)

Notaspis cassidea

Haarlem, De Steeg, Ruurlo, col. Oudemans in col. Naturalis (Buitendijk 1945); Maastricht, St Pietersberg, litter below *Anemone nemorosa*, 21.IV.1994, in col. HS. Bunde, v.1967, in litter in *Stellario-Carpinetum* with *Oxalis*, *Allium ursinum*, *Lamium galeobdolon* and *Convallaria majalis*; Epen, 12.V.1964, in litter in *Stellario-Carpinetum* with *Lamium galeobdolon*, in col. NPPO.

- 40 **erlangensis** Hirschmann & Zirngiebl-Nicol, 1969
Slenaken, Grote Bos, litter of *Fraxinus excelsior* along hollow road, 5.x.2015; Arkemheen, base of former dike in litter, in col. HS.

Discourella Berlese, 1910

Comydinychus Berlese, 1918
Phyllocilliba Marais & Loots, 1979
Trichodinychura Willmann, 1951

- 41 **cordieri** (Berlese, 1916)
Trachyuropoda cordieri
Wageningen, experimental fields Plant Protection Service, 31.x.1986; Gronsveld, Riesenberg, 17.v.2010; Oud Valkenburg, Gen Hoes, 19.v.2010; Schin op Geul, Schaelbergbos, 19.v.2010, all soil samples forested hills on loess; Cadier en Keer, Koeberg, 22.xi.2011, soil sample calcareous grassland; records ALT. Wageningen, 19.x.1971, under rye, 8.v.1969, in litterbag wheat straw, 9.iv.1964, orchard in grass tussock, 23.viii.1962, soil insecticide treatment, in col. Nppo.

- 42 **modesta** (Leonardi, 1899)
Celaeno modesta
Trachyuropoda (Janetiella) bella Berlese, 1905
Discourella discopomoides Berlese, 1910
Discopoma puella Berlese, 1910
Trichodinychura eucoma Willmann, 1951
Numansdorp, Ambachtsheerlijkheid, 3.xii.1975, under beet, in col. Nppo.

Pseuduropoda Oudemans, 1936

- 43 **vegetans** (DeGeer, 1768)
Acarus vegetans
Uropoda vegetans
Uropoda alfkeni Oudemans, 1903
Sneek, V, on *Geotrupes stercorarius* (Linnaeus, 1758) and VI, on *Aphodius fossor* Linnaeus, 1758 (Coleoptera Scarabaeidae), Oudemans (1896, 1903).

Uropoda Latreille, 1806

Australocilliba Athias-Binche & Bloszyk, 1988
Corbidinychus Womersley, 1961
Diphaulocylliba Vitzthum, 1925
Dicotrachytes Berlese, 1917

Haluropoda Halbert, 1915
Hiramatsulaqueata Hirschmann, 1984
Laqueaturopoda Hirschmann, 1979
Metadinychus Berlese, 1917
Mummulus Berlese, 1884
Neodiscopoma Vitzthum, 1943
Olodiscus Berlese, 1918
Opisthops Richters, 1917
Phaulocylliba Berlese, 1905
Phaulodinychus Berlese, 1905
Piracarus Richters, 1907
Uropolyaspis Berlese, 1903

- 44 **copridis** (Oudemans, 1916)
Cilliba copridis
Gelderland, col. Oudemans in col. Naturalis (Buitendijk 1945).
- 45 **halberti** Hirschmann, 1993
Haluropoda minor Halbert, 1915
Uropoda minor preocc. nec Berlese, 1885
Ossensisse, lower part seawall, in washed up litter, 30.iv.2016, in col. HS.
- 46 **italica** Hirschmann & Zirngiebl-Nicol, 1969
Wageningen, 13.xi.1973, under *Lolium perenne*, in col. Nppo.
- 47 **minima** Kramer, 1882
Olodiscus minimus
Hoog Soeren, soil *Quercus robur* forest, 1.ix.1988; Beekbergen, Lierderholt, 10.i.2016, litter of *Pinus silvestris* in col. HS. Deelerwoud, Hoge Veluwe, Heiweg, Imbos, 20.xi.1984 and 20.v.1985; Deelerwoud, 14.i.1988, all unfertilized grasslands; Bennekom, Bovenbuurt, 20.xi.1984 and 20.v.1985, light fertilized grassland; Wageningen, Droevendaal and Dijkgraaf, 20.xi.1984; Arnhemse heide, 24.vi.1988, all agricultural grassland soil samples grasslands on sandy soils; Deelerwoud, litterbags with *Deschampsia flexuosa*, 10.vii.1985, 14.viii.1985, 12.xi.1985, 14.iv.1986, 11.vi.1986, 3.ix.1986, 15.iv.1987 and 15.vi.1987; Imbos, litterbags with *Deschampsia flexuosa* 10.vii.1985, 14.viii.1985, 12.xi.1985, 3.ix.1986 and 15.vi.1987; Hoog Soeren, forest *Quercus robur*, litterbag with *Deschampsia flexuosa*, 22.v.1989, 15.vi.1989, 7.viii.1989, 8.ix.1989, 8.xii.1989, 8.iii.1990, 8.vi.1990, 8.ix.1990, 12.xii.1990, 8.iii.1991; Hoog Soeren,

forest *Quercus robur*, litterbag with faeces of red deer (*Cervus elaphus* Linnaeus, 1758), 22.v.1989, 15.vi.1989, 7.vii.1989, 8.ix.1989, 8.xii.1989, 8.iii.1990, 8.vi.1990, 8.ix.1990, 12.xii.1990, 8.iii.1991; Hoog Soeren 9.xii.1991, forest *Quercus robur*, soil sample; records ALT. Ede, xi/iii.1972, litterbag pear leaves under *Carpinus* hedge; Wageningen, 3.xii.1970, under carrot, 2.xi.1965, under grass-clover; Winterswijk, Meerdink, xii.1969, litter oak forest; Bunde, v.1967, litter *Stellario-Carpinetum* with *Vinca minor* and *Hedera helix*; Ouddorp, Westduinen, 16.vi.1966, north slope under *Festuca* sp., *Hieracium* sp. and moss; Ermelo, Houtdorp, 5.iv.1966, under *Calluna vulgaris*; Ellecom, 6.x.1965, under *Tagetes*; Epen, 12.v.1964, litter *Stellario-Carpinetum* with *Lamium galeobdolon*, in col. NPPO. Common and frequent species in grassland, hedgerow and forest soils.

48 minor (Berlese, 1887)

Discopoma minor

Cilliba minor

Voorburg, Haarlem, col. Oudemans in col.

Naturalis (Buitendijk 1945).

49 orbicularis (Mueller, 1776)

Acarus orbicularis

Cilliba romana Oudemans, 1913

Urodinychus subterraneus Schweizer, 1922

Tuberdinychus subterraneus (Schweizer, 1922)

's Gravenhage, Velp, col. Oudemans in col.

Naturalis (Buitendijk 1945); Tilburg, de Kaaistoep,

on several beetles found as phoretic (e.g. *Cercyon*

sp. (Hydrophilidae), *Aphodius* sp., *Geotrupes*

spiniger (Marsham, 1802) (Scarabaeidae) (pers.

comm. Paul van Wielink, identification by Daria

Baierlein). Bennekom, Bovenbuurt, 20.xi.1984,

light fertilized grassland; Wageningen, Dijkgraaf,

agricultural grassland, 20.xi.1984, soil samples

grasslands on sandy soils; Soerendonk, Cranen-

donk 15.v.1991, abandoned agricultural land soil

sample; Soest, 24.vi.1999; Nooitgedacht, 23.vi.1999;

Esbeek, 21.vi.1999; Biezenmortel, 23.vi.1999;

Drachten, 29.vi.1999; Borger, 7.vi.1999; Laren,

22.iv.1999; Dwingeloo, 19.v.1999; Raalte,

14.vi.1999; Aalten, 24.iv.1999; Oosterwolde,

14.vi.1999; Wintelre, 15.vi.1999; Knegsel,

1.vi.1999; Wierden, 15.vi.1999; Marienheem,

28.v.1999; Joppe, 26.iv.1999; Aalten, 24.iv.1999;

50 repleta (Berlese, 1904)

Phaulodinychus repletus

Texel, saltmarsh, litter, 7.ii.1993; Kuitaart, Vogel-

waard, 30.iv.2016, in litter eutrophic marsh, in

col. HS.

51 undulata Hirschmann & Zirngiebl-Nicol, 1969

Akmarijp, 11.x.1966, fen meadow (*Cirsio dissecti-*

Molinietum) under *Caltha palustris*; Ouddorp,

De Punt, 16.vi.1966, under *Artemisia* sp., in col.

NPPO.

52 willmanni Hirschmann & Zirngiebl-Nicol, 1969

Beutenaken, along brook Gulp, litter and moss

under *Fraxinus excelsior*, 9.x.2015, in col. HS.

Cohort Gamasina

Superfamily EPICRIOIDEA

Family EPICRIIDAE

Epicrius Canestrini & Fanzago, 1877

Epicriella Willmann, 1953

53 canestrinii Haller, 1881 (fig. 4)

Arnhem, Warnsborn, 18.vi.1959, litter of beech

forest; Beekbergen, Elsbosweg side of ditch,

14.vii.1991, in *Mnium hornum*, in col. HS.

54 **mollis (Kramer, 1876)**

Gamasus mollis

Epicirius geometricus Canestrini & Fanzago, 1877
Bunde, v.1967, *Stellario-Carpinetum* in moss
along brooklet, in col. NPPO.

Superfamily ZERCONOIDEA

Family ZERCONIDAE

Mixozercon Halásková, 1963

55 **sellnicki (Schweitzer, 1948)**

Zercon sellnicki

Elspeet, hedgerow, 25.IX.1997, soil 0-5 cm., in
col. HS. De Punt, Ouddorp, 16.VI.1966 under
Ligustrum, in col. NPPO.

Parazercon Trägårdh, 1931

56 **radiatus (Berlese, 1914)**

Zercon radiatus

Trizerconoides radiatus (Berlese, 1910)

Parazercon sarekensis Willmann, 1939

Diever, Boswachterij Smilde, 20.IV.2000;
Hilversum, Boswachterij De Vuursche, 3.V.2000;
Spier, Lheebroekerzand, 25.IV.2000, all soil sample
forest on sandy soil; Budel, 15.X.2001, soil sample
heathland on sandy soil; Valkenswaard, Grote
heide, Veeven, 9.VI.2004, soil sample heathland;
Duin en Bosch, 24.X.2007, soil sample dunes;
records ALT.

Prozercon Sellnick, 1943

Plumatozercon Balan, 1992

57 **fimbriatus (C.L. Koch, 1839)**

Zercon fimbriatus

Zercon trigonus Berlese, 1904

Emmer-Compascuum, 25.X.1965, under oat;
Bunde, v.1967, in *Stellario-Carpinetum* under
Vinca minor and *Hedera helix*, in col. NPPO.

58 **kochi Sellnick, 1943**

Nieuwkoop, birch brook, 2.VII.1992, soil 0-5 cm.,
in col. HS. Anloo, Drentse Aa, 14.X.1992, light
fertilized moist grassland soil sample; Ugchelen,
old beech forest, 3.V.1994, soil sample; Echten,
Oldenhaverveld, 27.IV.2000, soil sample forest on
sandy soil; Achttienhoven, 27.IV.2010, soil sample

grassland on peat soil; Rijkholt, Savelsbos,
17.V.2010, soil sample forested hills on loess;
records ALT. Bunde, early v.1967, *Stellario-
Carpinetum* in moss along small brook, in col.
NPPO.

59 **traegardhi (Halbert, 1923)**

Zercon traegardhi

Wageningen, experimental fields Plant Protection
Service, 31.X.1986; records ALT. Wageningen,
experimental fields Plant Protection Service,
19.X.1971, under rye, 8.V.1969, litterbag wheat
straw, 3.I.1968, under carrot, 30.IX.1964, soil
sample insecticide treatment, 31.I.1964, under
grass-clover; Ede, XI.1971/16.V.1972, pear leaves
under *Carpinus* hedge; Uithuizen, 12.X.1970,
under summer wheat after white clover; Emmer-
Compascuum, 25.X.1965, under oat; Ellecom,
6.X.1965, under oat, in col. NPPO.

Zercon C.L. Koch, 1836

Icozercon Blaszak, 1979

Zerconella Willmann, 1953

60 **abaculus C.L. Koch, 1839**

De Punt, Ouddorp, 16.VI.1966, under *Hippophaea*,
in col. NPPO.

61 **andrei Sellnick, 1958**

De Punt, Ouddorp, 16.VI.1966, under *Hippophaea*,
in col. NPPO.

62 **carpathicus Sellnick, 1958**

Slenaken, Grote Bos, 5.X.2015, moss below *Fraxinus
excelsior*, in col. HS.

63 **colligans Berlese, 1920**

Leusden Leusderheide 2.V.2000, soil sample forest
on sandy soil; records ALT.

64 **fageticola Halásková, 1970**

Klarenbeek, hedgerow, 22.IX.1997, soil 0-5 cm.,
in col. HS.

65 **schweitzeri Sellnick, 1949**

Rijkholt, Savelsbos, 21.IV.1994, litter below
Allium ursinum, in col. HS. Akmarij, 11.X.1966,
fen meadow (*Cirsio dissecti-Molinietum*) under
Caltha palustris, in col. NPPO.

66 **spatulatus C.L. Koch, 1839**

De Punt, Ouddorp, 16.VI.1966, under *Ligustrum*,
in col. NPPO.

- 67 **triangularis** C.L. Koch, 1836 (fig. 5)
 Hilversum, Lochem, Warnsveld, col. Oudemans in col. *Naturalis* (Buitendijk 1945); Beekbergen, Elsbosweg, side of ditch, 14.vii.1991, in *Mnium hornum*; Beekbergen, Nieuw Dennenlust, 24.vii.1989, litter of *Thuja* sp.; Beekbergen, Liederholt, 13.ii.2013, dead wood *Pinus silvestris*, in col. HS. Deelerwoud, litterbags with *Deschampsia flexuosa*, 14.viii.1985, 12.xi.1985, 14.iv.1986, 11.vi.1986, 15.iv.1987 and 15.vi.1987; Imbos, litterbags with *Deschampsia flexuosa*, 10.vii.1985, 14.viii.1985, 12.xi.1985, 14.iv.1986, 11.vi.1986, 3.ix.1986, 15.iv.1987 and 15.vi.1987; Wageningen, experimental fields Plant Protection Service, 31.x.1986; Deelerwoud, 14.i.1988 unfertilized grassland; Arnhemse heide, 24.vi.1988, agricultural grassland; Soerendonk, Cranendonk, 15.v.1991, abandoned agricultural land, soil sample; Taarlo, 19.iv.1993, moist forest soil sample; Rijen, Boswachterij Dorst, 23.vi.2000; Sterksel, Landgoed De Pan, 9.ix.2000; Echten, Oldenhaverveld, 27.iv.2000; Vredepeel, 14.vi.2000; Grolloërveld, 21.ix.2007; Ruurlo, Boswachterij, 14.ix.2007; Kootwijk, De Schotkamp, 14.ix.2007, all soil sample forest on sandy soil; Laren (NH), Wasmeer, 22.vi.2000, soil sample grassland sewage farm; Reeuwijk, 8.iv.2003, soil sample grassland on peat soil; Langenholte, 21.iv.2004, soil samples semi-natural grassland sandy soil; De Borkeld, 27.iv.2004; Tongerense, heide 4.v.2004; Echterzand, 2.vi.2004; Balloërzand, 7.vi.2004, all soil samples heathland; records ALT. Bennenkom, 11.1972, moss; Bunde, v.1967, in *Stellario-Carpinetum* under *Vinca minor* and *Hedera helix*, in col. NPPO. Frequent species in unfertilized grassland, heathland and forest soil.

Superfamily PARASITOIDEA

Family PARASITIDAE

Amblygamasus Berlese, 1903

68 **dentipes** (C.L. Koch, 1839)

Gamasus dentipes

Haarlem, V, in decaying leaves, Sneek, V, in humus (Oudemans, 1896, 1903); Wageningen, 23.viii.1962, insecticide treatment, in col. NPPO.

69 **mirabilis** Willmann, 1951

Beutenaken, along brook Gulp, litter and moss under *Fraxinus excelsior*, 9.x.2015, in col. HS. Bennekom, Bovenbuurt, 20.xi.1984, soil sample light fertilized grassland; Groningen, Noorderplantsoen, 10.iv.2006, soil sample city park; records ALT. Nieuw Vennepe, 21.x.1976, soil sample under winter wheat; Uithuizen, 18.x.1973, under beet, 12.x.1970, under summer wheat after beet, 2.iv.1970, under summer wheat after oat; Lienden, Schuilenburg, v.1972, litterbag with wheat straw; Wageningen, experimental fields Plant Protection Service, 1.viii.1969, litterbags insecticide treatment, 8.v.1969, litterbag wheat straw, 22.ix.1964, soil sample; Lent, 21.v.1964, under beet, in col. NPPO.

Cornigamasus Evans & Till, 1979

70 **lunaris** (Berlese, 1882)

Gamasus lunaris

Gamasus rubescens Canestrini & Fanzago, 1882
Parasitus spinipediformis Trägårdh, 1904
 Hilversum, Col. Oudemans in col. *Naturalis* (Buitendijk 1945).

Eugamasus Berlese, 1892

71 **berlesei** Willmann, 1935

Parasitus berlesei (Willmann, 1935)

Lelystad 9.xi.2012, soil sample arable land on marine clay soil; records ALT. Uithuizen, 18.x.1973, under white clover, in col. NPPO.

72 **cavernicola** Trägårdh, 1912

Wageningen, experimental fields Plant Protection Service, 2.x.1974, in col. NPPO.

73 **crassitarsus** (Halbert, 1923)

Gamasus crassitarsus

Groningen, Noorderplantsoen, 10.iv.2006; Leeuwarden, Vossepark, 4.v.2006, soil sample city park; records ALT. Wageningen, 24.viii.1974, on leaves of pear, in col. NPPO.

74 **magnus** (Kramer, 1876)

Gamasus magnus

's Gravenhage, Haarlem, Sittard, Sneek, Zutphen, in decaying leaves Col. Oudemans in col. *Naturalis* (Buitendijk 1945). Retranchement, 14.v.2002; IJzendijke, 15.iii.2002; Strijensas,

12.VI.2006, all soil sample arable land marine clay soil; Drempt, 26.II.2008, soil sample arable land on river clay soil; Pieterzijl, 25.III.2009; Sexbierum, I.IV.2009, all soil sample grassland on marine clay soil; Lelystad, 9.XI.2012, soil sample arable land on marine clay soil; Rottevalle, 2.VI.2004, soil sample grassland loamy sand; records ALT. Klundert, spring 1969, under beet; Biesbosch, Werkendam, spring 1969, under beet; Scharmer, v.1962, under wheat, in col. NPPO.

Gamasodes Oudemans, 1939

75 spiniger (Trägårdh, 1910)

Eugamasus spiniger

Gamasus spinipes C.L. Koch, 1837

Gamasoides spinipes (C.L. Koch, 1837)

Parasitus lunarisimilis Schweizer, 1961

Hilversum, Epen, col. Oudemans in col. Naturalis (Buitendijk 1945); Oosterwolde, 14.VI.1999; Moergestel, 16.VI.1999; Erp, 8.VI.1999; Joppe, 26.IV.1999; Bentelo, 15.V.2000; IJsselsteyn, 21.VI.2000; Hellendoorn, I.V.2013, all soil sample grassland sandy soil; Irnsum, 12.IV.2010, soil sample grassland on marine clay soil; Lelystad, 9.XI.2012, soil sample arable land on marine clay soil; records ALT. Westmaas, 27.II.1978, in filter-paper package under beet, in col. NPPO.

Holoparasitus Oudemans, 1936

76 calcaratus (C.L. Koch, 1839)

Gamasus calcaratus

Holoparasitus excipuliger (Berlese, 1905)

Gamasus excipuliger Berlese, 1905

Deelerwoud, soil 0-5 cm., 22.VIII.1988, 1 male and 1 female; Beekbergen, Beekbergerwoud, edge of ditch under *Mnium hornum*, 14.VII.1991, 1 female; Millingerwaard, decaying log of *Salix*, 8.III.2013, 1 male, in col. HS. Deelerwoud, 20.XI.1984, 20.V.1985, 14.I.1988, 22.VIII.1988; Hoge Veluwe, Heiweg, 20.XI.1984, all soils sample unfertilized grassland; Bennekom, Bovenbuurt C, 20.XI.1984, 20.V.1985, 22.II.2000, soil sample low fertilized grassland; Anloo, Drentse Aa, 14.X.1992, light fertilized moist grassland soil sample; Rotterdam, Kralingen, 12.XI.1997, harbour mud depot; Harskamp, 25.IX.1997, old hedgerow, soil

sample; Stroe, 25.IX.1997, old hedgerow, soil sample; Sterksel, Landgoed De Pan, 9.IX.2000; Asten, Galgenberg, 18.VII.2007; Soest, 23.IV.2009, soil sample forest on sandy soil; Duin en Bosch, 24.X.2007, soil sample dunes; records ALT. Ouddorp, 16.VI.1966, litter under *Hippophaea*; Bunde, early v.1961, moss along brook in *Stellario-Carpinetum*; Vorden, 18.I.1962, moss on oak stump; Beinsdorp, 14.X.1999, under *Hepatica*; Wageningen, XI.2012; Ede, v.1972, in litterbag pear leaves; Ouddorp, 16.VI.1966, litter *Ligustrum*, in col. NPPO.

77 excisus (Berlese, 1905)

Gamasus excisus

Aperlo, hedgerow, soil 0-5 cm., 25.IX.1997, 1 female, in col. HS.

78 inornatus (Berlese, 1906)

Gamasus inornatus

Maastricht, St Pietersberg, litter below *Anemone nemorosa*, 21.IV.1994, 1 male; in col. HS.

79 stramenti Karg, 1971

Nieuwkoop, birch swamp forest, soil 0-5 cm. 2.VII.1992, 1 female; Garderen, 't Sol, hedgerow, soil 0-5 cm., 25.IX.1997, 1 male and 2 females, in col. HS. Nunspeet, 25.IX.1997, old hedgerow, soil sample; Woudenberg, 25.IX.1997, old hedgerow, soil sample; records ALT.

Leptogamasus Trägårdh, 1936

Breviperigamasus Juvara-Bals, 1981

Holoperigamasus Juvara-Bals, 1981

80 oxygynelloides (Karg, 1968)

Pergamasus oxygynelloides

Maastricht, St Pietersberg, litter below *Anemone nemorosa*, 21.IV.1994, in col. HS.

81 suecicus Trägårdh, 1936

Rotterdam, Kralingen, city park, soil 0-5 cm., 12.XI.1997, in col. HS. Loon, 19.IV.1993, moist forest soil sample; Taarlo, 19.IV.1993, moist forest soil sample; Hiaure, 10.XI.1997, grassland clay soil; Rotterdam, Kralingen, 12.XI.1997, harbour mud depot; Rotterdam, Maasdijk, 12.XI.1997, harbour mud depot; Elspeet, 25.IX.1997, old hedgerow soil sample; Wageningen, Ossekampen, 3.V.2001, soil sample grassland on river clay soil; Bemelen, Bemelerberg, 20.XI.2007; Eysden,

Eysderheide, 20.XI.2007, soil sample calcareous grassland; Gronsveld Riesenbergr 17.V.2010; Rijkholt Savelsbos 17.V.2010; Oud Valkenburg, Gen Hoes, 19.V.2010, all soil sample forested hills on loess; Bemelen, Bemelerberg, 29.X.2012, soil sample calcareous grassland; records ALT. Wageningen, 2.XI.1965, under *Tagetes*; Ellecom, 6.X.1965, wasteland, in col. NPP0.

Paracarpais Athias-Henriot, 1978

Aceocarpais Athias-Henriot, 1978

Eteocarpais Athias-Henriot, 1978

Gigacarpais Athias-Henriot, 1978

82 furcatus (G. & R. Canestrini, 1882)

Eugamasus furcatus

Parasitus evertsi Oudemans, 1902

Hoog Soeren, forest *Quercus robur*, litterbag with *Deschampsia flexuosa*, 22.V.1989, 15.VI.1989, 7.VII.1989, 8.IX.1989, 8.III.1990; Hoog Soeren, forest *Quercus robur*, litterbag with faeces of red deer (*Cervus elaphus* Linnaeus, 1758), 22.V.1989, 15.VI.1989, 7.VII.1989, 8.IX.1989, 8.III.1990, 12.XII.1990; Hoog Soeren 9.XII.1991, forest *Quercus robur*, soil sample, records ALT.

Paragamasus Hull, 1918

83 alstoni Bhattacharyya, 1963

Wageningen, 7.VIII.1968, from compost heap, in col. NPP0.

84 armatus Halbert, 1915

Lelystad, Hollandse hout, Loglife experiment, 11.II.2016 plot middle 3, in col. HS.

85 integer (Bhattacharyya, 1963)

Pergamasus integer

Rheden, Middachten, alder swamp forest, decaying alder log, 9.III.2013, in col. HS.

86 lapponicus (Trägårdh, 1910)

Pergamasus lapponicus

Lysigamasus lapponicus

Slenaken, Grote Bos, moss under *Fraxinus excelsior*, 5.X.2015, in col. HS. Deelerwoud, 20.V.1985, unfertilized grassland soil sample; records ALT. Bunde, 4.V.1967, litter under *Corylus avellana* with *Oxalis*; Vorden, 18.VII.1962, hole in oak stump; Vorden, 5.VII.1962, soil sample oak forest, in col. NPP0.

87 parrunciger (Bhattacharyya, 1963)

Pergamasus parrunciger

Lysigamasus parrunciger

Hoog Soeren, litterbag with faeces of red deer (*Cervus elaphus* Linnaeus, 1758), 15.VI.1989, in col. HS. Hoog Soeren, forest *Quercus robur*, litterbag with *Deschampsia flexuosa*, 22.V.1989, 15.VI.1989, 7.VII.1989, 8.IX.1989, 8.XII.1989, 8.III.1990, 8.VI.1990, 12.XII.1990, 8.III.1991; Hoog Soeren, forest *Quercus robur*, litterbag with faeces of red deer (*Cervus elaphus* Linnaeus, 1758), 22.V.1989, 15.VI.1989, 7.VII.1989, 8.IX.1989, 8.XII.1989, 8.III.1990, 8.VI.1990, 8.IX.1990, 12.XII.1990, 8.III.1991; Hoog Soeren 9.XII.1991, forest *Quercus robur*, soil sample; records ALT.

88 robustus (Oudemans, 1902)

Parasitus longulus var. *robustus*

Loon op Zand, 14.IX.2017, *Prunus serotina* Ehrh. (1788) forest, soil sample forest on sandy soil, in col. HS; Woudenberg, 25.IX.1997, old hedgerow soil sample; Goirle, Riels Hoefke, 17.VI.2005, soil sample forest on sandy soil; records ALT.

89 runciger (Berlese, 1904)

Pergamasus runciger

Nieuwkoop, birch swamp forest, soil 0-5 cm. 2.VII.1992; Klarenbeek, hedgerow, soil 0-5 cm., 22.IX.1997, col. HS. Wageningen, Dijkgraaf, 20.XI.1984; Orvelte, 22.VI.1999; Nootgedacht, 23.VI.1999; Esbeek, 21.VI.1999; Nietap, 16.VI.1999; Drachten, 29.VI.1999, all soil samples, agricultural grassland on sandy soil; Anloo, Drentse Aa, 14.X.1992, light fertilized moist grassland soil sample; Klarenbeek, 22.IX.1997, old hedgerow soil sample; Elspeet, 25.IX.1997, old hedgerow, soil sample; Garderen, 25.IX.1997, old hedgerow, soil sample; Beilen, 24.IV.1999; Dwingeloo, 19.V.1999; Raalte, 14.VI.1999; Aalten, 24.IV.1999; Oosterwolde, 14.VI.1999; Lunteren, 1.VI.1999; Erp, 8.VI.1999; Eefde, 27.IV.1999, all grassland sandy soil; Rijen, Boswachterij Dorst, 23.VI.2000, soil sample forest on sandy soil; Oostermeer, 15.VI.2000; Surhuisterveen, 13.VI.2000; Laren (Gld), 1.V.2000; Bennekom, Bovenbuurt, 23.V.2000, soil sample grassland sandy soil; Opmeer, 24.V.2000, soil sample grassland sandy clay; Hem, 17.V.2000, soil sample grassland clay soil;

- Enschede, 28.VI.2000; Bathmen, 10.V.2000; Agelo, 11.V.2000; Denekamp, 12.V.2000; Schalkhaar, 19.V.2000; Barneveld, 4.V.2000, all soil sample grassland sandy soil; Wilnis, Demmerikse polder, 1.III.2001, soil sample arable land on sandy soil; Pieterburen, 21.III.2002, soil sample arable land marine clay soil; records ALT. Flevoland, 12.VI.1975, soil sample; Wageningen, experimental fields Plant Protection Service 13.XI.1973, under *Lolium perenne*; Vorden, 18.VII.1962, moss in wet hole oak stem; Elburg, 18.X.1966, soil sample grassland, in col. NPPO. Common species in all kinds of soil.
- 90 **schweitzeri** (Bhattacharyya, 1963)
Pergamasus schweitzeri
Rykholt, Savelsbos, moss on decaying log of *Prunus avium*, 21.IV.1994, in col. HS. Wageningen, experimental fields Plant Protection Service, 2.X.1974, under *Lolium perenne*, 5.XI.1972, litterbag with wheat straw; Biesbosch, Werkendam, spring 1969, under beet; Lienden, 28.I.1969, soil apple orchard, in col. NPPO.
- 91 **subtruncus** Athias-Henriot, 1972
Millingerwaard, decaying log of *Salix*, 8.III.2013, in col. HS.
- 92 **truncus** Schweizer, 1961
Lysigamasus truncus (Schweizer, 1961)
Deelerwoud, Hoge Veluwe Heiweg, 20.XI.1984 and 20.V.1985; Deelerwoud 14.I.1988, unfertilized grassland; Bennekom Bovenbuurt 20.XI.1984, 22.II.2000, 23.V.2000, light fertilized grassland soil samples; Deelerwoud litterbags with *Deschampsia flexuosa* 14.VIII.1985, 12.XI.1985, 14.IV.1986, 11.VI.1986 and 3.IX.1986; Loon 19.IV.1993 moist forest soil sample; Epe 22.IX.1997 old hedgerow soil sample; Stroe 25.IX.1997 old hedgerow soil sample; Soerendonk Buulderbroek 26.VI.2000; Doetinchem Slangenburg 31.V.2000; Bithoven De Leyen 13.VII.2007; Ulvenhout 14.VI.2007, soil sample forest on sandy soil; Geesteren (Gld), 9.V.2000, soil sample grassland sandy soil; Schin op Geul 24.VI.2003, soil sample grassland on loess; Eysden Eysderheide 20.XI.2007; Bemelen Bemelerberg 29.X.2012, soil sample calcareous grassland; Elst (Gld), 5.V.2009, soil sample grassland on river clay soil; Sallandse Heuvelrug 9.IX.2011; Haulerwijk Blauwe Bos 3.X.2013; soil sample heathland; records ALT.
- 93 **wasmanni** (Oudemans, 1902)
Parasitus wasmanni
Exaeten, col. Oudemans in col. Naturalis (Buitendijk 1945).
- Parasitellus Willmann, 1939**
- 94 **crinitus** (Oudemans, 1903)
Parasitus crinitus
Parasitus dubiosus Vitzthum, 1930
Parasitus crinitosimilis Vitzthum, 1930
Arnhem, col. Oudemans in col. Naturalis (Buitendijk 1945).
- 95 **fulcorum** (DeGeer, 1778)
Acarus fulcorum DeGeer, 1778
Gamasus litus C.L. Koch, 1836
Gamasus asaroticus C.L. Koch, 1839
Gamasus hirtus Kramer, 1876
Parasitus bomborum Oudemans, 1902
Eugamasus ferox Trägårdh, 1910
Haarlem, Arnhem, Putten, col. Oudemans in col. Naturalis (Buitendijk 1945). Boskoop, 15.III.1991 on *Bombus* sp.; Wageningen, 15.III.1954 on *Narcissus* flowers, in col. NPPO.
- 96 **talparum** (Oudemans, 1913)
Parasitus talparum
Ede, 3.VI.2011 on dead *Bombus* worker, in col. NPPO.
- Parasitus Latreille, 1795**
Bacuterus Karg, 1998
Coleogamasus Tikhomirov, 1969
Dyoneogamasus Athias-Henriot, 1979
Neogamasus Tikhomirov, 1969
- 97 **americanus** (Berlese, 1906)
Gamasus americanus
Parasitus americanus
Voorhout, 15.X.2007, *Fritillaria* (bulb); Hillegom, 18.X.2007, *Lilium* ‘Triumphator’ (bulb); Buitenhaag, 1.II.1996, *Lisianthus*; ‘s- Gravenzande, 21.IV.1995, in greenhouse, 9.X.1987, *Lilium*; import from Israel, 28.III.1995, *Limonium*; Honselersdijk, 3.I.1995, *Rosa*; Bemmel, 23.XII.1994, greenhouse; Naaldwijk, 8.IX.1992, *Lactuca*; Bleiswijk, 21.VIII.1992, *Primula*; Zwijndrecht, 30.VII.1991, greenhouse, in col. NPPO.

- 98 beta Oudemans & Voigts 1904**
Oldenbroek, 24.vi.1999; Drachten, 29.vi.1999; Hooghalen, 20.v.1999; Raalte, 14.vi.1999; Haaren, 16.vi.1999, all soil samples agricultural grassland on sandy soil; Mijnsherenland, 27.ix.2012; Numansdorp, 26.ix.2012, soil sample arable land on marine clay soil; Rottevalle, 2.vi.2004; Kootstertille, 2.vi.2004, soil sample grassland loamy sand; records ALT. Bergen op Zoom, 11.1.1973, in soil with beet; Ede, 11.1.1972, under *Carpinus* hedge; Wageningen, experimental fields Plant Protection Service, 2.xi.1971, under grass and white clover, in col. NPPO.
- 99 cappa Oudemans, 1904**
Sneek, col. Oudemans in col. Naturalis (Buitendijk 1945).
- 100 coleopratorum (Linnaeus, 1758)**
Acarus coleopratorum
Gamasodes fucorum sensu Oudemans & Voigts, 1904
Parasitus bremensis Oudemans & Voigts, 1904
Parasitus coleopratorum var. *concretipilus* Oudemans, 1904
's Gravenhage, Sneek, Meerssen, col. Oudemans in col. Naturalis (Buitendijk 1945); Soest, 24.vi.1999; Oosterwolde, 14.vi.1999; Erp, 8.vi.1999; Oirschot, 16.vi.1999, all soil sample, agricultural grassland on sandy soil; Holten, 18.v.2000; Barneveld, 4.v.2000; Esbeek, 16.v.2002, all soil sample grassland sandy soil; Hiaure, 2.v.2003, soil sample grassland on marine clay soil; Bakel, 10.x.2005; Kallenkote, 24.iv.2005; De Lutte, 22.iv.2005; Wijhe, 2.vi.2006, all soil sample grassland on sandy soil; records ALT. Bergambacht, 14.xii.1994, grassland; Vierpolders, 28.xi.1994, on *Geotrupes spiniger* (Marsham, 1802) (Coleoptera, Scarabaeidae); Roermond, 13.1.1955, in mushroom culture; Wageningen, experimental fields Plant Protection Service, 16.xi.1973, under *Lolium perenne*, in col. NPPO.
- 101 consanguineus Oudemans & Voigts 1904**
Esbeek, 21.vi.1999; Drachten, 29.vi.1999; Oosterwolde, 14.vi.1999; Rijkevoort, 16.vi.1999; Lunteren, 1.vi.1999; Marienheem, 28.v.1999; Lemelerveld, 19.v.1999, all soil samples agricultural grassland on sandy soil; Hooghalen, 6.iii.2001; Schoonebeek, 15.ii.2001; Valthe, 13.ii.2001; Borgercompagnie 264, 19.ii.2001; Vledderveen, 22.ii.2001; Sellingen, 7.iii.2001; Vorden, 3.vii.2001, all soil sample arable land on sandy soil; Drouwen, 12.iii.2002; Raalte, 13.iii.2002; Marwijksoord, 13.iii.2002, all soil sample arable land on sandy soil; Zuidzande, 18.iii.2002; Pieterburen, 21.iii.2002, soil sample arable land marine clay soil; Steenwijkerwold, 23.v.2002; De Heurne, 22.v.2002; Driebergen, 14.v.2002; Nederweert, 17.v.2002; Heino, 9.x.2007; Drouwen, 29.ii.2008, soil samples grassland on sandy soil; Zegveld, 19.iv.2004, soilsample grassland on peat soil; Wijnandsrade, 26.xi.2007 soil sample arable land on loess; records ALT. Netherlands, 15.viii.2001 substrate for orchid culture; Geldermalsen, 3.vi.2003, woodpulp on children's playing ground; Valkenburg ZH, 25.vii.2003, *Chrysanthemum* (in greenhouse); Zoeterwoude, 28.x.2004, in soil sample; Wageningen, experimental fields Plant Protection Service, 9.viii.1971, under *Lolium perenne*, in col. NPPO.
- 102 distinctus Berlese, 1903**
Parasitus eta Oudemans & Voigts, 1904
Sneek, col. Oudemans in col. Naturalis (Buitendijk 1945).
- 103 fimetorum (Berlese, 1904)**
Gamasus fimetorum
Parasitus affinis Oudemans, 1904
Arnhem, Sneek, col. Oudemans in col. Naturalis (Buitendijk 1945). Anloo, Drentse Aa, 14.x.1992, light fertilized moist grassland soil sample; records ALT. Baarlo, 11.xii.1991, in mushroom culture; Nijmegen, 27.iii.1961, mushroom manure; province of Brabant, xii.1977, with garlic having nematode infection, in col. NPPO.
- 104 fossorius Berlese, 1903**
Arnhem, Voorburg, col. Oudemans in col. Naturalis (Buitendijk 1945).
- 105 hortivagus (Berlese, 1903)**
Gamasus hortivagus
Bennekom, 15.iv.1964 *Hyacinthus* bulbs, in col. NPPO.
- 106 hyalinus (Willmann, 1949)**
Eugamasus hyalinus
Moergestel, 16.vi.1999; Udenhout, 26.iv.2005,

- grassland sandy soil; records ALT. Maastricht, 20.VI.1977, in maisfield; Wijnandsrade, 17.VI.1976, in maisfield, in col. NPPO.
- 107 kempersi Oudemans, 1902**
Nijkerk, col. Oudemans in col. Naturalis (Buitendijk 1945). Sas van Goes, 18.XI.2017, ruderal coastal vegetation, soil 0-5 cm., in col. HS. IJsselmuiden, 22.IV.1961, soil sample, in col. NPPO.
- 108 loricatus (Wankel, 1861)**
Gamasus loricatus
Gamasus niveus Wankel, 1861
Gamasus crassus Kramer, 1876
Gamasus anglicus Hull, 1918
Eugamasus ferox Trägårdh, 1910 sensu Turk & Turk, 1952
's Gravenhage, Maastricht, Sittard, col. Oudemans in col. Naturalis (Buitendijk 1945). Wageningen, 26.II.1973, greenhouse (Ennik); Ede, 16.V.1972, litterbag of pear leaves below *Carpinus* hedge; Wageningen, experimental fields Plant Protection Service, 19.VI.1964, under peas; Bergen op Zoom, I.XI.1956, mushroom culture, in col. NPPO.
- 109 lunulata (J. Mueller, 1859)**
Porrhostaspis lunulata
Eugamasus cornutus G. & R. Canestrini, 1882
Parasitus cornutus Oudemans, 1902
Eugamasus epsilon Oudemans & Voigt, 1904
Arnhem, 's Gravenhage, Haarlem, Lochem, Warnsveld, Zutphen in decaying leaves and damp moss, col. Oudemans, col. Naturalis (Buitendijk 1945); Beutenaken, along brook Gulp, litter and moss under *Fraxinus excelsior*, 9.X.2015, in col. HS. Moergestel, 16.VI.1999, grassland sandy soil; records ALT. Winterswijk, Meerdink, XII.1969, litter oak forest; Biesbosch, Werkendam, spring-1969, under beet; Roosendaal, II.IV.1961, manure mushroom culture, Bunde, V.1961, litter *Carpinus* under *Vinca minor* and *Hedera helix*, in col. NPPO.
- 110 mammillatus (Berlese, 1904)**
Gamasus mammillatus
Den Hoorn, 24.I.1989, on *Rosa* sp., in col. NPPO.
- 111 monticolus (Berlese, 1906)**
Gamasus monticolus
Noord Beveland, 14.I.1975, soil sample grass after winter wheat, in col. NPPO.
- 112 mustelarum Oudemans, 1902**
Aalsmeer, 's Gravenhage, Goes, Megen, Pannerden, Pijnakker, Zevenhuizen, col. Oudemans in col. Naturalis (Buitendijk 1945).
- 113 neglectus (Berlese, 1903)**
Gamasus neglectus
Vorden, 5.VII.1962, soil sample oak forest, in col. NPPO.
- 114 setosus Oudemans & Voigt, 1904**
Zaltbommel, 7.II.1957, manure mushroom culture, in col. NPPO.
- 115 triramosus (Leitner, 1946)**
Eugamasus triramosus
Vulgarogamasus triramosus (Leitner, 1946)
Leuth 18.V.2009; Horsen 7.V.2009, soil sample grassland on river clay soil, records ALT.
- 116 vesparum Oudemans, 1905**
Hilversum, col. Oudemans in col. Naturalis (Buitendijk 1945).
- Pergamasus Berlese, 1904**
Meriadenogamasus Athias-Henriot, 1973
Thenargamasus Karg
Triadogamasus Karg
- 117 alpinus Berlese, 1903**
Gamasus alpinus
Beekbergen, Lierderholt, 10.I.2016, litter of *Pinus silvestris*, in col. HS.
- 118 brevicornis (Berlese, 1903)**
Gamasus brevicornis
Slenaken, Grote Bos, moss under *Fraxinus excelsior*, 5.X.2015, in col. HS.
- 119 celticus (Bhattacharyya, 1963)**
Pergamasus celticus
Slenaken, Grote Bos, litter of *Fraxinus excelsior* along hollow road, 5.X.2015, in col. HS. Westmaas, 14.VII.1975, soil under *Phaseolus*, in col. NPPO.
- 120 conus (Karg, 1971)**
Lysigamasus conus
Hoenderloo, Hoenderlose bos, soil 0-5 cm., 3.V.1994; Rheden, Middachten, alder swamp forest, decaying alder log, 9.III.2013, in col. HS. Bennekom, Bovenbuurt, 20.V.1985, light fertilized grassland soil sample; Anloo, Drentse Aa,

14.x.1992, light fertilized moist grassland soil sample; Hoenderloo, old beech forest, 3.v.1994, soil sample; Ugchelen, old beech forest, 3.v.1994, soil sample; Epe, 22.IX.1997, old hedgerow, soil sample; Twello, 22.IX.1997, old hedgerow, soil sample; Aperlo, 25.IX.1997, old hedgerow, soil sample; Harskamp, 25.IX.1997, old hedgerow, soil sample; Nunspeet, 25.IX.1997, old hedgerow, soil sample; Stroo, 25.IX.1997, old hedgerow, soil sample; Woudenberg, 25.IX.1997, old hedgerow, soil sample; Zeeland, 15.VI.1999, agricultural grassland sandy soil; records ALT. Lienden, XI.1971/v.1972, buried litterbags of wheat straw; Lienden, XI.1971-v.1972, buried litterbags of pear leaves; Bennekom, 14.IX.1964, litter of oak, *Pinus* sp. and beech; Wageningen, autumn 1958, under grass tussock, in col. NPPO.

121 cornutus (Schweitzer, 1961)

Pergamasus cornutus

Rykholt, Savelsbos, moss on decaying log of *Prunus avium*, 21.IV.1994, in col. HS.

122 crassipes (Linnaeus, 1758)

Acarus crassipes

Acarus testudinarius Hermann, 1804

Gamasus quinquespinosus Kramer 1876

Holostaspis testudo J. Mueller, 1859

Pergamasus longicornis Berlese, 1906 sensu Bhat-tacharyya, 1963

Ede, hedge of *Carpinus avellana*, litterbag with leaves of *Pyrus*, 13.XII.1972; Hoog Soeren, litterbag with *Deschampsia flexuosa*, 22.v.1989; Ugchelen, Ugchelense bos, soil and litter, 3.v.1994; Millingerwaard, decaying log of *Salix*, 8.III.2013; in col. HS. Oude Maas, Griend op de Beerenplaat, 18.IX.1975, in pittfal; Deelerwoud, Hoge Veluwe, Heiweg, 20.v.1985, unfertilized grassland; Bennekom, Bovenbuurt, 20.XI.1984 and 20.v.1985, light fertilized grassland; Hoog Soeren, forest *Quercus robur*, litterbag with *Deschampsia flexuosa*, 22.v.1989, 15.VI.1989; Hoog Soeren, forest *Quercus robur*, litterbag with faeces of red deer (*Cervus elaphus* Linnaeus, 1758), 22.v.1989, 15.VI.1989; Hoog Soeren 9.XII.1991, forest *Quercus robur*, soil sample; Loon, 19.IV.1993, moist forest soil sample; Ugchelen, old beech forest, 3.v.1994, soil sample; Nietap, 16.VI.1999; Joppe, 26.IV.1999;

Aalten, 24.IV.1999; Zeeland, 15.VI.1999, all soil sample, agricultural grassland on sandy soil; Rijen, Boswachterij Dorst, 23.VI.2000; Hilversum, Boswachterij De Vuursche, 3.v.2000; Asten, Galgenberg, 6.VI.2000; Breda, Mastbos, 27.VI.2000, all soil sample forest on sandy soil; Eibergen, 11.v.2000; Laren (Gld), 1.v.2000; Bennekom, Bovenbuurt, 23.v.2000, all soil sample grassland sandy soil; Holten, 18.v.2000; Denekamp, 12.v.2000; Geesteren (Gld), 9.v.2000; Voorthuizen, 20.VI.2000; Boxtel 8.VI.2000, soil sample grassland sandy soil; Sellingen 7.III.2001, soil sample arable land on sandy soil; records ALT. Honselersdijk, 24.X.2016, *Symphoricarpus* (shrub); Otterlo, 27.VII.1966, grass and clover vegetation pasture; Garderen, Houtdorp, 5.IV.1966, soil *Calluna* field; Epen, 12.v.1964, *Carpinus* forest under *Galium galeobdolon*; Wageningen, autumn 1958, in moss under *Pinus silvestris*, in col. NPPO. Common and frequent species in grassland and forest soils.

123 diversus (Halbert, 1915)

Gamasus diversus

Hagestein, 17.III.1966, under beet; Vreeswijk, 14.X.1965, under potato, in col. NPPO.

124 germanicus Berlese, 1906

Gamasus decipiens var. *germanicus* Berlese, 1906

Pergamasus similis Willmann, 1953

Winterswijk Meerdink, XII.1969, litter oak forest, in col. NPPO.

125 instipatus Athias-Henriot, 1967

Winterswijk Meerdink, XII.1969, litter oak forest, in col. NPPO.

126 longicornis (Berlese, 1906)

Gamasus longicornis

Wageningen, experimental fields Plant Protection Service, 13.XI.1973, under *Lolium perenne*, 11.IX.1963, insecticide treatment, 31.III.1962, rye field, 12.IX.1958, rye field; Ede, 25.v.1973, from plant debris under *Carpinus* hedge; Ede, v.1972, litterbag wheat straw under *Carpinus* hedge; Biesbosch, Werkendam, spring 1969, under beet; Lienden, 28.I.1969, apple orchard; Bunde, v.1967, litter *Carpinus* with *Vinca minor* and *Hedera helix*; Vreeswijk, Hagestein, 14.X.1965, under potato; Ellecom, 6.X.1965, under oat; Lent, 21.v.1964, under beet, in col. NPPO.

127 mediocris Berlese 1904

Pergamasus sudeticus Willmann, 1937
Pergamasus brevicornis Micherdszinski, 1969 nec
Berlese, 1903
Harskamp, 25.IX.1997, old hedgerow, soil sample;
records ALT.

128 misellus Berlese, 1904

Lysigamasus misellus (Berlese, 1904)
Hoog Soeren, litterbag with *Deschampsia flexuosa*,
22.V.1989; Slenaken, Grote Bos moss under
Fraxinus excelsior, 5.X.2015, in col. HS. Hoog
Soeren, forest *Quercus robur*, litterbag with
Deschampsia flexuosa, 22.V.1989, 15.VI.1989,
7.VII.1989, 8.IX.1989, 8.XII.1989, 8.III.1990,
8.VI.1990, 8.IX.1990, 12.XII.1990, 8.III.1991; Hoog
Soeren, forest *Quercus robur*, litterbag with faeces
of red deer (*Cervus elaphus* Linnaeus, 1758),
15.VI.1989, 7.VII.1989, 8.IX.1989, 8.XII.1989,
8.III.1990, 8.VI.1990, 8.IX.1990, 12.XII.1990,
8.III.1991; Hoog Soeren 9.XII.1991, forest *Quercus
robur*, soil sample; Soerendonk Buulderbroek
26.VI.2000; Rijen, Boswachterij Dorst, 23.VI.2000;
Sterksel, Landgoed De Pan, 9.IX.2000; Echten,
Oldenhaverveld, 27.IV.2000; Doetinchem,
Slangenburg, 31.V.2000; Vredepeel, 14.VI.2000,
all soil sample forest on sandy soil; Bennekom,
Bovenbuurt, 23.V.2000, soil sample grassland
sandy soil; Holten 16.V.2000, soil sample grass-
land sandy soil; Haps 8.III.2002, soil sample
arable land on sandy soil; Retranchement,
14.V.2002; Kloosterzande, 25.III.2002, soil sample
arable land marine clay soil; Waarder 9.IV.2003;
Reeuwijk 8.IV.2003; Goudriaan 18.IV.2003;
Noordeloos, 31.III.2003; Brandwijk, 26.III.2003,
soil samples grassland on peat soil; records ALT.
Steenbergen, 6.X.1976, under winter wheat;
Woensdrecht, 5.XI.1975 till 23.III.1976, under
winter wheat after sugar beet; Garderen, Hout-
dorp, 5.IV.1966, under *Calluna*; Wageningen,
experimental fields Plant Protection Service,
16.VII.1965, under *Achillea millefolium* wasteland;
Wageningen, 9.IV.1964, in grass tussock in orchard;
Vorden, 18.VII.1962, in moss on oak stump,
5.VII.1962 soil oak forest, in col. NPP0. Frequent
species in various kinds of soil.

129 nasellus Karg, 1968

Numansdorp, 3.XII.1975, under beet, in col.
NPP0.

130 norvegicus (Berlese, 1905)

Gamasus norvegicus
Gamasus septentrionalis Oudemans, 1902 sensu
Bhattacharyya, 1963, Karg, 1971
Elsendorp, 0-2.5 cm. below grasstuft, 13.I.1978;
Maastricht, St Pietersberg, litter below *Anemone
nemorosa*, 21.IV.1994, in col. HS. Rijen, Bos-
wachterij Dorst, 23.VI.2000; Asten, Galgenberg,
18.VII.2007, soil sample forest on sandy soil;
Hem, 17.V.2000, soil sample grassland clay soil;
Schaijk, 23.V.2000; De Lutte, 30.V.2002; De
Heurne, 22.V.2002; Kootstertille, 8.VI.2005;
Heino, 9.X.2007; Damwoude, 10.V.2007, all soil
samples grassland on sandy soil; Drogeham,
2.V.2002; Kootstertille, 2.VI.2004, soil sample
grassland loamy sand; Dreischor 30.III.2009;
Wieringerwerf 23.III.2009, soil sample grassland
on marine clay soil; Puiflijk, 20.V.2009, soil
sample grassland on river clay soil; Berkenwoude,
20.IV.2010, soil sample grassland on peat soil;
Zeewolde, 7.IV.2010, soil sample grassland on
marine clay soil; records ALT.

131 noster (Berlese, 1903)

Gamasus noster
Garderen, 25.IX.1997, old hedgerow, soil sample;
records ALT.

132 puerilis (Karg, 1963)

Lysigamasus puerilis
Pergamasus natbistmus Bhattacharyya, 1963
Klarenbeek, hedgerow, soil 0-5 cm., 22.IX.1997,
in col. HS. Elspeek, 25.IX.1997, old hedgerow, soil
sample; Harskamp, 25.IX.1997, old hedgerow, soil
sample; Woudenberg, 25.IX.1997, old hedgerow,
soil sample; records ALT.

133 quisquiliarum (Canestrini, 1882)

Gamasus quisquiliarum
Pergamasus australicus Womersley, 1942
Deelerwoud, soil 0-5 cm., 5.XII.1988; idem
10.I.1989; Epe, Vemde, hedgerow, soil 0-5 cm.,
22.IX.1997, in col. HS. Hoge Veluwe, Heiweg,
20.XI.1984 and 20.V.1985, unfertilized grassland;
Nietap, 16.VI.1999; Drachten, 29.VI.1999, both
soil samples agricultural grassland on sandy soil;

Epe, 22.IX.1997, old hedgerow, soil sample; Hem, 17.V.2000, soil sample grassland clay soil; Wageningen, Ossekampen, 3.V.2001, soil sample grassland on river clay soil; Ouwkerk, 13.III.2002; Zaamslag, 16.V.2002; Oostkapelle, 20.III.2002, soil sample arable land marine clay soil; Polsbroek, 4.IV.2003, 11.VI.2008; Goudriaan, 18.IV.2003; Reeuwijk, 11.VI.2008, soil samples grassland on peat soil; De Lutte, 22.IV.2005; Eastermar, 30.V.2005, soil sampe on sandy soil; Strijensas, 12.VI.2006, soil sample arable land on marine clay; records ALT. Woensdrecht, 5.XI.1975 till 23.III.1976, in filterpaper package under winter wheat after sugar beet; Uithuizen, 12.X.1970, under summer wheat after beet; Biesbosch, Werkendam, spring 1969, under beet; Ellecom, 6.X.1965, under *Tagetes*, in col. NPP0.

134 resinae Karg, 1968

Hoge Veluwe, Heiweg, 20.XI.1984, soil sample unfertilized grassland on sandy soil; records ALT.

135 rühmi Willmann, 1938

Epe, Vemde, hedgerow, soil 0-5 cm., 22.IX.1997, in col. HS. Oosterwolde 14.VI.1999, grassland sandy soil; records ALT.

136 runcatellus (Berlese, 1903)

Gamasus runcatellus

Lysigamasus runcatellus

Pergamasus teutonicus Willmann, 1956

Ouddorp, Westduinen, soil below *Festuca* tuft, 16.VI.1966; Wageningen, exerimental field Plant disease control, 24.VIII.1975; Beekbergen, Reeënberg, in *Sphagnum*, 19.VII.1989, in col. HS. Bennekom, Bovenbuurt, 20.V.1984, light fertilized grassland soil sample; Wageningen, exerimental field Plant disease control, 31.X.1986; Sterksel, Landgoed De Pan, 9.IX.2000, soil sample forest on sandy soil; Bennekom, Bovenbuurt, 23.V.2000, soil sample grassland sandy soil; Opmeer, 24.V.2000, soil sample grassland sandy clay; Holten, 18.V.2000; Bathmen, 10.V.2000; Agelo, 11.V.2000; Denekamp, 12.V.2000; Schalkhaar, 19.V.2000; Geesteren (Gld), 9.V.2000; Voorthuizen, 20.VI.2000; Boxtel, 8.VI.2000, all soil sample grassland sandy soil; Valthermond, 9.III.2001; Valthe, 13.II.2001; Geesbrug, 27.II.2001; Smilde, 5.III.2001; 2e-Exploërmond, Exploërkijl,

3.III.2001; Borgercompagnie 249, 23.II.2001; Vledderveen, 22.II.2001, all soil sample arable land on sandy soil; Wilnis, Demmerikse polder, 1.III.2001, soil sample arable land on sandy soil; Budel, 15.X.2001, soil sample heathland on sandy soil; Paterswolde, 13.III.2002, soil sample arable land on sandy soil; Retranchement, 14.V.2002; Zaamslag, 9.IV.2002; Westernieland, 5.IV.2002, all soil sample arable land marine clay soil; records ALT. Wageningen, experimental fields Plant Protection Service, 13.XI.1973 and 9.VIII.1974, under *Lolium perenne*, 2.XI.1971, under perennial rye grass and white clover, 7.VIII.1969, insecticide treatment litterbag, 24.VIII.1974 till 6.VI.1975, soil with leaves of pear, 6.IV.1962, in rye field, 17.IV.1962, in lawn, 31.III.1962, in rye field; Ouddorp, 16.VI.1966, north slope under *Festuca* sp., *Hieracium* sp. and moss; Garderen, Houtdorp, 5.IV.1966, under *Calluna*; Nieuw Vennepe, 27.X.1976, under winter wheat; Woensdrecht, 5.XI.1975 till 23.III.1976, in filterpaper package under winter wheat after sugar beet; Noord-Beveland, 14.VII.1975, under grass after winter wheat; Ede, V.1972, in straw under *Carpinus* hedge; Vorden, Hackfort, 18.VII.1962, moss on oak stem; in col. NPP0. Frequent species in various kinds of (agricultural) soil.

137 septentrionalis (Oudemans, 1902)

Parasitus septentrionalis

Amblygamasus septentrionalis

Hoog Soeren, litterbag with *Deschampsia flexuosa*, 22.V.1989; Epe, Vemde, hedgerow, soil 0-5 cm., 22.IX.1997, in col. HS. Bennekom, Bovenbuurt, 20.V.1985, light fertilized grassland; Imbos, litterbags with *Deschampsia flexuosa*, 10.VII.1985; Hoog Soeren, forest *Quercus robur*, litterbag with *Deschampsia flexuosa*, 22.V.1989, 7.VII.1989, 8.IX.1989, 8.XII.1989, 8.III.1990, 12.XII.1990, 8.III.1991; Hoog Soeren, forest *Quercus robur*, litterbag with faeces of red deer (*Cervus elaphus* Linnaeus, 1758), 22.V.1989, 15.VI.1989, 8.IX.1989, 8.XII.1989, 8.III.1990, 12.XII.1990.; Hoog Soeren 9.XII.1991, forest *Quercus robur*, soil sample; Hiaure, 10.XI.1997, grassland clay soil; Nooitgedacht, 23.VI.1999; Esbeek, 21.VI.1999 Joppe, 26.IV.1999; Eefde, 27.IV.1999, all soil samples

- agricultural grassland on sandy soil; Surhuis-terveen, 2.VI.2004; Kootstertille, 2.VI.2004, soil sample grassland loamy sand; Leusden, Leusderheide 2.V.2000, soil sample forest on sandy soil; Leusden, Leusderheide, 4.XI.2010, soil sample heathland soil; records ALT. Wageningen, 7.VIII.1968, from compost heap; Wageningen, experimental fields Plant Protection Service, 2.X.1974, under *Lolium perenne*, 8.V.1969, in wheat straw, 22.IX.1964, soil sample insecticide treatment; Ede, 1972, in straw under *Carpinus* hedge; Bunde, early V.1967, litter under *Corylus* and litter under *Vinca*; Ellecom, 6.X.1965, under oat; Winterswijk, Meerdink, XII.1969, litter oak forest (misidentified as *P. longior* Berlese), in col. NPP0.
- 138 similis Willmann, 1953**
Paragamasus similis (Willmann, 1953)
Bennekom, Bovenbuurt, 20.V.1985, light fertilized grassland soil sample, records ALT.
- 139 vagabundus Karg, 1968**
Lysigamasus vagabundus (Karg, 1968)
Pergamasus mniophilus Micherdzinski, 1969
Deelerwoud, soil 0-5 cm., 22.VIII.1988; Beekbergen, Beekbergerwoud, edge of ditch under *Mnium hornum*, 14.VII.1991; Hoenderloo, Hoenderlose bos, soil 0-5 cm., 3.V.1994; in col. HS. Deelerwoud, Hoge Veluwe Heiweg, Imbos 20.XI.1984 and 20.V.1985, unfertilized grasslands on sandy soil; Kallenkote, 21.VI.1999; Orvelte, 22.VI.1999; Nooitgedacht, 23.VI.1999; Nietap, 16.VI.1999, all soil samples agricultural grassland on sandy soil; Deelerwoud, litterbags with *Deschampsia flexuosa*, 10.VII.1985 and 11.VI.1986; Imbos, litterbags with *Deschampsia flexuosa*, 10.VII.1985, 14.VIII.1985, 12.XI.1985, 3.IX.1986 and 15.IV.1987; Deelerwoud, 14.I.1988, 22.VIII.1988, unfertilized grassland; Anloo, Drentse Aa, 14.X.1992, light fertilized moist grassland soil sample; Loon, 19.IV.1993, moist forest soil sample; Taarlo, 19.IV.1993, moist forest soil sample; Loenen, old beech forest, 3.V.1994, soil sample; Hiaure, 10.XI.1997, grassland clay soil; Dordrecht, 12.XI.1997, floodplain grassland soil; Rotterdam, Kralingen, 12.XI.1997, harbour mud depot; Rotterdam, Maasdijk, 12.XI.1997, harbour mud depot; Epe, 22.IX.1997, old hedgerow, soil sample; Klarenbeek, 22.IX.1997, old hedgerow, soil sample; Harskamp, 25.IX.1997, old hedgerow, soil sample; records ALT. Bennekom, III.1972, in moss; Winterswijk, Meerdink, XII.1969, litter oak forest; Bunde, early IV.1967, moss along brook in *Stellario-Carpinetum*; Garderen, Houtdorp, 5.IV.1966, under *Calluna*; Bennekom, 14.IX.1964, under *Cladonia portentosa* in heathland; Vorden, 18.VII.1962, moss wet hole oak stem, in col. NPP0. Common and frequent species in forest and grassland soils.
- Poecilochirus G. & R. Canestrini, 1882**
Physoparasitus Blackman & Evans, 1994
- 140 carabi G. & R. Canestrini, 1882**
Terschelling, Sneek, Voorst, Meerssen, Arnhem, col. Oudemans in col. Naturalis (Buitendijk 1945); Dordrecht 12.XI.1997, floodplain grassland soil; Rotterdam, Maasdijk, 12.XI.1997, harbour mud depot; records ALT.
- 141 macgillavryi Oudemans, 1927**
Pietersberg, col. Oudemans in col. Naturalis (Buitendijk 1945).
- 142 necrophori Vitzthum, 1930 (fig. 6)**
Bilthoven, 25.VIII.2008, on *Gallus gallus domesticus* (Linnaeus, 1758) (Galliformes, Phasianidae) feathers; Rijswijk (Gld.), VII.2010, Houten 13.XII.2011, deutonymphs on *Nicrophorus vespilloides* Herbst, 1783 (Coleoptera, Silphidae), in col. Cremers. Wijngaarden, 21.VIII.1990, toilet in house; Udenhout, V.1990, in Malaise trap, in col. NPP0.
- 143 subterraneus (J. Mueller, 1860)**
Porrhostaspis subterraneus
Arnhem, col. Oudemans in col. Naturalis (Buitendijk 1945).
- Vulgarogamasus Tichomirov, 1969**
- 144 kraepelini (Berlese, 1905)**
Gamasus kraepelini
Parasitus kraepelini
Paracarpais kraepelini
Beekbergen, Lierderholt, litter of *Picea abies*, 10.I.2016, in col. HS. Ugchelen, old beech forest, 3.V.1994, soil sample; records ALT.
- 145 micherdzinskii Karg, 1971**
Ugchelen, Ugchelense bos, soil and litter, 3.V.1994 in col. HS

- 146 oudemansi (Berlese, 1903)**
Eugamasus oudemansi
Parasitus oudemansi
 Hensbroek, Valkenburg (Ravensbosch), col.
 Oudemans in col. *Naturalis* (Buitendijk 1945).
 Heelsumse Beek, 28.VIII.1953, on *Arvicola*
terrestris (Linnaeus, 1758) (Rodentia, Cricetidae),
 in col. NPP0.
- 147 remberti (Oudemans, 1912)**
Eugamasus remberti
 Arnhem, Sittard, col. Oudemans in col. *Naturalis*
 (Buitendijk 1945). Zaltbommel, 17.XI.1956, mush-
 room culture, in col. NPP0.
- 148 trouessarti (Berlese, 1892)**
Gamasus trouessarti
 Ouddorp, 16.VI.1966, under *Artemisia* and under
Salicornia, in col. NPP0.

Superfamily VEIGAIOIDEA

Family VEIGAIDAE

Gamasolaelaps Berlese, 1904

Metaparasitus Oudemans & Voigts, 1904

- 149 aurantiacus (Berlese, 1903)**
Cyrtolaelaps aurantiacus
Metaparasitus soboles Oudemans & Voigts, 1904
 's Gravenhage, Arnhem, col. Oudemans in col.
Naturalis (Buitendijk 1945).
- 150 excisus (L. Koch, 1879)**
Sejus excisus
 Borgercompagnie 249, 23.II.2001; Drouwen,
 12.III.2002, soil sample arable land on sandy soil;
 records ALT. Wageningen, 2.X.1974, under *Lolium*
perenne, in col. NPP0.

Veigaia Oudemans, 1905

- 151 cerva (Kramer, 1878)**
Gamasus cerva
 Deelerwoud, *Deschampsia flexuosa* vegetation,
 20.IX.1988, in col. HS. Deelerwoud, Imbos,
 20.XI.1984; Deelerwoud, 14.I.1988, 20.IX.1988, all
 unfertilized grasslands; Bennekom, Bovenbuurt,
 light fertilized grassland, 20.XI.1984 and
 20.V.1985; Soerendonk, Cranendonk, 19.IV.2006;
 soil samples grassland on sandy soil; Anloo,

Drentse Aa, 14.X.1992, light fertilized moist
 grassland soil sample; Rotterdam, Kralingen,
 12.XI.1997, harbour mud depot; Rotterdam,
 Maasdijk, 12.XI.1997, harbour mud depot;
 Garderen, 25.IX.1997, old hedgerow, soil sample;
 Sterksel, Landgoed De Pan, 9.IX.2000; Diever,
 Boswachterij Smilde, 20.IV.2000; Asten, Galgen-
 berg, 6.VI.2000; Vredepeel, 14.VI.2000; Bithoven,
 De Leyen, 13.VII.2007, 2.IV.2014; Harderwijk,
 22.IV.2009; Lheebroekerzand, 1.IV.2014, all soil
 sample forest on sandy soil; Bennekom, Boven-
 buurt, 23.V.2000, soil sample grassland sandy
 soil; Bude, 15.X.2001, soil sample heathland on
 sandy soil; Strijensas, 12.VI.2006, soil sample
 arable land on marine clay; Culemborg, 19.V.2011,
 soil sample fruit cultivation river clay soil;
 records ALT. Nieuw Vennep, 27.X.1976, soil
 sample under winter wheat; Ede, 16.V.1972, litter-
 bag pear leaves under *Carpinus* hedge, III.1972,
 in straw under *Carpinus* hedge; Winterswijk,
 XII.1969, litter oak forest, in col. NPP0.

152 decurtata Athias-Henriot, 1961

Wageningen, experimental fields Plant Protection
 Service, 4.VIII.1971, under grass and white clover;
 Achterberg, 20.III.1969, under summer wheat
 after beet; Ellecom, 6.X.1965, under grass-clover
 and under beet, in col. NPP0.

153 exigua (Berlese, 1916)

Cyrtolaelaps exigua
 Zeewolde, 7.IV.2010; Lelystad 9.XI.2012, soil
 sample grassland on marine clay soil; Haulerwijk,
 Blauwe bos, 31.X.2011, soil sample heathland
 on sandy soil; records ALT. Lienden, III.1971, in
 litterbag with wheat straw, in col. NPP0.

154 kochi (Trägårdh, 1901)

Cyrtolaelaps kochi
Gamasus emarginatus L. Koch, 1879
Cyrtolaelaps berculeanus Berlese, 1904
 Hoog Soeren, litterbag with faeces of red deer
 (*Cervus elaphus* Linnaeus, 1758), 15.VI.1989, in col.
 HS. Hoog Soeren, forest *Quercus robur*, litterbag
 with *Deschampsia flexuosa*, 22.V.1989, 15.VI.1989,
 7.VII.1989, 8.IX.1989, 8.XII.1989, 8.III.1990,
 8.VI.1990, 8.IX.1990, 12.XII.1990, 8.III.1991; Hoog
 Soeren, forest *Quercus robur*, litterbag with faeces
 of red deer (*Cervus elaphus* Linnaeus, 1758),

22.V.1989, 15.VI.1989, 7.VII.1989, 8.IX.1989, 8.XII.1989, 8.III.1990, 8.VI.1990, 8.IX.1990, 12.XII.1990, 8.III.1991; Hoog Soeren, 9.XII.1991, forest *Quercus robur*, soil sample; Loon, 19.IV.1993, moist forest soil sample; Ugchelen, old beech forest, 3.V.1994, soil sample; records ALT. Winterswijk, XII.1969, litter of oak forest; Lienden, 28.I.1969, soil sample under apple tree; Bennekom, 14.IX.1964, under *Cladonia portentosa* in heathland, in col. NPPO.

155 nemorensis (C.L. Koch, 1839)

Gamasus nemorensis

Cyrtolaelaps nemorensis Berlese, 1892

Cyrtolaelaps kochi Trägårdh, 1910

Veigaia selnickii Mihelčič, 1958

Ede, *Carpinus* hedge, 15.VIII.1972, in straw; Ugchelen, Ugchelense bos, soil and litter, 3.V.1994 in col. HS.Deelerwoud, Imbos 20.XI.1984 and 20.V.1985, Hoge Veluwe, Heiweg, 20.XI.1984, unfertilized grasslands, Bennekom, Bovenbuurt, 20.XI.1984 and 20.V.1985, light fertilized grassland, soil samples on sandy soil; Deelerwoud, litterbags with *Deschampsia flexuosa*, 14.VIII.1985, 12.XI.1985, 14.IV.1986, 11.VI.1986, 3.IX.1986, 15.IV.1987 and 15.VI.1987; Imbos, litterbags with *Deschampsia flexuosa*, 12.XI.1985 and 14.IV.1986; Wageningen, experimental fields Plant Protection Service, 31.X.1986; Soerendonk, Cranendonk, 15.V.1991, abandoned agricultural land soil sample; Loon, 19.IV.1993, moist forest soil sample; Taarlo, 19.IV.1993, moist forest soil sample; Epe, 22.IX.1997, old hedgerow soil sample; Klarenbeek, 22.IX.1997, old hedgerow, soil sample; Twello, 22.IX.1997, old hedgerow, soil sample; Aperlo, 25.IX.1997, old hedgerow, soil sample; Elspeet, 25.IX.1997, old hedgerow, soil sample; Harskamp, 25.IX.1997, old hedgerow, soil sample; Stroe, 25.IX.1997, old hedgerow, soil sample; Woudenberg, 25.IX.1997, old hedgerow, soil sample; records ALT. Ede, III.1972, in leaves under *Carpinus* hedge; Wageningen, experimental fields Plant Protection Service, 4.VIII.1971, under grass and white clover treated with captan, 8.V.1969, in litterbag from lindane treatment, 11.IX.1963, insecticide treatment control, 9.IX.1963, under *Chichorium* with parathion, 23.VIII.1962, soil sample; Winterswijk,

6.VII.1969, litter in oak forest; Lienden, 12.I.1971, caught on apple stem, 28.I.1969, in soil sample under apple tree; Bunde, early V.1967, litter under *Corylus* and *Oxalis*; De Punt, Ouddorp, 16.VI.1966, under litter *Ligustrum*; Garderen, Houtdorp, 5.IV.1966, in soil heathland; Ellecom, 6.X.1965, under oat and under beet; Bennekom, 14.IX.1964, under *Cladonia portentosa* in heathland; Epen, Bovenste Bos, 12.V.1964, litter *Carpinus* forest under *Lamium galeobdolon*; Vorden, 18.VII.1962, from hole in oak stump; Vorden, 5.VII.1962, soil sample oak forest, in col. NPPO. Common and frequent species in forest soils and (un)fertilized grasslands.

156 planicola (Berlese, 1892) (fig. 7)

Cyrtolaelaps nemorensis var. *planicola*

Veigaia serrata Willmann, 1936

Sas van Goes, 18.XI.2017, ruderal coastal vegetation in soil sample 0-5 cm., in col. HS. Wageningen, experimental fields Plant Protection Service, 31.X.1986; Hoogkarspel, 2.VI.1997, arable land clay soil; records ALT. Lienden, Schuilenburg, XI.1971/III.1972, litterbag wheat straw; Wageningen, experimental fields Plant Protection Service, 19.X.1971, under rye; De Punt, Ouddorp, 16.VI.1966, litter *Ligustrum*, in col. NPPO.

157 serrata Willmann, 1935

Wageningen, experimental fields Plant Protection Service, 8.V.1969, litterbag wheat straw, 9.IV.1964, from grass tussock in orchard, 31.I.1964, under grass-clover, 23.VIII.1962, insecticide treatment, 17.IV.1962, soil sample from lawn, in col. NPPO.

158 transisalae (Oudemans, 1902)

Cyrtolaelaps transisalae

Delden, IV, in decaying leaves (Oudemans 1896, 1903); Vierhouten, Mosterdveen, 2.II.2016, in *Sphagnum*, in col. HS. Uithuizen, 12.X.1970, soil under summer wheat after white clover, in col. NPPO.

Superfamily RHODACAROIDEA

Family DIGAMASELLIDAE

Dendrolaelaps Halbert, 1915

Apophyseodendrolaelaps Hirschmann &

Wiśniewski, 1982

Cornodendrolaelaps Hirschmann &

Wiśniewski, 1982

Dendrolaelaspis Lindquist, 1975

Dalaeidendrolaelaps Wiśniewski &

Hirschmann, 1993

Disetodendrolaelaps Hirschmann &

Wiśniewski, 1982

Duplodendrolaelaps Wiśniewski &

Hirschmann, 1993

Epistodendrolaelaps Hirschmann &

Wiśniewski, 1982

Foveodendrolaelaps Hirschmann &

Wiśniewski, 1982

Insectolaelaps Shcherbak, 1980

Ipidodendrolaelaps Hirschmann &

Wiśniewski, 1982

Luxtondendrolaelaps Wiśniewski &

Hirschmann, 1993

Majestidendrolaelaps Wiśniewski &

Hirschmann, 1993

Monodendrolaelaps Wiśniewski &

Hirschmann, 1993

Multidendrolaelaps Hirschmann, 1974

Oligodentatus Shcherbak, 1980

Presepodendrolaelaps Hirschmann &

Wiśniewski, 1982

Punctodendrolaelaps Hirschmann &

Wiśniewski, 1982

Sellnickidendrolaelaps Hirschmann &

Wiśniewski, 1982

Stanidendrolaelaps Wiśniewski &

Hirschmann, 1993

Xylodendrolaelaps Wiśniewski &

Hirschmann, 1993

159 cornutus (Kramer, 1886)

Seius cornutus

Niersen, Kroondomein, VIII.1966, in burrows

of *Gnathotrichus materiarius* (Fitch, 1858)

(Coleoptera, Scolytidae) in *Pseudotsuga mensiesii*,

in col. NPPO.

160 fimetarius Karg, 1965

Westmaas, 8.V.1978, under sugar beet, in col. NPPO.

161 foveolatus (Leitner, 1949)

Digamasellus foveolatus

Wageningen, Dijkgraaf, 20.XI.1984; Soest,

24.VI.1999; Oldenbroek, 24.VI.1999; Esbeek,

21.VI.1999; Biezenmortel, 23.VI.1999; Nietap,

16.VI.1999; Udenhout, 26.V.1999; Drachten,

29.VI.1999; Borger, 7.VI.1999; Coevorden, 7.VI.1999;

Noordwolde, 3.V.1999; Laren, 22.IV.1999;

Staphorst, 6.IV.1999; Oosterwolde, 14.V.1999;

Raalte, 14.VI.1999; Wintelre, 15.VI.1999; Lunteren,

1.VI.1999; Erp, 8.VI.1999; Kneegsel, 1.VI.1999;

Marienheem, 28.V.1999; Esch, 8.VI.1999; Zeeland,

15.VI.1999; Surhuisterveen, 13.VI.2000; Benne-

kom, Bovenbuurt, 5.IX.2000, all soil samples,

agricultural grassland on sandy soil; Opmeer,

24.V.2000, soil sample grassland sandy clay;

Anna Paulowna, 4.IV.2002, soil sample arable

land marine clay soil; records ALT.

162 halophilus (Willmann, 1951)

Digamasellus halophilus

Saeftinge, 5.V.2016, salt marshes, on green fila-

mentous algae; Terschelling, Eldorado, 17.IX.2016,

soil sample 0-5 cm., in col. HS. Ouddorp,

16.VI.1966, under *Artemisia* and under *Salicornia*,

in col. NPPO.

163 latior (Leitner, 1949)

Digamasellus latior

Wageningen, experimental fields Plant Protection

Service, 31.X.1986; Soest, 24.VI.1999; Esbeek,

21.VI.1999; Hooghalen, 20.V.1999; Oosterwolde,

14.V.1999; Raalte, 14.VI.1999; Wintelre, 15.VI.1999;

Ruurlo, 27.V.1999; Haaren, 16.VI.1999; Esch,

8.VI.1999, all soil samples, agricultural grassland

on sandy soil records ALT.

164 nostricornutus Hirschmann & Wiśniewski, 1982 (fig. 8)

Beekbergen, Lierderholt, 3.XII.2017, from *Fomes fomentarius* on birch, in col. HS.

165 presepum (Berlese, 1918)

Gamasellus presepum

Bennekom, 8.VII.1968, in litter of henhouse;

Sevenum, 8.IX.1966, henhouse, in col. NPPO.

166 rectus Karg, 1962

Den Ham, soil sample below sugar beet, 10.XI.1977, in col. Hs. Bennekom, Bovenbuurt, 20.XI.1984, light fertilized grassland, Wageningen, Droevendaal, 20.XI.1984, and Dijkgraaf, 20.XI.1984 and 20.V.1985; Arnhemse heide, 24.VI.1988; Orvelte, 22.VI.1999; Soest, 24.VI.1999; Udenhout, 26.V.1999; Borger, 7.VI.1999; Laren, 22.IV.1999; Dwingeloo, 19.V.1999; Aalten, 24.IV.1999; Knegsel, 1.VI.1999; Lemelerveld, 19.V.1999; Joppe, 26.IV.1999; Eefde, 27.IV.1999; Hengelo (Gld), 19.IV.1999; Ruurlo, 27.V.1999; Moergestel, 16.VI.1999; Haaren, 16.VI.1999; Esch, 8.VI.1999; Zeeland, 15.VI.1999; Sambeek, 1.VI.1999, all soil samples, agricultural grassland on sandy soil; Surhuisterveen, 13.VI.2000; Eibergen, 11.V.2000; Hengelo (Gld), 26.IV.2000; Laren (Gld), 1.V.2000, all soil sample grassland sandy soil; Laren (NH), Wasmeer, 22.VI.2000 soil sample grassland sewage farm; Enschede, 28.VI.2000; Holten, 18.V.2000; Bathmen, 10.V.2000; Radewijk, 26.IV.2000; Agelo, 11.V.2000; Geesteren (Ov), 22.V.2000; Holten, 16.V.2000; Denekamp, 12.V.2000; Beltrum, 29.V.2000; Geesteren (Gld), 9.V.2000; Barneveld, 4.V.2000; Woudenberg, 19.VI.2000; IJsselsteyn, 21.VI.2000; Schaijk, 23.V.2000, all soil sample grassland sandy soil; records ALT. Wageningen, experimental fields Plant Protection Service, 13.XI.1973, under *Lolium perenne*, 20.IX.1963, under white clover, in col. NPPO. Common and frequent species in grassland soil.

167 samsinaki Hirschmann & Wisniewski, 1982

Midwoud, 6.VI.2000; Eibergen, 11.V.2000; Nutter, 30.V.2000, soil sample grassland sandy soil; Hem, 17.V.2000, soil sample grassland clay soil; Enschede, 28.VI.2000; Bentelo, 15.V.2000; Schalkhaar, 19.V.2000; Woudenberg, 19.VI.2000; Schaijk, 23.V.2000, all soil sample grassland sandy soil; Orvelte, 13.III.2001, soil sample arable land on sandy soil; Drouwen, 12.III.2002; Orvelte, 13.III.2002; Raalte, 13.III.2002, soil sample arable land on sandy soil; Dreischor, 26.III.2002; Domburg, 27.III.2002; Wieringerwerf, 11.III.2002; Oosterbierum, 14.III.2002; Westernieland, 5.IV.2002; Oostkapelle, 20.III.2002,

all soil sample arable land marine clay soil; Houten, 23.IV.2002; Azewijn, 12.IV.2002; Wageningen, 11.IV.2002; Veessen, 28.V.2002; Elst (Gld), 27.V.2002; Bruchem, 4.VI.2002; Cothen, 6.VI.2002; Beneden-Leeuwen, 15.IV.2002; Echteld, 10.IV.2002; Buren (Gld), 25.V.2002; Druten, 3.VI.2002, soil sample grassland on river clay; De Glind, 15.V.2002; Heino, 4.VI.2002; Drachten, 29.V.2002; De Heurne, 22.V.2002; Driebergen, 14.V.2002; Nederweert, 17.V.2002; Vorden, 21.V.2002, soil samples grassland on sandy soil; records ALT. Frequent species in grassland and arable land.

168 septentrionalis (Sellnick, 1958)

Digamasellus septentrionalis

Vorden, 18.VII.1962, in hole in oak stump, in col. NPPO.

169 stammeri Hirschmann, 1960

Wageningen, experimental fields Plant Protection Service, 31.X.1986; records ALT.

170 strenzkei Hirschmann, 1960

Bennekom, Bovenbuurt 20.V.1985 light fertilized grassland; Wageningen, Droevendaal, 20.XI.1984 and 20.V.1985; Aalten, 24.IV.1999; soil sample agricultural grassland on sandy soil; records ALT. Wageningen, experimental fields Plant Protection Service, 16.VII.1965, under *Achillea millefolium* wasteland, 23.VIII.1962, insecticide treatment, in col. NPPO.

171 zwoelferi Hirschmann, 1960

Emmer-Compascuum, 25.X.1965, under grass-clover and under potato, in col. NPPO.

Dendroseius Karg, 1965**172 reticulatus (Sheals, 1956)**

Dendrolaelaps scotarius

Hoge Veluwe, Heiweg, 20.XI.1984, Deelerwoud, 14.I.1988, unfertilized grasslands; Bennekom, light fertilized grassland, 20.XI.1984, soil samples grasslands on sandy soils; Deelerwoud, litterbags with *Deschampsia flexuosa*, 14.IV.1986; Imbos, litterbags with *Deschampsia flexuosa*, 10.VII.1985, 14.VIII.1985, 12.XI.1985, 14.IV.1986, 11.VI.1986 and 3.IX.1986; Bennekom, Bovenbuurt, 23.V.2000, soil sample grassland sandy soil; Enschede, 28.VI.2000; Agelo, 11.V.2000; Geesteren (Ov),

22.v.2000; Bentelo, 15.v.2000; Denekamp, 12.v.2000; Beltrum, 29.v.2000; Voorhuizen, 20.vi.2000; Boxtel, 8.vi.2000, all soil sample grassland sandy soil; Heeten, 12.iii.2001; Nieuwe Pekela, 2.iii.2001, soil sample arable land on sandy soil; Vorden, 3.vii.2001; Bennekom, Bovenbuurt, 23.iv.2001; Drouwen, 6.iii.2001, all soil sample arable land on sandy soil; Budel, 15.x.2001, soil sample heathland on sandy soil; Haps, 8.iii.2002; Raalte, 13.iii.2002; Paterswolde, 13.iii.2002, soil sample arable land on sandy soil; records ALT. Common species in grassland and arable land.

Family RHODACARIDAE

Multidentorhodacarus Karg, 2000

173 *denticulatus* (Berlese, 1921)

Rhodacarus denticulatus
Rhodacarus guevarai Guevara-Benitez, 1974
Hoge Veluwe, Heiweg, 20.v.1985, unfertilized grassland; Bennekom, Bovenbuurt, 20.v.1985, light fertilized grassland soil samples; records ALT.

Rhodacarellus Willmann, 1935

174 *epigynialis* Sheals, 1956

Uithuizen, 18.x.1973, under sugar beet, 18.x.1973, under oat, 12.x.1972, under summer wheat, in col. NPPO.

175 *kreuzi* Karg, 1965

Lelystad, Hollandse hout, Loglife experiment, 11.ii.2016, plot middle 2, in col. HS.

176 *perspicuus* Halašková, 1959

Joppe, 26.iv.1999, soil sample grassland on sandy soil; records ALT.

177 *silesiacus* Willmann, 1935

Wageningen, experimental field Plant disease control, 28.xi.1973, in col. HS. Wageningen, experimental fields Plant Protection Service, 31.x.1986; Deelerwoud, Hoge Veluwe, Heiweg, 20.xi.1984, Deelerwoud, 14.i.1988, all unfertilized grasslands; Bennekom, Bovenbuurt, 20.xi.1984, light fertilized grassland; Wageningen, Droevendaal, 20.xi.1984 and 20.v.1985, agricultural grassland soil samples grasslands on sandy soil;

Dordrecht, 12.xi.1997, floodplain grassland soil; Rotterdam, Kralingen, 12.xi.1997, harbour mud depot; Rotterdam, Maasdijk, 12.xi.1997, harbour mud depot; Twello, 22.ix.1997, old hedgerow, soil sample; Arnhemse heide, 14.i.1988; Oldenbroek, 24.vi.1999; Laren, 22.iv.1999; Aalten, 24.iv.1999; Sambeek, 1.vi.1999, all soil sample agricultural grassland on sandy soil; Nutter, 30.v.2000; Midwoud, 6.vi.2000, soil sample grassland sandy soil; Hem, 17.v.2000, all soil sample grassland clay soil; Barneveld, 4.v.2000; Boxtel, 8.vi.2000; Schaijk, 23.v.2000, all soil sample grassland sandy soil; Siddeburen, 16.ii.2001; Eesergroen, 20.ii.2001, soil sample arable land on sandy soil; Vorden, 3.vii.2001; Bennekom, Bovenbuurt, 23.iv.2001, soil sample arable land on sandy soil; records ALT. Wageningen, experimental fields Plant Protection Service, 24.i.1974, under *Lolium perenne* in greenhouse, 6.v.1963, under white clover treated with aldrin, 18.iv.1962, in soil of lawn, 6.iv.1962, under rye; Achterberg, 20.iii.1969, under summer wheat; Lent, 21.v.1964, under beet; Uithuizen, 18.x.1973, under white clover, 18.x.1973, under sugar beet, 12.x.1970, under summer wheat, in col. NPPO. Common and frequent species in grassland and arable soil.

178 *subterraneus* Willmann, 1935

Noord-Beemster, 2.vi.1997, grassland clay soil; Hiaure, 10.xi.1997, grassland clay soil; Lelystad, 10.xi.1997, grassland clay soil; records ALT.

Rhodacarus Oudemans, 1902

Multidentorhodacarus Shcherbak, 1980

179 *agrestis* Karg, 1971

Nunspeet, 25.ix.1997, old hedgerow, soil sample; records ALT. Wageningen, experimental fields Plant Protection Service, 19.x.1971, under rye; Lienden, 28.i.1969, apple orchard, in col. NPPO.

180 *calcarulatus* Berlese, 1920

Woudenberg, hedgerow, 25.ix.1997, soil 0-5 cm., in col. HS. Deelerwoud, 20.xi.1984, soil sample unfertilized grassland on sandy soil; Wageningen, experimental fields Plant Protection Service, 31.x.1986; Arnhem, harbour area, 24.vii.1992, road verge soil sample; Hoenderloo, old beech forest, 3.v.1994, soil sample; Loenen, old beech

forest, 3.v.1994, soil sample; Ugchelen, old beech forest, 3.v.1994, soil sample; Epe, 22.IX.1997, old hedgerow, soil sample; Klarenbeek, 22.IX.1997, old hedgerow, soil sample; Twello, 22.IX.1997, old hedgerow, soil sample; Aperlo, 25.IX.1997, old hedgerow, soil sample; Elspeet, 25.IX.1997, old hedgerow, soil sample; Garderen, 25.IX.1997, old hedgerow, soil sample; Harskamp, 25.IX.1997, old hedgerow, soil sample; Nunspeet, 25.IX.1997, old hedgerow, soil sample; Stroe, 25.IX.1997, old hedgerow, soil sample; Woudenberg, 25.IX.1997, old hedgerow, soil sample; Gronsveld, Riesen-berg, 17.v.2010; Rijkholt, Savelsbos, 17.v.2010; Oud Valkenburg, Gen Hoes, 19.v.2010; Schin op Geul, Schaelbergbos, 19.v.2010, soil sample forested hills on loess; Bemelen, Bemelerberg, 29.x.2012, soil sample calcareous grassland; records ALT. Wageningen, experimental fields Plant Protection Service, 08.XI.1973, 10.X.1973 and 10.X.1974, under *Lolium perenne*, 2.XI.1971, under perennial rye, grass and white clover, 30.VI.1970, under peas, 8.V.1969, under wheat straw, 3.I.1968, under carrots, 16.VII.1965, under *Achillea millefolium* wasteland, 31.I.1964, under grass-clover, 23.VIII.1962, insecticide treatment, 6.IV.1962, in rye field, x.1958, in soil; Ellecom, 12.XI.1968 and 6.X.1965, under grass-clover, 6.X.1965, under oat, 6.X.1965, under beet, in col. NPP0.

181 clavulatus Athias-Henriot, 1961

Rhodacarus ancorae Karg, 1971

Bennekom, Bovenbuurt, 20.XI.1984, soil sample light fertilized grassland on sandy soil; Wageningen, experimental fields Plant Protection Service, 31.X.1986; Eefde, 27.IV.1999, soil sample grassland sandy soil; Vorden, 3.VII.2001; Bennekom, Boven- buurt, 23.IV.2001, soil sample arable land on sandy soil; records ALT. Wageningen, experimental fields Plant Protection Service, 10.X.1973, under *Lolium perenne*, 26.IV.1972, under potato and cabbage in cylinder with brick sand, 14.IX.1971 and 19.X.1971, under rye, 30.VI.1970, under peas, 8.V.1969, under wheat straw; Achterberg, 21.V.1970, under winter carrots, 20.III.1969, under summer wheat after beet, in col. NPP0.

182 coronatus Berlese, 1920

Ugchelen, Ugchelense bos, soil and litter, 3.v.1994; Hoge Veluwe, Aalderinksveld, 3.XI.2015, soil 0-5 cm., in col. HS. Deelerwoud, Imbos, 20.XI.194 and 20.V.1985; Hoge Veluwe, Heiweg, 20.XI.1984, unfertilized grasslands, Bennekom, Bovenbuurt, 20.XI.1984 and 20.V.1985, light fertilized grassland soil samples grasslands on sandy soil; Deelerwoud, litterbags with *Deschampsia flexuosa*, 12.XI.1985, 14.IV.1986, 11.VI.1986, 3.IX.1986, 15.IV.1987 and 15.VI.1987; Imbos, litterbags with *Deschampsia flexuosa*, 15.IV.1987 and 15.VI.1987; Wageningen, experimental fields Plant Protection Service, 31.X.1986; Deelerwoud, 14.I.1988, unfertilized grassland; Arnhemse heide, 14.I.1988, 24.VI.1988, agricultural grassland; Loon, 19.IV.1993, moist forest soil sample; Taarlo, 19.IV.1993, moist forest soil sample; Ugchelen, old beech forest, 3.v.1994 soil sample; Hooghalen, 20.V.1999; Rijkevoort, 16.VI.1999, all soil samples grassland on sandy soil; Soerendonk, Buulderbroek, 26.VI.2000; Rijen, Boswachterij Dorst, 23.VI.2000; Sterksel, Landgoed De Pan, 9.IX.2000; Diever, Bos- wachterij Smilde, 20.IV.2000; Hilversum, Bos- wachterij De Vuursche, 3.V.2000; Bilthoven, De Leyen, 17.IV.2000; Asten, Galgenberg, 6.VI.2000; Gasselte, Gasselterveld, 21.IV.2000; Norg, Langeloër duinen, 28.IV.2000; Leusden, Leuser- heide, 2.V.2000; Spier, Lheebroekerzand, 25.IV.2000; Breda, Mastbos, 27.VI.2000; Echten, Oldenhaverveld, 27.IV.2000; Ruurlo, Bos- wachterij, 30.V.2000; Kootwijk, De Schotkamp, 8.V.2000; Doetinchem, Slangenburg, 31.V.2000; Vredepeel, 14.VI.2000, all soil samples forest on sandy soil; records ALT. Wageningen, 13.IV.1962, 5-7 cm under *Cerastium arvense*; Wageningen, 9.IV.1964, in orchard grass tussock; Emmer- Compascuum, 25.X.1965, under beet; Garderen, Houtdorperveld, 5.IV.1966, under *Calluna*; Wageningen, experimental fields Plant Protection Service, 30.VI.1970, under peas, 19.X.1971, under rye treated with dieldrin, 25.X.1973, under *Lolium perenne* in greenhouse, in col. NPP0. Common and frequent species in forest and heathland soils.

183 elbius Karg, 1971

Holtten, 3.XI.1977, soil sample below sugar beet

10-20 cm; Ugchelen, 3.v.1994, Ugchelense bos, soil and litter, in col. HS. Wageningen, experimental fields Plant Protection Service, 8.xi.1973 and 10.x.1973, under *Lolium perenne*, 8.v.1969, under wheat straw, 8.v.1969, in litterbag insecticide treatment; Achterberg, 20.iii.1969, under summer wheat, 21.v.1970, under winter carrot; Bunde, 7.v.1967, in litter, in col. NPP0.

184 pallidus Willmann, 1935

Wageningen, experimental fields Plant Protection Service, 2.xi.1965, under *Tagetes*, 16.vii.1965, under *Achillea millefolium* wasteland, 31.i.1964, under grass-clover, 23.viii.1962, insecticide treatment; Achterberg, 8.x.1970, under wintercarrot plowed; Emmer-Compascuum, 25.x.19-55, under grass-clover; Bunde iii.1963, under *Corylus avellana* and *Allium ursinum*; Ellecom, 6.x.1965 under beet; Vorden, 5.vii.1962, soil oak forest, in col. NPP0.

185 roseus Oudemans, 1902

Haarlem, col. Oudemans in col. Naturalis (Buitendijk 1945); Loon op Zand, 14.ix.2017, *Prunus serotina* Ehrh. (1788) forest, soil sample forest on sandy soil, in col. HS; Wageningen, experimental fields Plant Protection Service, 31.x.1986; Klarenbeek, 22.ix.1997, old hedgerow, soil sample; records ALT.

186 strenzkei Willmann, 1957

Kats, 18.xi.2017, in seashore ruderal vegetation soil sample 0-5 cm, in col. HS.

Family OLOGAMASIDAE

Cyrtolaelaps Berlese, 1887

Cyrtolaelaps Trägårdh, 1904

187 mucronatus (G. & R. Canestrini, 1881)

Gamasus mucronatus

Asca affinis Oudemans, 1902

Gamasellus alienus Hull, 1918

Gamasellus rubicundus Hull, 1918

Gamasellus brevispinosus Trägårdh, 1910

Gamasellus major Pintchuk, 1972

Maastricht, 's Gravenhage, Utrecht, Sittard, Valkenburg, col. Oudemans in col. Naturalis (Buitendijk 1945); Holten 16.v.2000, soil sample grassland sandy soil; records ALT.

Euryparasitus Oudemans, 1902

188 emarginatus (C.L. Koch, 1839)

Gamasus emarginatus

Gamasus setiger C.L. Koch, 1839

Gamasus terribilis Michael, 1886

Breda, Sittard, Valkenburg, col. Oudemans in col. Naturalis (Buitendijk 1945); Sneek, V, on *Talpa europaea* Linnaeus, 1758 (Eulipotyphla, Talpidae) (Oudemans 1896, 1903); De Bilt, 1.iii.1965, Betuwe, 26.viii.1980, on *Talpa europaea* Linnaeus, 1758 (Eulipotyphla, Talpidae) fur, in col. Cremers.

Gamasellus Berlese, 1892

Brevisellus Davydova, 1982

Eurysellus Davydova, 1982

Laelogamasus Berlese, 1905

189 sexclavatus Oudemans, 1902

Velp, Medemblik, Grouw, col. Oudemans in col. Naturalis (Buitendijk 1945).

Family HALOLAELAPIDAE

Halolaelaps Berlese & Trouessart, 1889

Halogamasellus Blaszak & Ehrnsberger, 1995

Haloseius Blaszak & Ehrnsberger, 1998

Saintdidieria Oudemans, 1939

Saprogamasellus Götz, 1952

Saproseius Karg, 1965

190 communis (Gotz, 1952)

Saprogamasellus communis

Westmaas, 27.ii.1978, filterpaper package under sugar beet, in col. NPP0.

191 leptoscutatus Karg, 1971

Fijnaart, 14.x.1976, under sugar beet, in col. NPP0.

Leitneria Evans, 1957

192 granulata (Halbert, 1923)

Gamasellus granulatus

Bennekom, Bovenbuurt, 20.xi.1984, soil sample light fertilized grassland on sandy soil; records ALT.

Superfamily EVIPHIDOIDEA

Family EVIPHIDIDAE

Alliphis Halbert, 1923

193 halleri (G. & R. Canestrini, 1881)

Gamasus halleri

Alliphis siculus sensu Karg, 1971, 1993 nec Oudemans, 1905

Alliphis alpinus Schweizer, 1961

Arnhem, Arnhemse heide, *Poo-Lolietum* in vegetation, 14.I.1988, in col. HS. Bennekom, Bovenbuurt, 20.XI.1984 and 20.V.1985, light fertilized grassland; Deelerwoud, litterbags with *Deschampsia flexuosa*, 14.VIII.1985 and 12.XI.1985; Imbos, litterbags with *Deschampsia flexuosa*, 10.VII.1985, 14.VIII.1985, 3.IX.1986 and 15.VI.1987; Wageningen, experimental fields Plant Protection Service 31.X.1986; Wageningen, Droevendaal and Dijkgraaf, 20.XI.1984 and 20.V.1985; Arnhemse heide, 14.I.1988, 24.VI.1988, all soil samples fertilized grassland on sandy soil; Taarlo, 19.IV.1993, moist forest soil sample; Hoog Karspel, 2.VI.1997, arable land clay soil; Noord-Beemster, 2.VI.1997, grassland clay soil; Hiaure, 10.XI.1997, grassland clay soil; Lelystad, 10.XI.1997; grassland clay soil; Dordrecht, 12.XI.1997, floodplain grassland soil; Rotterdam, Maasdijk, 12.XI.1997, harbour mud depot; Kallenkote, 21.VI.1999; Orvelte, 22.VI.1999; Soest, 24.VI.1999; Oldenbroek, 24.VI.1999; Nooitgedacht, 23.VI.1999; Esbeek, 21.VI.1999; Biezenmortel, 23.VI.1999; Udenhout, 26.V.1999, all soil samples agricultural grassland on sandy soil any many more records in grassland soil records ALT. Klundert, spring 1969, under beet; Wageningen, experimental fields Plant Protection Service, 13.III.1973 and 2.X.1974, under *Lolium perenne*, 19.X.1971, under rye insecticide treatment dieldrin, 8.V.1969, litterbag with straw, 30.IX.1964, soil sample, 31.I.1964, under grass-clover, 20.IX.1963, under white clover, 23.VIII.1962, insecticide treatment, 31.III.1962, under rye; Ede, XI.1971/III.1972, litterbag with straw; Lelystad, 15.IV.1969, under white clover; Lent, 21.V.1964, under beet; Bennekom, 15.IV.1964, *Hyacinthus* bulbs, in col. NPP0. Common in (fertilized) grassland soils.

194 sculpturatus Karg, 1963

Borger, 6.VII.1999; Aalten, 24.IV.1999; Oosterwolde,

14.VI.1999; Knegsel, 1.VI.1999; Joppe, 26.IV.1999; Ruurlo, 27.V.1999; Esch, 8.VI.1999; Zeeland, 15.VI.1999; Sambeek, 1.VI.1999; Boxtel, 8.VI.2000, all soil samples grassland on sandy soil; Uithuizermeeden, 22.III.2002, soil sample arable land marine clay soil; records ALT.

Eviphis Berlese, 1903

195 ostrinus (C.L. Koch, 1836)

Iphis ostrinus

Hyletastis ostrinus

Utrecht, Lochem, col. Oudemans in col. Naturalis (Buitendijk 1945); Hoog Soeren, litterbag with faeces of red deer (*Cervus elaphus* Linnaeus, 1758), 15.VI.1989; Slenaken, Grote Bos, moss under *Fraxinus excelsior*, 5.X.2015, in col. HS. Hoog Soeren, forest *Quercus robur*, litterbag with *Deschampsia flexuosa*, 15.VI.1989, 7.VII.1989, 8.IX.1989, 8.III.1990, 8.III.1991; Hoog Soeren, forest *Quercus robur*, litterbag with faeces of red deer (*Cervus elaphus* Linnaeus, 1758), 15.VI.1989, 7.VII.1989, 8.IX.1989, 8.XII.1989; Hoog Soeren 9.XII.1991, forest *Quercus robur*, soil sample; records ALT. Lienden, 4.III.1975, litterbag apple leaves, XI.1971/III.1972, litterbag pear leaves; Uithuizen, 18.X.1973, under sugar beet; Vreeswijk, 14.X.1965, under grass-clover; Epen, Bovenste bos, 12.V.1964, litter *Carpinus* forest under *Lamium galeobdolon*; Wageningen, 9.IV.1964, grass tussock orchard; Bunde, early V.1961, litter *Carpinus* forest under *Corylus avellana*, *Allium ursinum*, *Convallaria majalis* and *Lamium galeobdolon*, in col. NPP0.

Scarabaspis Womersley, 1956

196 inexpectatus (Oudemans, 1903) (fig. 9)

Eumaeus inexpectatus

Hyletastis inexpectatus

Heeze, Strabrechtse heide, in cattle dung, 23.V.2016, in col. HS.

Thinoseius Halbert, 1920

197 fucicola Halbert, 1920

Thinoseius berleseii Halbert, 1920

Lasioseius fucicola Halbert, 1920

Westland, col. Oudemans in col. Naturalis (Buitendijk 1945).

Family MACROCHELIDAE

Geholaspis Berlese, 1918

Cyrtocheles Valle, 1953

Longicheles Valle, 1953

198 aeneus Kraus, 1970

Klarenbeek, hedgerow, 22.IX.1997, soil 0-5 cm., in col. HS. Garderen, 25.IX.1997, old hedgerow, soil sample; Harskamp, 25.IX.1997, old hedgerow, soil sample; records ALT.

199 longispinosus (Kramer, 1876)

Gamasus longispinosus

Macrocheles castaneus Hull, 1925

Haarlem, Burgst bij Breda, Delden, col. Oudemans in col. Naturalis (Buitendijk 1945); Zegveld, *Cirsio-Molinietum*, 29.VI.1992, soil 0-5 cm., in col. HS. Hoog Soeren, forest *Quercus robur*, litterbag with *Deschampsia flexuosa*, 15.VI.1989, 7.VII.1989, 8.XII.1989, 12.XII.1990, 8.III.1991; Hoog Soeren, forest *Quercus robur*, litterbag with faeces of red deer (*Cervus elaphus* Linnaeus, 1758), 22.V.1989, 15.VI.1989, 7.VII.1989, 8.XII.1989, 8.IX.1990, 12.XII.1990; Hoog Soeren, 9.XII.1991, forest *Quercus robur*, soil sample; Tilburg, Vloei-velden, 15.V.2000, soil sample grassland sewage farm; records ALT. Ede, XI/III.1972, litterbag pear leaves under *Carpinus* hedge; Winterswijk, XII.1969, litter oak forest, in col. NPPO.

200 mandibularis (Berlese, 1904)

Holostaspis mandibularis

Macrocheles minimus Hull, 1918

Beekbergen, Elsbosweg, side of ditch in *Mnium hornum*, 14.VII.1991, in col. HS. Wageningen, experimental fields Plant Protection Service, 31.X.1986; Soerendonk, Buulderbroek, 26.VI.2000; Breda, Mastbos, 27.VI.2000, soil sample forest on sandy soil; Haulerwijk, Blauwe Bos, 31.X.2011, soil sample heathland on sandy soil; records ALT. Lienden, 4.III.1975, litterbag apple leaves 'Cox orange', 18.VIII.1970 and XI/III.1972, litterbag wheat straw, 28.I.1969, soil under apple tree; Ede, XI/III.1972, litterbag pear leaves under *Carpinus* hedge; Uithuizen, 2.X.1970, under summer wheat after beet; Bunde, v.1961, in litter of *Carpinus* under *Vinca minor* and *Hedera helix*; Vreeswijk, Hagestein, 14.X.1965, under grass-clover; Vrees-

wijk, 14-10-1965, under oat; Vorden, 18.VII.1962, in moss on oak stump; Wageningen, 8.V.1969, insecticide treatment control, in col. NPPO.

201 ponticus Bregetova & Koroleva, 1960

Hoog Soeren, litterbag with faeces of red deer (*Cervus elaphus* Linnaeus, 1758), 15.VI.1989, in col. HS.

Holostaspella Berlese, 1903

Aethiolaspis Van Driel & Loots, 1975

Areolaspis Trägårdh, 1952

202 ornata Oudemans, 1931

's Gravenhage, col. Oudemans in col. Naturalis (Buitendijk 1945); Wageningen, autumn 1958, compost, in col. NPPO.

Macrocheles Latreille, 1829

Macrholaspis Oudemans, 1931

203 carinatus (C.L. Koch, 1839)

Gamasus carinatus

Wageningen, Droevendaal, 20.XI.1984; Dwingeloo, 19.V.1999; Erp, 8.VI.1999; Aalten, 24.IV.1999, all agricultural grassland on sandy soil; Soerendonk, Buulderbroek, 26.VI.2000, soil sample forest on sandy soil; Laren (Gld), 1.V.2000 soil sample grassland sandy soil; Geesteren (Ov), 22.V.2000; Bentelo, 15.V.2000; Holten, 16.V.2000; Schaijk, 23.V.2000, all soil sample grassland sandy soil; Schoonebeek, 15.II.2001; Vledderveen, 22.II.2001; Sellingen, 7.III.2001; Raalte, 13.III.2002, all soil sample arable land on sandy soil; Zijderveld, 17.V.2002; Elst (Gld), 23.V.2002; Ooij (Ubbergen), 26.IV.2002; Echteld, 10.IV.2002; Ravenstein, 21.V.2002, all soil sample grassland on river clay; De Glind, 15.V.2002; Heino, 4.VI.2002; Esbeek, 16.V.2002, all soil samples grassland on sandy soil; Heerlen, 17.VI.2003; Gulpen, 1.VII.2003, soil sample grassland on loess; Waarder, 9.IV.2003; Reeuwijk, 8.IV.2003; Goudriaan, 18.IV.2003; Broek in Waterland, 3.IV.2003, all soil samples grassland on peat soil; records ALT. Wageningen, 13.VI.1973, under *Lolium perenne*; Elburg, 18.X.1966, soil sample pasture, in col. NPPO. Frequent species in agricultural soils.

204 decoloratus (C.L. Koch, 1839)

Gamasus decoloratus

- Maastricht, Sittard, Aalbeek, col. Oudemans in col. *Naturalis* (Buitendijk 1945); Loon op Zand, 14.IX.2017, *Prunus serotina* Ehrh. (1788) forest, soil sample forest on sandy soil, in col. HS; Wageningen, experimental fields Plant Protection Service, 23.VIII.1962, insecticide treatment; Bunde, v.1967, litter in *Carpinus* forest under *Vinca minor* and *Hedera helix*; Vorden, 18.VII.1962, from moss on oak stump, in col. Nppo.
- 205 dentatus (Evans & Browning, 1956)**
Macrophaspis dentatus
Epe, Vemde, hedgerow, 22.IX.1997, soil 0-5 cm., in col. HS. Garderen, 25.IX.1997, old hedgerow, soil sample; Stroe, 25.IX.1997, old hedgerow, soil sample; records ALT.
- 206 glaber (Mueller, 1860)**
Cophrolaspis glaber
Gamasus stercorarius Kramer, 1876
Holostaspis glaber
Macrocheles subglaber Filliponi, 1959
Utrecht 28.VIII.1957, on *Microtus arvalis* (Pallas, 1778) (Rodentia, Muridae) fur; Rotterdam Blijdorp Zoo, vi.1998 on *Eudicella smithi* MacLeay, 1838 (Coleoptera, Scarabaeidae); Netherlands 1990 on *Meles meles* (Linnaeus, 1758) (Carnivora, Mustelidae) fur; Wageningen, iv.1989, in dunghill poultry-farm, in col. Cremers; Wageningen, Dijkgraaf, 20.XI.1984; Elzendorp, Lindenlaan, 13.I.1978, below turf 0-2.5 cm., in col. HS.; Wageningen, experimental fields Plant Protection Service, 31.X.1986; Arnhemse heide, 14.I.1988; Kallenkote, 21.VI.1999; Oldenbroek, 24.VI.1999; Dwingeloo, 19.V.1999; Wintelre, 15.VI.1999; Knegsel, 1.VI.1999; Hengelo (Gld), 19.IV.1999; Moergestel, 16.VI.1999, all soil samples on agricultural grasslands on sandy soil; Hengelo (Gld), 26.IV.2000 soil sample grassland sandy soil; Enschede, 28.VI.2000; Geesteren (Ov), 22.V.2000; Bentelo, 15.V.2000; Denekamp, 12.V.2000; Beltrum, 29.V.2000; Schalkhaar, 19.V.2000; Geesteren (Gld), 9.V.2000; Voorthuizen, 20.VI.2000; Woudenberg, 19.VI.2000; IJsselsteyn, 21.VI.2000, all soil sample grassland sandy soil; Sellingen, 7.III.2001, soil sample arable land on sandy soil; Uithuizermeeden, 22.III.2002, soil sample arable land marine clay soil; Gulpen, 1.VII.2003, soil sample grassland on loess; Noordeloos, 31.III.2003, soil sample grassland on peat soil; records ALT. Vierpolders, 28.XI.1994, on *Geotrupes spiniger* (Marsham, 1802) (Scarabaeidae); Merselo, 3.X.1993, in stable on dung beetles; Ede XI/III.1972, in leaves under *Carpinus* hedge, 19.V.1972, from plant debris under *Carpinus* hedge; Wageningen, autumn 1958, from compost; Lisse, 27.VIII.1953, in col. Nppo. Frequent species in agricultural soils.
- 207 mammifer Berlese, 1918**
Eindhoven, Genneperparken, 14.IV.2006, soil sample city park; records ALT.
- 208 matrius (Hull, 1925)**
Nothrolaspis matrius
Oudleusen, 10.V.2000, in col. Nppo.
- 209 merdarius (Berlese, 1889)**
Holostaspis merdarius
Kerkdriel, 25-II-1957, mushroom manure, in col. Nppo.
- 210 montanus (Willmann, 1951)**
Nothrolaspis montanus
Rijckholt, Savelsbos, 21.IV.1994, litter below *Allium ursinum*; Slenaken, Grote Bos, hollow road, 5.X.2015, litter below *Fraxinus excelsior* in col. HS. Anloo, Drentse Aa, 14.X.1992, light fertilized moist grassland soil sample; records ALT.
- 211 muscaedomesticae (Scopoli, 1772)**
Acarus muscaedomesticae
Utrecht, VIII.1965 on *Musca domestica* Linnaeus, 1758 (Diptera, Muscidae), col. *Naturalis*; Utrecht IX.1981, on *Musca domestica* Linnaeus, 1758 (Diptera, Muscidae); Netherlands, 21.VIII.2008, on *Canis lupus familiaris* Linnaeus, 1758 (Carnivora, Canidae) fur, in col. Cremers; Oude Maas, Griend op de Beerenplaat, 18.IX.1975, in pitted; Orvelte, 22.VI.1999; Ruinen, 27.V.1999; Tynaarlo 12.V.1999; Aalten, 24.IV.1999; Oosterwolde, 14.VI.1999; Dalfsen, 1.VI.1999; Holten, 18.V.2000; Geesteren (Gld), 9.V.2000; Voorthuizen, 20.VI.2000; Woudenberg, 19.VI.2000; Udenhout, 7.IV.2014, all soil samples grassland on sandy soil; Pieterburen, 21.III.2002, soil sample arable land marine clay soil; Sint Maartensdijk, 15.IV.2010; Burgwerd, 7.IV.2010; Harlingen,

- 20.IV.2010; Beemster, 22.IV.2010; Hei en Boeicop, 8.IV.2013, all soil sample grassland on marine clay soil; Werkhoven, 23.V.2011; Meteren 24.V.2011, soil sample fruit cultivation; Lelystad 9.XI.2012, soil sample arable land on marine clay soil; Stolkwijk, 1.V.2013; De Rijp, 20.III.2014, soil sample grassland on peat soil; records ALT. Zevenhuizen, 1.IX.1988, under *Valerianella locusta* in greenhouse; Rozendaal, 23.III.1972, on *Stomoxys calcitrans* (Linnaeus, 1758) (Diptera, Muscidae), in greenhouse with cucumbers; Bennenkom, VII.1968, in chicken manure; Schagen, II.X.1961, on *Musca domestica* Linnaeus, 1758 (Diptera, Muscidae), in col. NPPO.
- 212 nataliae Bregetova & Koroleva, 1960**
Sas van Goes, 18.XI.2017, ruderal coastal vegetation, soil 0-5 cm, in col. HS.
- 213 opacus (C.L. Koch, 1839)**
Gamasus opacus
Beekbergen, Nieuw Dennenlust, II.VII.1989, litter of *Thuja* sp., in col. HS. Deelerwoud, 20.V.1985, unfertilized grassland soil sample; Deelerwoud, litterbags with *Deschampsia flexuosa*, 14.VIII.1985; Twello, 22.IX.1997, old hedgerow, soil sample; records ALT. Bunde, early V.1967, litter *Carpinus* forest under *Corylus* with *Oxalis*, *Lamium galeobdolon*, *Allium ursinum* and *Convallaria majalis*, in col. NPPO.
- 214 penicilliger (Berlese, 1904)**
Holostaspis penicilliger
Rotterdam (Blijdorp Zoo), 20.VI.2008, on *Platalea leucorodia* Linnaeus, 1758 (Pelecaniformes, Threskiornithidae) feathers, in col. Cremers; Bennekom, Bovenbuurt, 20.V.1985, light fertilized grassland; Wageningen, Droe-vendaal, 20.XI.1984; Wageningen, Dijkgraaf, 20.V.1985; Denekamp, 12.V.2000; Heino, 9.X.2007, all soil samples agricultural grassland; Breda, Mastbos, 26.X.2000, soil sample forest sandy soil; records ALT. Wageningen, experimental fields Plant Protection Service, 22.IX.1964, insecticide treatment control; Wageningen, 31.I.1958, on *Pogona vitticeps* Ahl, 1925 (Squamata, Agamidae), in col. NPPO.
- 215 peniculatus Berlese, 1918**
Hagestein, 17.III.1966, under oat, in col. NPPO.
- 216 pisentii (Berlese, 1882)**
Gamasus pisentii
Bennenkom, VII.1968, in litter henhouse, in col. NPPO.
- 217 robustulus (Berlese, 1904) (fig. 10)**
Gamasus robustulus
Aalsmeer, 1.IX.2014, under *Anemone*; Aalsmeer, 21.XII.1995, under *Freesia*, in col. NPPO.
- 218 tardus (C.L. Koch, 1844)**
Gamasus tardus
Wageningen, experimental fields Plant Protection Service, 2.X.1974, under *Lolium perenne*; Winterswijk, XII.1969, litter oak forest, in col. NPPO.
- 219 tridentinus G. & R. Canestrini, 1884**
Haarlem, Brummen, col. Oudemans in col. Naturalis (Buitendijk 1945).
- 220 vagabundus (Berlese, 1889)**
Gamasus vagabundus
Wageningen, 1.X.1958, in compost, in col. NPPO.
- 221 vernalis (Berlese, 1887)**
Holostaspis vernalis
Velp, Arnhem, col. Oudemans in col. Naturalis (Buitendijk 1945); Heeze, Strabrechtse heide, in cattle dung, 23.V.2016, in col. HS.

Family PACHYLAELAPIDAE

Pachylaelaps Berlese, 1886

222 bellicosus Berlese, 1920

Hoog Soeren, litterbag with faeces of red deer (*Cervus elaphus* Linnaeus, 1758), 15.VI.1989; Ugchelen, Ugchelense bos, soil and litter, 3.V.1994 in col. HS. Hoog Soeren, forest *Quercus robur*, litterbag with *Deschampsia flexuosa*, 8.VI.1990, 8.IX.1990; Hoog Soeren, forest *Quercus robur*, litterbag with faeces of red deer (*Cervus elaphus* Linnaeus, 1758), 15.VI.1989, 8.VI.1990, 8.IX.1990, 12.XII.1990, 8.III.1991; Hoog Soeren, 9.XII.1991, forest *Quercus robur*, soil sample; Loenen, old beech forest, 3.V.1994, soil sample; Ugchelen, old beech forest, 3.V.1994, soil sample; Hoog Karspel, 2.VI.1997, arable land clay soil; Noord-Beemster, 2.VI.1997, grassland clay soil;

- Hiaure, 10.XI.1997, grassland clay soil; Epe, 22.IX.1997, old hedgerow, soil sample; Harskamp, 25.IX.1997, old hedgerow, soil sample; Rijkholt, Savelsbos, 17.V.2010, soil sample forested hills on loess; Sallandse Heuvelrug, 9.IX.2011, soil sample heathland; records ALT. Wageningen, experimental fields Plant Protection Service, 4.V.1971, under grass and white clover, 2.XI.1965, under *Tagetes*, 23.VIII.1962 and 30.IX.1964, soil samples insecticide treatment; Bunde, v.1967, *Stellario-Carpinetum* under *Vinca minor* and *Hedera helix*; Emmer-Compascuum, 25.X.1965, under beet, in col. NPP0.
- 223 ensifer Oudemans, 1904**
Nijkerk, col. Oudemans in col. Naturalis (Buitendijk 1945).
- 224 furcifer Oudemans, 1903**
Arnhem, Haarlem, V, in decaying leaves (Oudemans 1896, 1903).
- 225 fuscifuliger Berlese, 1921**
Bunde, v.1967, *Stellario-Carpinetum* under *Vinca minor* and *Hedera helix*, in col. NPP0.
- 226 hispani Berlese, 1903**
Dordrecht, meadow, 12.XI.1997, soil 0-5 cm., in col. HS. Hoge Veluwe, Heiweg, 20.V.1985, unfertilized grassland; Bennekom, Bovenbuurt, 20.XI.1984 and 20.V.1985, light fertilized grassland; Hiaure, 10.XI.1997, grassland clay soil; Dordrecht, 12.XI.1997, floodplain grassland soil; Rotterdam, Maasdijk, 12.XI.1997, harbour mud depot; Wageningen, Dijkgraaf, 20.XI.1984; Esbeek, 21.VI.1999; Kneysel, 1.VI.1999; Esch, 8.VI.1999, all soil samples agricultural grassland on sandy soil; Zijderveld, 17.V.2002; Azewijn, 12.IV.2002; Wageningen, 11.IV.2002; Vuren, 22.IV.2002; Elst (Gld), 23.V.2002; Acquoy, 3.V.2002; Buren (Gld), 25.V.2002; Maasbommel, 30.V.2002; Druten, 3.VI.2002; Ravenstein, 21.V.2002, all soil sample grassland on river clay; Driebergen, 14.V.2002, soil sample grassland on sandy soil; Mechelen, 27.VI.2003, soil sample grassland on loess; records ALT.
- 227 imitans Berlese, 1920**
Twello, hedgerow, 22.IX.1997, soil 0-5 cm., in col. HS. Twello, 22.IX.1997, old hedgerow, soil sample; Aperlo, 25.IX.1997, old hedgerow, soil sample; Elspeet, 25.IX.1997, old hedgerow, soil sample; Garderen, 25.IX.1997, old hedgerow, soil sample; Harskamp, 25.IX.1997, old hedgerow, soil sample; Schaijk, 25.VI.2007, soil sample grassland on sandy soil; Zieuwent, Koolmansdijk, 19.V.2009, soil sample heathy grassland; Berkenwoude, 20.IV.2010, soil sample grassland on peat soil; Vredepeel, 24.III.2011, soil sample arable land sandy soil; Nieuwegein, 11.III.2014, soil sample orchard riverine clay soil; records ALT.
- 228 karawaiewi Berlese, 1920**
Midwoud, 6.VI.2000; Holten, 18.V.2000; Bennekom, Bovenbuurt, 22.II.2000, 23.V.2000, all soil sample grassland on sandy soil; Drogenham, 2.V.2002; Augustinusga, 2.VI.2004, soil sample grassland loamy sand; records ALT. Wageningen, experimental fields Plant Protection Service, 2.X.1975, under *Lolium perenne*; Akmarijp, 11.X.1966, fen meadow (*Cirsio dissecti-Molinietum*) under *Caltha palustris*, in col. NPP0.
- 229 laeuchlii Schweitzer, 1922**
Epe, Vemde, hedgerow, 22.IX.1997, soil 0-5 cm., in col. HS. Leeuwarden, Vossepark, 4.V.2006, soil sample city park; Wijnandsrade, 26.XI.2007, soil sample arable land on loess; Gronsveld, Riesenbergh, 17.V.2010, soil sample forested hills on loess; Werkhoven, 23.V.2011, soil sample fruit cultivation; IJzendijke, 7.IV.2014, soil sample arable land on marine clay soil; records ALT.
- 230 latior Berlese, 1920**
Winterswijk, Meerdink, XII.1969, litter oak forest; Lienden, Schuilenburg, 28.I.1969, soil sample under apple tree, in col. NPP0.
- 231 longisetus Halbert, 1915**
Epe, Vemde, hedgerow, 22.IX.1997, soil 0-5 cm., in col. HS. Laren 22.IV.1999, grassland sandy soil; Utrecht, Zocherplantsoen, 6.IV.2006, soil sample city park; records ALT. Winterswijk, Meerdink, XII.1969, litter oak forest, in col. NPP0.
- 232 magnus Halbert, 1915**
Pachylaelaps troglophilus Willmann, 1940
Beekbergen, Nieuw Dennenlust, 19.VIII.2017, compostheap, in col. HS. Leeuwarden, Vossepark, 4.V.2006, soil sample city park; records ALT. Westmaas, 16.V.1978, under sugar beet; Bergen

op Zoom, 11.I.1973, under beet (in greenhouse), in col. NPPO.

233 multidentatus Evans & Hyatt, 1956

Putten, Schovenhorst, Loglife experiment, litter and soil 0-5 cm., 11.II.2016, in col. Hs. Soerendonk, Buulderbroek, 26.VI.2000; Sterksel, Landgoed De Pan, 9.IX.2000, 12.X.2007; Hilversum, Boswachterij De Vuursche, 3.V.2000; Bilthoven, De Leyen, 17.IV.2000, 13.VII.2007, 2.IV.2014; Rheeze, Diffeleveld, 26.V.2000; Grollo, Boswachterij, 18.IV.2000, 21.IX.2007; Gasselte, Gasselteveld, 21.IV.2000; Norg, Langeloër duinen, 28.IV.2000, 10.V.2007; Spier, Lheebroekerzand, 25.IV.2000, 1.IV.2014; Breda, Mastbos, 27.VI.2000, 26.X.2007, 31.III.2014; Echten, Oldenhaverveld, 27.IV.2000; Ruurlo, Boswachterij, 30.V.2000, 14.IX.2007; Kootwijk, De Schotkamp, 8.V.2000, 14.IX.2007, 27.III.2014; Moergestel, Kerkeindse heide, 18.X.2007; Doorwerth, 11.VI.2007; Heeze, 13.VI.2007; Ulvenhout, 14.VI.2007; Uddel, Kroondomein, 19.V.2005; Epe, Feithenhof, 19.V.2005; Goirle, Riels Hoefke, 17.VI.2005; Rozendaal, 13.V.2005; Maarsbergen, 10.V.2005; Ampsen, 11.V.2005; De Steeg, Middachten, 13.V.2005; Lettele, Oostermaet, 18.V.2005, all soil sample forest on sandy soil; records ALT.

234 pectinifer (G. & R. Canestrini, 1881)

Gamasus pectinifer

Pachylaelaps lindrothi Sellnick, 1940

Wageningen, Ossekampen 3.V.2001, soil sample grassland on river clay soil; records ALT. Ellecom, 6.X.1965, under *Tagetes*; Bennekom, 15.IV.1964, *Hyacinthus* bulbs; Wageningen, experimental fields Plant Protection Service, 9.IX.1963, under swede, in col. NPPO.

235 regularis Berlese, 1920

Numansdorp, 3.XII.1975, under beet, in col. NPPO.

236 tablasoti Schweizer, 1961

Klundert, spring 1969, under beet; Bunde, early V.1967, in litter *Stellario-Carpinetum* under *Corylus avellana*, *Oxalis* sp., *Allium ursinum*, *Convallaria majalis* and *Lamium galeobdolon*, in col. NPPO.

237 tessellatus Berlese, 1920

Soerendonk, Buulderbroek, 26.VI.2000, soil sample forest on sandy soil; Laren (NH), Wasmee, 22.VI.2000, soil sample grassland sewage farm;

Wageningen, Ossekampen, 3.V.2001, soil sample grassland on river clay soil; Uithuizermeeden, 22.III.2002; Zaamslag, 16.V.2002; Wieringerwerf, 11.III.2002; Pieterzijl, 12.III.2002; Oostkapelle, 20.III.2002; Hitzum, 22.IV.2003; Tzum, 14.IV.2003; Jislum, 13.V.2003; Barsingerhorn, 16.V.2003; Bolsward, 21.V.2003; Britswerd, 9.V.2003, all soil sample arable land marine clay soil; Polsbroek, 4.IV.2003; Broek in Waterland, 3.IV.2003; Amsterdam, 25.III.2003; Oosthuizen, 28.III.2003; Ottoland, 25.V.2008; Purmerend, 28.IV.2010; Reeuwijk, 21.IV.2010; Berkenwoude, 20.IV.2010; Achttienhoven, 27.IV.2010; Gouda, 20.IV.2010, all soil samples grassland on peat soil; Langenholtte, 21.IV.2004, soil samples semi-natural grassland sandy soil; Bakel, 10.X.2005; Damwoude, 10.V.2007, soil sample grassland on sandy soil; Zaamslag, 2.IV.2009; Wieringerwerf, 23.III.2009; Middenmeer, 23.III.2009; Hensbroek, 27.III.2009, soil sample grassland on marine clay soil; Ooij (Ubbergen), 26.V.2009, soil sample grassland on river clay soil; records ALT. Frequent species on moist arable land and grassland soils.

238 undulatus Evans & Hyatt, 1956

Steenbergen, 6.X.1976, under winter wheat, in col. NPPO.

239 vexillifer Willmann, 1961

Boxtel, 8.VI.2000, soil sample grassland sandy soil; records ALT.

240 virago Berlese, 1920

Uithuizen, 12.X.1970, under summer wheat after beet, in col. NPPO.

Pachyseius Berlese, 1910

241 angustus Hyatt, 1956

Wijnandsrade, 26.XI.2007, soil sample arable land on loess; Elkenrade, Wrakelberg, 20.XI.2007, soil sample calcareous grassland; records ALT.

242 humeralis Berlese, 1910

Vredepeel, 7.III.2002, soil sample arable land on sandy soil; records ALT.

Sphaerolaelaps Berlese, 1903

243 holothyroides (Leonardi, 1896)

Laelaps holothyroides

Putten, col. Oudemans in col. Naturalis (Buitendijk 1945).

Family PARHOLASPIDIDAE

Holaspina Berlese, 1917

244 *alstoni* (Evans, 1956)

Parholaspulus alstoni

Wageningen, 24.VIII.1974/11.XI.1974, litterbag pear leaves control; Lent, autumn 1961, in potting soil *Anthurium scherzerianum*, in col. NPP0.

Family PSEUDOLAEALPIDAE

Pseudolaelaps Berlese, 1916

245 *doderoi* (Berlese, 1910)

Laelaps doderoi

Ossensisse, lower part seawall in washed up litter, 30.IV.2016, in col. HS. Wageningen, Ossekampen, 3.V.2001, soil sample grassland on river clay soil; Retranchement, 14.V.2002; Hansweert, 12.V.2003, soil sample arable land marine clay soil; Bemelen, Bemelerberg, 20.XI.2007 and 2.VI.2010; 't Rooth, Het Hoefijzer, 2.VI.2010; Cadier en Keer, Schiepersberg, 2.VI.2010, all soil sample calcareous grassland; records ALT.

Superfamily ASCOIDEA

Family AMEROSEIIDAE

Ameroseius Berlese, 1903

Cornubia Turk, 1943

246 *corbiculus* (Sowerby, 1806)

Acarus corbicula

Ameroseius crassisetosus Ye & Ma, 1993

Ameroseius qinghaiensis Li & Yang, 2000

Ameroseius norvegicus Narita, Abduch & Moraes, 2015

Cornubia ornata Turk, 1943

Seius echinatus C.L. Koch, 1839

Seius hirsutus Berlese, 1887

Arnhem, Valkeveen, col. Oudemans in col. Naturalis (Buitendijk 1945); Hoogvliet, Westpunt, 23.V.2006, soil sample city park; Follega, 29.V.2008, soil sample grassland on peat soil; Druten, 11.V.2009, soil sample grassland on river clay soil; Purmerend, 28.IV.2010; Reeuwijk,

21.IV.2010; Gouda, 20.IV.2010, all soil sample grassland on peat soil; Britswerd, 19.IV.2010, soil sample grassland on marine clay soil; records ALT. Wageningen, 13.XI.1973, under *Lolium perenne*, 2.XI.1971, under grass and clover, IX.1968, under peas; Lienden, Schuilenburg, 12.I.1971, stem apple; Bunde, V.1961, litter *Stellario-Carpinetum*, in col. NPP0.

Epicriopsis Berlese, 1916

247 *horrida* (Kramer, 1876)

Gamasus horridus

Epicrius mollis Berlese, 1887 nec *Epicrius mollis* (Kramer, 1876) = *Gamasus mollis*

Epicrius berlesei Oudemans, 1939

Delden, col. Oudemans in col. Naturalis (Buitendijk 1945); Anloo, Drentse Aa, 14.X.1992, light fertilized moist grassland soil sample; Hoogvliet, Westpunt, 23.V.2006, soil sample city park; Kekerkdom, 14.V.2009, soil sample grassland on river clay soil; Elkenrade, Wrakelberg, 22.XI.2011, soil sample calcareous grassland; records ALT.

248 *palustris* Karg, 1971

Epicriopsis langei Livshits & Mitrofanov, 1975

Epicriopsis baloghi Kandil, 1978

Diever, Oude Willem, 26.V.2004, soil samples semi-natural grassland sandy soil; De Lutte, 26.X.2005; Heino, 9.X.2007, soil sample grassland on sandy soil; Rotterdam, Polder de Esch, 24.V.2006, soil sample city park; De Lutte, 2.X.2009, soil sample grassland on sandy soil; Oosterlittens, 19.IV.2010; Burgwerd, 7.IV.2010; Oosterend, 13.IV.2010; Britswerd, 19.IV.2010, soil samples grassland on marine clay soil; records ALT.

Kleemannia Oudemans, 1930

Primoseius Womersley, 1956

249 *pavidus* (C.L. Koch, 1839)

Zercon pavidus

Ameroseius lanceosetis Livshits & Mitrofanov, 1975
Arnhem, Wapenveld, Hengelo, Franeker, Sneek, col. Oudemans in col. Naturalis (Buitendijk 1945); Rotterdam, 8.VIII.1964, insulating material in boiler with *Eurotium herbariorum* (F.H. Wigg.) Link, 1809 (Ascomycota, Trichomaceae); Roermond, 5.X.1960, in pressed hay, in col. NPP0.

- 250 **plumea Oudemans, 1930**
Ameroseius tauricus Livshits & Mitrofanov, 1975
 Arnhem, col. Oudemans in col. Naturalis
 (Buitendijk 1945).
- 251 **plumigera Oudemans, 1930**
Zercoseius gracei Hughes, 1948
Ameroseius gilarovi Petrova, 1986
 Den Helder, col. Oudemans in col. Naturalis
 (Buitendijk 1945).
- 252 **plumosus Oudemans, 1902**
Seiulus plumosus
Ameroseius dubitatus Berlese, 1918
Zercoseius macauleyi Hughes, 1948
 Arnhem, Sneek, col. Oudemans in col. Naturalis
 (Buitendijk 1945); Nieuwerkerk, 25.VIII.1987,
 in shed; Wageningen, 11.IX.1962, soil sample
 insecticide treatment, in col. NPP0.
- Family ASCIDAE**
- Antennoseius Berlese, 1916**
Vitzthumia Thor, 1930
- 253 **avius Karg, 1976**
 Bemelen, Bemelerberg, 2.VI.2010; 't Rooth,
 Het Hoefijzer, 2.VI.2010, soil sample calcareous
 grassland; records ALT.
- 254 **bacatosimilis Karg, 1965**
 Bakel, 10.X.2005, soil sample grassland on sandy
 soil; Elsloo, Schaopedobbe, 13.V.2009, soil sample
 heathy grassland; Kootwijk, Kootwijkerzand,
 23.XI.2006, 30.III.2009, soil sample inland drift
 sand; Lemelerberg, 11.XII.2006; Loonse en
 Drunense Duinen, 5.XII.2006; Gasselte,
 Drouwenerzand, 12.XII.2006; Otterlo, Otterlose
 zand, 17.IV.2009, soil sample inland drift sand;
 Kekerdome, 14.V.2009, soil sample grassland on
 river clay soil; Strabrechtse heide, 2.X.2013, soil
 sample heathland soil; records ALT.
- 255 **bacatus Athias-Henriot, 1961**
 Hoge Veluwe, Aalderinksveld, 3.XI.2015, soil
 0-5 cm., in col. HS.
- 256 **borussicus Sellnick, 1945**
Antennoseius rarus Pinchuk, 1972
Vitzthumia magniscutum Weis-Fogh, 1947
 Wageningen, experimental fields Plant Protection
 Service, 4.I.1977, under *Lolium perenne*; Oud-
 dorp, Westduinen, 16.VI.1966, south slope under
Rumex acetosella, *Galium* sp., *Festuca* sp. and
Ononis repens, in col. NPP0.
- 257 **bullitus Karg, 1969**
 Wageningen, experimental fields Plant Protection
 Service, 24.VIII.1977, under *Lolium perenne*, in
 col. NPP0.
- 258 **delicatus Berlese, 1916**
 Deelerwoud, 20.V.1985, unfertilized grassland soil
 sample; Meilahuzen, 29.IV.2014, soil sample
 grassland on marine clay soil; records ALT.
- Arctoseius Thor, 1930**
Arctoseiopsis Evans, 1954
Arctoseiulus Willmann, 1949
Arctotarseius Willmann, 1949
Proctoseiella Athias-Henriot, 1973
Tristomus Hughes, 1948
- 259 **cetratus (Sellnick, 1940)**
Lasioseius cetratus
Arctoseius bispinatus Weis-Fogh, 1947
Arctoseius halophilus Willmann, 1949
Arctoseius erlangensis Hirschmann, 1951
 Deelerwoud, 20.XI.1984, unfertilized grassland;
 Bennekom, Bovenbuurt, 20.XI.1984 and
 20.V.1985, light fertilized grassland, Wageningen
 Droevendaal 20.XI.1984 and 20.V.1985 and
 Dijkgraaf agricultural grasslands; Deelerwoud,
 litterbags with *Deschampsia flexuosa*, 14.VIII.1985
 and 12.XI.1985; Imbos, litterbags with *Deschampsia*
flexuosa, 10.VII.1985, 14.VIII.1985, 12.XI.1985,
 14.IV.1986 and 11.VI.1986; Wageningen, experi-
 mental fields Plant Protection Service, 31.X.1986;
 Hoog Soeren, forest *Quercus robur*, litterbag with
Deschampsia flexuosa, 15.VI.1989, 7.VII.1989,
 8.IX.1989, 8.III.1991; Hoog Soeren, forest *Quercus*
robur, litterbag with faeces of red deer (*Cervus*
elaphus Linnaeus, 1758), 15.VI.1989, 7.VII.1989,
 8.IX.1989; Hoog Karspel 2.VI.1997 arable land
 clay soil; Noord-Beemster, 2.VI.1997, grassland
 clay soil; Kallenkote, 21.VI.1999; Orvelte, 22.VI.1999;
 Soest, 24.VI.1999; Oldenbroek, 24.VI.1999; Nooit-
 gedacht, 23.VI.1999; Esbeek, 21.VI.1999; Biezen-
 mortel, 23.VI.1999; Nietap, 16.VI.1999; Drachten,
 29.VI.1999, all soil samples, agricultural grassland

- on sandy soil; records ALT. Aalsmeer, 25.II.1993, horticulture experimental station; Emmer-Compascuum, Mulderhoeve, 15.I.1976, under beet; Uithuizen, 18.X.1973, under oat, 12.X.1970, under summer wheat after beet; Bennekom, 15.IV.1964, *Hyacinthus* bulbs; Ouddorp, Westduinen, 16.VI.1966, under *Festuca* sp. *Carex* sp. *Hydrocotyle vulgaris* and *Potentilla erecta*; Wageningen, experimental fields Plant Protection Service, 10.X.1973, 16.XI.1973, 9.VIII.1974 and 2.X.1974, under *Lolium perenne*, 2.XI.1971, under perennial rye grass and white clover, 19.X.1971, under rye treated with dieldrin, 15.I.1970, litterbag wheat straw, 20.III.1963, soil sample, in col. NPPO. Common and frequent species in grasslands soil.
- 260 minutus (Halbert, 1915)**
Seiulus minutus
Hoge Veluwe, Heiweg, 20.XI.1984, unfertilized grassland, Bennekom, Bovenbuurt, 20.XI.1984, 20.V.1985, 22.II.2000, 23.V.2000, light fertilized grassland, all soil samples grassland on sandy soils; Wageningen, experimental fields Plant Protection Service, 31.X.1986; Anloo, Drentse Aa, 14.X.1992 light fertilized moist grassland soil sample; Diever, Oude Willem, 26.V.2004; Zundert, De Flesch-Pannenhoeft, 11.VI.2004; Nispen, Hopmeerweg, 17.VI.2004; Mantinge, 26.X.2006, all soil samples semi-natural grassland sandy soil; De Lutte, 2.X.2009, soil sample grassland on sandy soil; Rijsbergen, 20.V.2010; Budel 10.VI.2010, soil sample vegetable cultivation; Werkhoven 23.V.2011, soil sample fruit cultivation; records ALT. Elsloo, early V.1967, in liverworts washed over by a brook; Ouddorp, Westduinen, 16.V.1966, under *Festuca* sp., *Carex* sp. and *Hydrocotyle vulgaris*, in col. NPPO.
- 261 pristinus Karg, 1962**
Leioseius denticulosus Hirschmann, 1962
Wilhelminapolder, 5.XI.1975/23.III.1976, litterbag under summer wheat after beet, in col. NPPO.
- 262 semiscissus (Berlese, 1892)**
Laelaps semiscissus
Lasioseius semiscissus
Arctoseius bicuspidatus Willmann, 1949
Arctoseius limburgensis Nesbitt, 1954
Arctoseius bispinatus Weis-Fogh, 1947
Arctoseius sellnicki Karg, 1962
Westmaas, 27.II.1978, in filterpaper package; Woensdrecht, 5.XI.1975/23.III.1976, filterpaper package in wheatfield; Uithuizen, 18.X.1973, under white clover; Emmer-Compascuum, 25.X.1965, under grass-clover; Bennekom, 15.IV.1964, *Hyacinthus* bulbs; Lelystad, 15.IV.1959, under barley; Zaltbommel, 15.XII.1958, mushroom culture; Wageningen, experimental fields Plant Protection Service, 8.V.1969, litterbag wheat straw, 20.IX.1963, under grass and white clover, 9.IX.1963, under barley insecticide treatment, 6.IV.1962, under rye, in col. NPPO.
- 263 venustulus (Berlese, 1917)**
Lasioseius venustulus
Arctoseius pannonicus Willmann, 1949
Bennekom, Bovenbuurt, 20.V.1985, light fertilized grassland soil sample; Wageningen, experimental fields Plant Protection Service, 31.X.1986; records ALT. Dinteloord, 20.X.1976, under sugar beet treated with Temik; Vreeswijk, Hagestein, 14.X.1965, under grass-clover; Wageningen, 16.XI.1973, under *Lolium perenne*; Uithuizen, 12.X.1970, under summer wheat after beet, in col. NPPO.
- Asca Von Heyden, 1826**
Ascoseius Karg, 1979
- 264 aphidioides (Linnaeus, 1758)**
Acarus aphidioides
Sterksel, Landgoed De Pan, 9.IX.2000; Echten, Oldenhaverveld, 27.IV.2000, soil sample forest on sandy soil; Ubachsberg, Kunderberg, 22.XI.2011, soil sample calcareous grassland; records ALT.
- 265 bicornis (Canestrini & Fanzago, 1887)**
Gamasus (Seius) bicornis Canestrini & Fanzago, 1877
Asca nova Willmann, 1939
Hoge Veluwe, Wildbaanweg, 31.VIII.1988, half-open *Calluna* vegetation, in col. HS. Deelerwoud, 20.XI.1984, 14.I.1988, Hoge Veluwe, Heiweg, 20.XI.1984 and 20.V.1985, Imbos, 20.V.1985, all unfertilized grasslands; Wageningen, Droevendaal, 20.XI.1984, agricultural grassland soil samples grasslands on sandy soil; Soerendonk, Cranen-

donk, 15.v.1991, abandoned agricultural land soil sample; Loon, 19.iv.1993, moist forest soil sample; Arnhem, harbour area, 24.vii.1992, road verge soil sample; Aperlo, 25.ix.1997, old hedgerow, soil sample; Harskamp, 25.ix.1997, old hedgerow, soil sample; Stroe, 25.ix.1997, old hedgerow, soil sample; Budel, 15.x.2001; Sallandse Heuvelrug, 28.iv.2004; Kootwijkseveld, 7.iv.2014; Mariapeel, 8.iv.2014, all soil sample heathland on sandy soil; Bakel, 10.x.2005; Coevorden, 18.iv.2006; Laren (Gld), 3.iv.2006; Heino, 9.x.2007; Dongen, 1.v.2013; Wolfheze, Reyerskamp, 15.iv.2014; Ede, Mosselse veld, 14.iv.2014, soil sample grassland on sandy soil; Asten, Galgenberg, 18.vii.2007; Harderwijk, 22.iv.2009, soil sample forest sandy soil; Elsloo, Schaopedobbe, 13.v.2009, soil sample heathy grassland; records ALT. Gasteren, Gasterense Duinen, (AC 240.I-562.7), 27.v.200,5 under *Galium saxatile* and moss; Ede (AC 172-449), 2.v.2004, road verge under *Corynephorus canescens*; Ouddorp, Westduinen, 16.vi.1966, under *Ononis repens*, *Galium* sp., *Festuca* sp. and moss; Garderen, Houtdorp, 5.iv.1966, under *Calluna vulgaris*; Bennekom, Hullenberg, 14.ix.1964, under *Cladonia portentosa*, in col. NPPO.

Gamasellodes Athias-Henriot, 1961

266 bicolor (Berlese, 1918)

Gamasellus bicolor

Gamasellodes bicolor

Leioseius bicolor

Digamaselus circuliformis Leitner, 1946

Gamasellus americanus Garman, 1948

Digamasellus shealsi Costa, 1962

Gamasellodes major Athias-Henriot, 1961

Klarenbeek, hedgerow, 22.ix.1997, soil 0-5 cm., in col. HS. Deelerwoud, Hoge Veluwe, Heiweg, Imbos, 20.xi.1984 and 20.v.1985, unfertilized grasslands, Bennekom, Bovenbuurt, 20.xi.1984 and 20.v.1984, light fertilized grassland; Wageningen, Droevendaal, agricultural grassland, 20.xi.1984; Imbos, litterbags with *Deschampsia flexuosa*, 11.vi.1986, 3.ix.1986, 15.iv.1987 and 15.vi.1987; Wageningen, experimental fields Plant Protection Service, 31.x.1986; Hoog Soeren, forest

Quercus robur, litterbag with faeces of red deer (*Cervus elaphus* Linnaeus, 1758), 15.vi.1989; Soerendonk, Cranendonk, 15.v.1991, abandoned agricultural land soil sample; Arnhem, harbour area, 24.vii.1992 road verge soil sample; Dordrecht, 12.xi.1997, floodplain grassland soil; Rotterdam, Kralingen, 12.xi.1997, harbour mud depot; Klarenbeek, 22.ix.1997, old hedgerow soil sample; Elspeet, 25.ix.1997, old hedgerow, soil sample; Garderen, 25.ix.1997, old hedgerow, soil sample; Nunspeet, 25.ix.1997, old hedgerow, soil sample; Stroe, 25.ix.1997, old hedgerow, soil sample; Tilburg, Vloelvelden, 15.v.2000, soil sample grassland sewage farm; Budel, 15.x.200,1 soil sample heathland on sandy soil; Den Hoorn (Texel), 2.iv.2002, soil sample arable land marine clay soil; Woudrichem, 6.v.2002, soil sample grassland on river clay; Rijkholt, Savelsbos, 17.v.2010, soil sample forested hills on loess; records ALT. Wageningen, experimental fields Plant Protection Service, 9.viii.1974, under *Lolium perenne*, 15.ii.1972, in tussocks of *Tortula muralis* and *Ceratodon purpureus* on wall, 14.ix.1971, under rye; Ede, 1972, litterbag with straw under *Carpinus* hedge; Lienden, Schuilenberg, 12.i.1971, from stem apple tree; Bunde, v.1967, *Carpinus* litter under *Vinca minor* and *Hedera helix*; De Punt, Ouddorp, 16.vi.1966, under *Artemisia* sp., in col. NPPO. Frequent species in various kinds of soil.

267 insignis (Hirschmann, 1963)

Arctoseius insignis

Wageningen, experimental fields Plant Protection Service, ix.1988, in potting soil in greenhouse; Heesch, 25.iii.1988, rockwool in *Cucumber* greenhouse; Ouddorp, Westduinen, 16.vi.1966, under *Corynephorus canescens*, in col. NPPO.

Iphidozercon Berlese, 1903

268 corticalis Evans, 1958

Iphidozercon californicus Chant, 1963

Leioseius elegans Bernhard, 1962

Iphidozercon variolatus Ishikawa, 1969

Beekbergen, Elsbosweg, side of ditch, 14.vii.1991, in *Mnium hornum*, m., in col. HS.

269 **gibbus** (Berlese, 1903) (fig. 11)

Eviphis gibbus

Ameroseius oviforme Schweizer, 1949

Leioseius stammeri Bernhard, 1963

Bunde, early v.1961, in moss in *Stellario-Carpinetum*, in col. NPP0.

270 **insularis** Willmann, 1952

Budel, 15.x.2001, soil sample heathland on sandy soil; Bakel, 10.x.2005; Wolfheze, 18.x.2011; Rozendaa, l Imbos, 18.x.2011; Loenen, 18.x.2011, soil sample grassland on sandy soil; Wijk aan Zee, 24.x.2007, soil sample dunes; records ALT.

Leioseius Berlese, 1916

271 **sabelisi** Faraji & Karg, 2005

t Harde, 15.v.2000, soil sample sandy soil, col. Naturalis (Faraji & Karg 2005).

272 **salinus** (Halbert, 1920)

Lasioseius salinus

Texel, slufte, 7.ii.1993, in litter on saltmarsh, in col. HS. De Punt, Ouddorp, 16.vi.1966, under *Artemisia* sp., in col. NPP0.

Neojordensia Evans, 1957

Chantesia Kandil, 1979

Evansia Kandil, 1979

273 **levis** (Oudemans & Voigt, 1904)

Seiulus levis

Westbroek, Westbroekse zodden, quagmire, 29.vi.1992, in col. HS. Hoge Veluwe, Heiweg, 20.v.1985, unfertilized grassland; Bennekom, Bovenbuurt, 20.xi.1984, 22.ii.2000, light fertilized grassland; Wageningen, Droevendaal and Dijkgraaf, 20.xi.1984; Oldenbroek, 24.vi.1999, soil samples agricultural grassland on sandy soil; Anloo, Drentse Aa, 14.x.1992, light fertilized moist grassland soil sample; Laren (NH), Wasmeer, 22.vi.2000, soil sample grassland sewage farm; Schin op Geul, 24.vi.2003; Mechelen, 27.vi.2003, soil sample grassland on loess; Diever, Oude Willem, 26.v.2004, soil samples semi-natural grassland sandy soil; Bemelen, Bemelerberg, 29.x.2012, soil sample calcareous grassland; records ALT. Reusel, Reuselse Moeren, (AC 139-370), 9.vi.2006, under *Trifolium repens*, in col. NPP0.

274 **meritricha** Athias-Henriot, 1973

Lienden, Schuilenburg, 12.i.1971, from stem apple tree, in col. NPP0.

275 **sinuata** Athias-Henriot, 1973

Surhuisterveen, 13.vi.2000; Landhorst, 8.v.2000; Deventer, 11.iv.2008, soil sample grassland sandy soil; Druten, 3.vi.2002; Middelaar, 7.v.2002, soil sample grassland on river clay; Augustinusga, 2.vi.2004, soil sample grassland loamy sand; Polsbroek, 4.iv.2003; Goudriaan, 18.iv.2003; Noordeloos, 31.iii.2003; Hellendoorn, 1.v.2013; Hobrede, 2.v.2013; Langelille, 26.iii.2014, all soil samples grassland on peat soil; records ALT.

Protogamasellus Karg, 1962

Protogamasellodes Evans & Purvis, 1987

276 **mica** (Athias-Henriot, 1961) (fig. 12)

Rhodacarellus mica

Protogamasellus primitivus Karg, 1962 (synonymy by Saito & Takaku 2015)

Wageningen, experimental fields Plant Protection Service, 31.x.1986, records ALT; Wageningen, 6.vii.2017, culture of *Tyrophagus* sp. and *Stratiolaelaps scimitus*; Wageningen, experimental fields Plant Protection Service, 9.viii.1974, under *Lolium perenne*, 24.i.1974, under *Lolium perenne* in greenhouse, 26.iv.1972/4.vi.1972, in cylinder with brick sand, in col. NPP0.

277 **singularis** (Karg, 1962)

Leioseius singularis

Wageningen, experimental fields Plant Protection Service, xi.1971/v.1972, litterbag wheat straw, 4.v.1971, under grass and white clover, 3.xii.1970, under carrot treated with DDT, 30.vi.1970, under peas, 8.v.1969, litterbag wheat straw, 9.v.1962 and 23.viii.1962, insecticide treatment; Uithuizen, 18.x.1973, under sugar beet, in col. NPP0.

Zerconopsis Hull, 1918

278 **remiger** (Kramer, 1876)

Gamasus remiger

Ameroseius bispinosus Berlese, 1890

Lasioseius mustairi Schweizer, 1949

Rijkholt, Savelsbos, 21.iv.1994, litter below *Allium ursinum*; Millingerwaard, Kolenbrandersbos,

8.III.2013, in decayed logg of *Quercus robur*; in col. HS. Klarenbeek, 22.IX.1997, old hedgerow, soil sample; Aperlo, 25.IX.1997, old hedgerow, soil sample; Garderen, 25.IX.1997, old hedgerow, soil sample; records ALT.

Family BLATTISOCHIDAE

Blattisocius Keegan, 1944

279 dentriticus (Berlese, 1918)

Lasioseius dentriticus

Seiulus amboinensis Oudemans, 1925

Lasioseius fimbriatus Halbert, 1923

Wageningen, summer 1971, predating on eggs of *Archips podana* Scopoli, 1763 (Lepidoptera, Tortricidae), 3.XII.1970, in soil under carrot treated with DDT, 18.VIII.1970, in litterbag with wheat straw; Lienden, 12.I.1971, from stem apple tree; Bennekom, 10.VII.1967, from *Calluna vulgaris*; Kerkdriel, 16.V.1958, in mushroom manure; Uithuizen, 2.IV.1970, soil under summer wheat after white clover; Koog a/d Zaan, 12.XI.1952, from *Sorbus* sp., in col. NPPO.

280 keegani Fox, 1947

Boxtel, 20.VII.1989, in moss on rooftiles, in col. HS. Drachten 29.VI.1999, soil sample, agricultural grassland on sandy soil; Borger, 7.VI.1999, soil sample grassland on sandy soil, records ALT.

281 mali (Oudemans, 1929)

Typhlodromus mali

Blattisocius bakeri Chant, 1963

Arnhem, col. Oudemans in col. Naturalis (Buitendijk 1945).

282 tarsalis (Berlese, 1918)

Lasioseius tarsalis

Blattisocius triodons Keegan, 1944

Lasioseius similis Schweizer, 1949

Typhlodromus tineivorus Oudemans, 1929

Bennekom, Bovenbuurt 24.IX.2002, soil sample grassland on sandy soil; records ALT. Berkel, 10.VIII.1987, culture of predatory mites; Bennekom, VII.1968, litter in henhouse; Ellecom, 7.IV.1966, soil under potato; Emmer-Compascuum, 25.X.1965, under oat; Zaltbommel, 7.X.1958, mushroom culture; Wageningen, autumn 1957, soil sample, in col. NPPO.

283 urticae (Nesbitt, 1954)

Garmania urticae

Neercanne, castle area on *Urtica dioica* (Nesbitt, 1954).

Cheiroseius Berlese, 1916

Posttrematus Karg, 1981

284 basileus Schweizer, 1961

Vierhouten, Mosterdveen, 07.II.2016, in *Sphagnum*, in col. HS.

285 borealis (Berlese, 1904)

Sejus borealis

Eipseius montanus Willmann, 1949

Arnhem, Arnhemse heide, 14.I.1988, *Poo-Lolietum* in vegetation; Dordrecht, soil sample floodplain grassland, 12.XI.1997, soil 0-5 cm., in col. HS. Wageningen, Droevendaal, 20.V.1985; Arnhemse heide, 14.I.1988, 24.VI.1988; Hoog Soeren, forest *Quercus robur*, litterbag with *Deschampsia flexuosa*, 15.VI.1989, 7.VII.1989, 8.IX.1989; Hoog Soeren, forest *Quercus robur*, litterbag with faeces of red deer (*Cervus elaphus* Linnaeus, 1758), 15.VI.1989, 7.VII.1989, 8.IX.1989, 8.XII.1989; Anloo, Drentse Aa, 14.X.1992, light fertilized moist grassland soil sample; Dordrecht, 12.XI.1997, floodplain grassland soil; Rotterdam, Kralingen, 12.XI.1997, harbour mud depot; Kallenkote, 21.VI.1999; Orvelte, 22.VI.1999; Soest, 24.VI.1999; Oldenbroek, 24.VI.1999; Esbeek, 21.VI.1999; Biezenmortel, 23.VI.1999; Nietap, 16.VI.1999; Udenhout, 26.V.1999; Drachten, 29.VI.1999; Tynaarlo, 12.V.1999; Stuifzand, 25.V.1999; Ruinen, 27.V.1999; Beilen, 24.IV.1999; Borger, 7.VI.1999; Westerbork, 15.VI.1999; Coevorden, 7.VI.1999; Noordwolde, 3.V.1999; Laren, 22.IV.1999; Dwingeloo, 19.V.1999; Oosterwolde, 14.V.1999; Dalfsen, 1.VI.1999; Raalte, 14.VI.1999; Aalten, 24.IV.1999; Oosterwolde, 14.VI.1999; Rijkevoort, 16.VI.1999 all soil samples, agricultural grassland on sandy soil; records ALT. Wageningen, Haarweg, 13.XI.1973 and 4.I.1977, under *Lolium perenne*; 2.XI.1971, under perennial rye grass, 20.IX.1963, under white clover; Akmarijp, 11.X.1966, fen meadow (*Cirsio dissecti-Molinietum*) under *Caltha palustris*; Emmer-Compascuum, 25.X.1965, under grass-clover, in col. NPPO. Common and frequent species in agricultural grasslands.

- 286 cassiteridum (Evans & Hyatt, 1960)**
Sejus cassiteridum
 Eibergen, Zwillbrockven, 9.IV.1993, in *Sphagnum* from birch brook forest, in col. HS.
- 287 curtipes (Halbert, 1923)**
Lasioseius glaber var. *curtipes*
Episeius ovaspini Schweizer, 1949
 Westbroek, Westbroekse zodden, quagmire, 29.VI.1992, in col. HS.
- 288 longipes Willmann, 1951**
Episeius longipes
 Beekbergen, Reeënberg, 19.VII.1989, in *Sphagnum*, in col. HS.
- 289 necorniger (Oudemans, 1903)**
Hypoaspis necorniger
Platyseius (Cheiroseius) insculptus Bernhard, 1963
 Texel, Slufter, 7.II.1993, in litter on saltmarsh, in col. HS. Tynaarlo, 12.V.1999; Stuifzand, 25.V.1999; Ruinen, 27.V.1999; Erp, 8.VI.1999; Wierden, 15.VI.1999; Ruurlo, 27.V.1999; Oirschot, 16.VI.1999; Sambeek, 1.VI.1999; Lennisheuveel, 23.V.2007, all soil samples grassland on sandy soil; Smilde, 5.III.2001; Musselkanaal, 28.II.2001; Raalte, 13.III.2002, soil sample arable land on sandy soil; Pieterburen, 21.III.2002; Godlinze, 15.III.2002, soil sample arable land marine clay soil; Heino, 18.IV.2005, soil sample arable land on sandy soil; Lochem, Kienveen, 19.V.2009; Holten, De Borkeld, 19.V.2009; Denekamp, Stroothuizen, 20.V.2009; Eursinge, Scharreveld, 20.V.2009; Havelte, Startbaan, 20.V.2009, soil sample heathy grassland; records ALT. Wageningen, experimental fields Plant Protection Service 8.XI.1973 and 16.XI.1973, under *Lolium perenne*, 9.VIII.1963, in pot with white clover treated with aldrin; De Punt, Ouddorp, 16.VI.1966, under *Artemisia* sp., in col. NPP0.
- 290 serratus (Halbert, 1915)**
Paraseius serratus
 Hoge Veluwe, Aalderinksveld, 3.XI.2015, soil 0-5 cm., in col. HS. Selligen, 7.III.2001, soil sample arable land on sandy soil; Orvelte, 13.III.2001, soil sample arable land on sandy soil; Drouwen, 12.III.2002, soil sample arable land on sandy soil; Wijnandsrade, 26.XI.2007, soil sample arable land on loess; Bemelen, Bemelerberg, 29.X.2012, soil sample calcareous grassland; records ALT. Wageningen, 13.X.1966, soil sample orchard; Ellecom, 6.X.1965, soil sample wasteland, in col. NPP0.
- 291 tendens (Schränk, 1803)**
Acarus tendens
Platyseius tendens
 Bovenkerk, Rozendaal, Arnhem, Houthem, col. Oudemans in col. Naturalis (Buitendijk 1945);
- 292 unguiculatus (Berlese, 1887)**
Seius unguiculatus
 Vierhouten, Mosterdveen, 07.II.2016, in *Sphagnum*, in col. HS.
- 293 viduus (C.L. Koch, 1839)**
Sejus viduus
Epicrius corniger Berlese, 1891
Episeiella heteropoda Willmann, 1938
 Kuitaart, Vogelwaard, 30.IV.2016, litter in eutrophicated marsh, coll. HS. Akmarijp, 11.X.1966, fen meadow (*Cirsio dissecti-Molinietum*) under *Caltha palustris*, in col. NPP0.
- Lasioseius Berlese, 1916**
Borinquolaelaps Fox, 1946
Criniacus Karg, 1980
Crinidens Karg, 1980
Gnorimus Chaudry, 1975
Hyatella Krantz, 1962
Indiraseius Daneshvar, 1987
Neolaspina Halliday, 1995
- 294 allii Chant, 1958**
Lasioseius bispinosus Evans, 1958
 Voorhout, 26.XI.2007, *Hyacinthus* 'Pink Pearl' (bulb); Poeldijk, 17.IX.2007, *Hyacinthus* (bulb); Lisse, 9.XII.2005, *Tulipa* (bulb), in col. NPP0.
- 295 berlesei (Oudemans, 1938)**
Typhlodromus berlesei
Seius muricatus Berlese, 1887
Lasioseius aba Baker & Wharton, 1952
Lasioseius silvestris Pinchuk, 1972
 Hoge Veluwe, Aalderinksveld, 3.XI.2015, soil 0-5 cm., in col. HS. Wageningen, Droevendaal, 20.XI.1984 and 20.V.1985, soil samples agricultural grassland; Soerendonk, Cranendonk, 15.V.1991 abandoned agricultural land soil sample; Rotterdam, Maasdijk, 12.XI.1997, harbour mud depot;

- Tilburg, Vloevelden, 15.v.2000, soil sample grassland sewage farm; Boxtel, 8.vi.2000, soil sample grassland sandy soil; Den Hoorn (Texel), 2.iv.2002; Oude Niedorp, 8.iv.2003, soil sample arable land marine clay soil; Bakel, 10.x.2005; Nederweert, 31.x.2005; De Lutte, 2.x.2009; Wolfheze, Reyerskamp, 18.x.2011, 15.iv.2014; Rozendaal, Imbos, 18.x.2011, soil sample grassland on sandy soil; records ALT. Lienden, 12.i.1971, on stem apple tree; Emmer-Compascuum, 25.x.1965, under grass-clover, in col. NPP0.
- 296 floridensis Berlese, 1916**
Lasioseius penicilliger var. *floridensis*
Lasioseius arboreus Chant, 1963
Lasioseius fimetorum Karg, 1971
Aalsmeer, 11.vii.2000, *Guzmania densiflora*; Schipluiden, 25.ii.1998, *Gerbera*; Wageningen, 4.viii.1971, soil under grass and white clover, control; De Kwakel, 8.ix.2016, *Polystichum aculeatum* (frond, in glasshouse), in col. NPP0.
- 297 ometes (Oudemans, 1903)**
Hypoaspis ometes
Utrecht, Arnhem, col. Oudemans in col. Naturalis (Buitendijk 1945); Ommerenveld, vi.1971, apple orchard (Weiman), in col. NPP0.
- 298 ometisimilis (Hirschmann, 1963)**
Zercoseius ometisimilis
Ede, xi/iii.1972, litterbag pear leaves un *Carpinus* hedge; Zaltbommel, 1.i.1958, mushroom culture; Kerkdriel, 21.v.1958, mushroom culture; Wageningen, 8.xi.1952 in thermostat on moldy cane, in col. NPP0.
- 299 penicilliger Berlese, 1916**
Nederland, 16.viii.1990, from leek seed; Wageningen, x.1968, in potting soil under peas in greenhouse, in col. NPP0.
- 300 thermophilus Willmann, 1942**
Ellecom, 6.x.1965, under grass-clover; Wageningen, 6.v.1963, in pot with white clover treated with aldrin and brassicol; Pijnacker, 23.ix.1987, cucumber in greenhouse, in col. NPP0.
- 301 youcefi Athias-Henriot, 1959**
Lasioseius paucisetosus Westerboer, 1963
Lasioseius proteae Ryke, 1964
Lasioseius mcgregori Chant, 1963
Wageningen, Droevendaal, 20.xi.1984; Borger, 7.vi.1999; Wierden, 15.vi.1999, soil samples grassland on sandy soil, records ALT. Wageningen, experimental fields Plant Protection Service, 2.xi.1971, under rye grass-clover, 16.xi.1973, insecticide treatment under *Lolium perenne*, 20.ix.1963, under white clover; Erp, 28.xii.2009, *Fragaria x ananassa* 'Elsanta' (vegetation shoots), in col. NPP0.
- 302 zerconoides Willmann, 1954**
Anna Polowna, 22.ix.1966, on *Tulip* bulbs with *Rhizoglyphus* sp. (Sarcoptiformes, Acaridae), in col. NPP0.
- Platyseius Berlese, 1916**
Episeius Hull, 1918
- 303 italicus (Berlese, 1905)**
Ameroseius italicus
Plesioseius italicus
Paraseius tenuipes Halbert, 1915
Lasioseius michaeli Halbert, 1923
Beek (Nijmegen), col. Oudemans in col. Naturalis (Buitendijk 1945).
- 304 major (Halbert, 1923)**
Lasioseius major
Arkemheen, Weggeveldseweg, side of a ditch, grass tussock, 30.iii.2016, in col. HS.
- Zercoseius Berlese, 1916**
- 305 spathuliger (Leonardi, 1899)**
Seius spathuliger
Ameroseius zerconiformis (Berlese, 1905)
Wageningen, experimental fields Plant Protection Service, 31.x.1986; Soerendonk, Cranendonk, 15.v.1991, abandoned agricultural land soil sample; Sterksel, Landgoed De Pan, 9.ix.2000, soil sample forest on sandy soil; Budel, 15.x.2001; Sallandse Heuvelrug, 7.ix.2011; Strabrechtse heide, 7.ix.2011; Kootwijkse veld, 3.iv.2014; Soerendonk, Cranendonk, 19.iv.2006, all soil sample heathland on sandy soil; Wijk aan Zee, 24.x.2007; Duin en Bosch, 24.x.2007, all soil sample dunes; Paterswolde, 3.iii.2008; Wolfheze, Telefoonweg, 18.x.2011; Loenen, 18.x.2011; Wolfheze, Dennenkamp, 18.x.2011; Ede, Mosselse veld, 18.x.2011, 14.iv.2014; Otterlo, Oud Reemst, 19.x.2011, all soil sample grassland on sandy soil;

Eursinge, Scharreveld, 20.v.2009; Havelte, Startbaan, 20.v.2009, soil sample heathy grassland; Oosterhesselen, 1.vi.2010, soil sample vegetable cultivation; Eindhoven, 30.v.2011, soil sample fruit cultivation; Vogelenzang, 25.v.2011, soil sample dune *Carex arenaria* vegetation; records ALT. Wageningen, experimental fields Plant Protection Service, 24.viii.1974 till 6.vi.1975, under pear leaves, 19.x.1971 and 14.ix.1971, under rye; Ouddorp, Westduinen, 16.vi.1966, south slope under *Hieracium pilosella*, in col. NPP0.

Family MELICCHARIDAE

Melichares Hering, 1838

Mucroseius Lindquist, 1962

306 agilis Hering, 1838

Typhlodromus domesticus Oudemans, 1929
Netherlands, in domestic dust, smoked meat and pig bladders, col. Oudemans in col. Naturalis.

Orthadenella Athias-Henriot, 1973

307 lawrencei (Evans, 1957)

Neojordensia lawrencei
Lasioseius frondeus Karg, 1965
Lasioseius berleseii sensu Westerboer, 1963 nec Oudemans, 1938
Bennekom, Bovenbuurt, 20.xi.1984, light fertilized grassland; Wageningen, Droevendaal, agricultural grassland, 20.xi.1984, soil samples grassland on sandy soils records ALT.

Proctolaelaps Berlese, 1923

Blattilaelaps Womersley, 1956
Garmaniella Westerboer & Bernhard, 1963
Proctofissus Karg, 1979

308 cossi (Dugès, 1834)

Gamasus cossi
Hypoaspis cossi Oudemans, 1902
Netherlands, on caterpillars of *Cossus cossus* Linnaeus, 1758 (Lepidoptera, Cossidae), col. Oudemans in col. Naturalis.

309 epuraeae (Hirschmann, 1963)

Lasioseius epuraeae
Wageningen, 2.iv.1973, from culture (on carrot

in petridish) of *Onychiurus* sp. (Collembola, Onychiuridae).

310 izabellae Faraji, 2011

Eelde-Paterswolde, in nests of *Sturnus vulgaris* Linnaeus, 1758 (Passeriformes, Sturnidae), col. Naturalis.

311 longisetosus (Postner, 1951)

Garmania longisetosus
Lasioseius longisetosus
Rotterdam, Kralingen, park, 12.xi.1997, soil 0-5 cm., in col. HS.

312 pomorum (Oudemans, 1929)

Typhlodromus pomorum
Arnhem col. Oudemans in col. Naturalis (Buitendijk 1945).

313 pygmaeus (Mueller, 1859)

Gamasus pygmaeus
Hypoaspis hypudaei Oudemans, 1902
Typhlodromus bulbicolus Oudemans, 1929
Lasioseius conviva Berlese, 1916
Lasioseius innumerabilis Berlese, 1918
Lasioseius alpinus Schweizer, 1949
Lasioseius vertrittichosus Schweizer, 1949
Hypoaspis ovatus Ma, Ning & Wei, 2003
Delft, Valkenburg, Sittard, Aalbeek, Mook, Sneek (sub *H. hypudaei*), 's Gravenhage, Sassenheim, Arnhem (sub *T. bulbicolus*), col. Oudemans in col. Naturalis (Buitendijk 1945).
Boskoop, 15.iii.1995, soil sample; Kerkdriel, 21.vii.1975, mushroom culture; Ede, xi.1971/iii.1972, litterbag and pear leaves under *Carpinus* hedge; Wageningen, 11.x.1968, rotten bulb of tulip, 29.xi.1957, *Hyacinthus* bulb; Bennekom, vii.1968, litter henhouse; Vreeswijk, 14.x.1965, under grass-clover; Zaltbommel, 19.xii.1957, mushroom manure, in col. NPP0.

314 scolyti Evans, 1958

Proctolaelaps ulmi Hirschmann, 1962
Leiden, 14.iii.1969, in *Drosophila* sp. culture (genetics lab.); Utrecht Genetics institute, 18.viii.1969, in culture *Drosophila melanogaster* Meigen, 1830 (Diptera, Drosophilidae), in col. NPP0.

Superfamily PHYTOSEIOIDEA

Family PHYTOSEIIDAE

Amblyseius Berlese, 1914

Amblyseius Karg, 1983

315 andersoni (Chant, 1957)

Typhlodromus andersoni

Amblyseius potentillae (Garman, 1958)

Amblyseius potentillae Garman, 1958

Amblyseius garui Gupta, 1969

Amblyseius reflexus Denmark & Knisley, 1978

Typhlodromus britannicus Chant, 1959

Meddo (AC 245.291-447.852), 7.XI.2017, *Fuchsia*;

Boskoop, 29.VII.2014, *Camellia* (pot plant);

Utrecht (AC 140-455), Botanical Gardens,

31.VIII.2013, *Sasa veitchii* (leaf); Nieuwvliet-Bad,

Zwarte Polder (AC 19-379), 28.V.2011, *Prunus*

spinosa; Boskoop, 26.VII.2010, *Castanea sativa*

(leaf); Valkeveen (AC 142.9-479.7), 25.VI.2010,

Hedera helix (leaf); Kuinre, Kuinderbos, Burcht-

bos (AC 185-532), 6.VI.2009, *Crataegus*; Eijdsen

(AC 176.724-307.862), 15.X.2008, *Carpinus* (leaves,

Berlese trap); Elsloo (AC 180.752-328.368),

15.X.2008, *Prunus persica* (leaves, Berlese-trap);

Vught (AC 145.504-405.433), 26.IX.2008, *Acer*

campestre (leaves); Beesd, 17.VI.2008, *Semiarun-*

dinaria fastuosa; Borculo, Beekvliet (AC 229-459),

30.V.2008, *Juniperus communis* (twigs); Asten,

12.II.2008, *Chusquea coleou* and *Sasa palmata*;

Utrecht, Uithof, 4.II.2008, Bambusoidea;

Kunrade, Kunderberg (AC 194-320), 8.VI.2007,

Chaerophyllum temulum; Pijnacker, 17.X.2006,

Phyllostachys nigra (leaf); Hapert, Cartierheide

(AC 146-371), 9.VI.2006, *Rhamnus frangula*; Huissen,

Silo (AC 192-400), 29.IX.2005, *Fagus sylvatica*;

Deventer, St. Joseph nursing home (AC 208-476),

6.VIII.2005, *Fagus sylvatica* (hedge); Noordwijk-

Binnen (AC 90-471), 4.VIII.2005, garden; Bathmen,

Noteboomstraat (AC 216-473), 30.VII.2005, *Fagus*

sylvatica (hedge); Den Dungen, 27.IX.2004, *Tilia*

x *pallida*; Valkenswaard, 1.IX.2003, *Fargesia*

denudata; Lattrop, Bergvennen (AC 265-494),

14.VI.2003 *Erica tetralix*; Meterik, 31.VII.2001,

Carpinus betulus; Hollum, 30.VIII.1996, *Elymus*

arenarius; Boskoop, 15.IX.1994, *Buxus*; Amsterdam,

29.X.1992, *Tilia*; Boskoop, 17.IV.1991, *Tilia*;

Vuren, 28.VII.1973, 100 leaves apple 'Goudreinet';

Rosmalen, 10.VIII.1972, *Thuja*; Hogebeintum,

Harsta State, 8.VI.1972, apple 'Goudreinet'; Ede,

XI.1971/III.1971, litterbag pear leaves under

Carpinus hedge; Lienden, Schuilenburg, winter

1971-1972, apple 'James Grieve', 12.I.1971, apple

'Cox'; Mensingeweer, 2.IX.1971 and 10.VI.1971,

100 leaves apple 'Goudreinet'; Oosterbeek,

I.IX.1971, 100 leaves apple 'Goudreinet'; Venhuizen,

8.VI.1971, 100 leaves apple 'Goudreinet', in col.

NPPO.

316 bryophilus Karg 1970

Typhlodromips cucumeris (Karg, 1970)

Bennekom, Bovenbuurt, 20.XI.1984, soil sample

light fertilized grassland, records ALT. Gasteren,

Gasterense Duinen (AC 240.1-562.7), 27.V.2005,

Galium saxatile & moss, in col. NPPO.

317 herbicolus (Chant, 1959) (fig. 13)

Typhlodromus herbicolus

Typhlodromus amitae Bhattacharyya, 1968

Amblyseius deleoni Muma & Denmark, 1970

Amblyseius giganticus Gupta, 1981

Amblyseius impactus Chaudri, 1968

Amblyseius thermophilus Karg, 1991

Goes (AC 51.703-392.696), 23.X.2008, *Acer*

(leaves); Goes, Hollandsche Hoeve (AC 517.46-

392.736), 13.X.2009, *Acer pseudoplatanus* (leaves,

Berlese trap), in col. NPPO.

318 isuki Chant & Hansel, 1971

Amsterdam, no date, apple orchard; Wageningen,

heath (Miedema 1987).

319 masseei (Nesbitt, 1951)

Typhlodromus masseei

Amblyseius major Kolodochka, 1979

Typhlodromips maior Karg, 1970

Naarden, Naardermeer (AC 137-477), 5.VI.2010,

Alnus; Zeewolde, Winkelse Zand (AC 155-480),

5.VI.2009, *Salix*; Borculo, Beekvliet (AC 229-459),

30.V.2008, *Alnus* (twig); Gasteren, Gasterense

Duinen (AC 239.9-562.7), 27.V.2005, *Betula*

pendula; Oudemolen (AC 239.8-565.8), 27.V.2005,

Sambucus nigra; Herkenbosch (AC 207-354),

I.VI.2002, *Prunus serotina*; Egmond aan Zee,

26.V.2000, *Alnus*; Ommerenveld, VI.1971, apple;

Tiel, Ommerenveld, 3.VI/10.VI.1970, beaten from

branches apple, in col. NPPO. Apple leaves and

twigs in various orchards in the Netherlands (Miedema 1987).

320 meridionalis Berlese, 1914

Amblyseis spiramentatus Athias-Henriot, 1961
Typhlodromus calicis Karg, 1960
Bennekom, Bovenbuurt, 22.II.2000, 23.V.2000, soil sample grassland sandy soil; Bemelen, Bemelerberg, 2.VI.2010; 't Rooth, Het Hoefijzer, 2.VI.2010; Cadier en Keer, Schiepersberg, 2.VI.2010, all soil sample calcareous grassland; Haulerwijk, Blauwe Bos, 3.X.2013; Strabrechtse heide, 2.X.2013, soil sample heathland on sandy soil; records ALT.

321 neobernardi Athias-Henriot, 1966

Typhlodromus intermedius Bernhard, 1963
Lienden, Schuilenburg, 12.I.1971 stem apple 'Cox', in col. NPPO.

322 obtusus (C.L. Koch, 1839) (fig. 14)

Zercon obtusus
Amblyseius bajulus Chaudhri, Akbar & Rasool, 1979
Amblyseius hamizensis Athias-Henriot, 1961
Amblyseius kurashvilli Gomelauri, 1968
Amblyseius microsetae Muma, 1961
Amblyseius rhabdus Denmark, 1965
Typhlodromus affatisetus Wainstein, 1960
Deelerwoud, *Deschampsia flexuosa* vegetation, 3.XI.1988, soil 0-5 cm.; Millingerwaard, 8.III.2013, decaying log of *Quercus robur*; in col. hs. Deelerwoud, 20.XI.1984, Hoge Veluwe, Heiweg, 20.XI.1984 and 20.V.1985, unfertilized grasslands, Bennekom, Bovenbuurt, 20.XI.1984, 20.V.1985, 8.IX.2003, light fertilized grassland, Wageningen, Droevendaal, 20.XI.1984, agricultural grassland soil samples grasslands on sandy soil; Wageningen, experimental fields Plant Protection Service, 31.X.1986; Deelerwoud, 3.XI.1988, unfertilized grassland; Rotterdam, Maasdijk, 12.XI.1997, harbour mud depot; Bakel, 10.X.2005, soil sample grassland on sandy soil; Ubachsberg, Kunderberg, 22.XI.2011; Elkenrade, Wrakelberg, 22.XI.2011; Bemelen, Bemelerberg, 29.X.2012, all soil sample calcareous grassland; records ALT. Wageningen, De Blauwe Kamer (GPS 51.943897, 5.609776), 8.VII.2017, *Eryngium campestre*; Bennekom, De Heide (AC 176.5-447.1), 20.X.2013, *Festuca*

filiformis; Ede, Nieuw-Reemst (AC 181-451), 13.VIII.2013, *Corynephorus canescens*; Vorden, Boevinck (AC 221-464), 31.V.2008, grassy verge; Ter Apel, (AC 269-543), 16.VI.2001, *Festuca*; Wageningen, 19.X.1971, in soil under rye treated with dieldrin; Ouddorp, Westduinen, 16.VI.1966, in soil south slope under *Festuca* sp., *Hydrocotyle vulgaris*, *Carex* sp. and *Hieracium pilosella*, in col. NPPO.

323 pinicolus Karg, 1991

Amblyseius alpinus Westerboer & Bernhard, 1963
nec *Amblyseius alpinus* (Schweizer, 1922)
Borculo, Beekvliet (AC 229-459), 30.V.2008, *Erica tetralix* (twigs), in col. NPPO.

324 rademacheri Dosse, 1958

Amblyseius khnzoriani Wainstein & Arutunjan, 1970
Leidschendam, (AC 88.957-457.194), 24.X.2011, *Crataegus* (leaf); Elsloo (AC 180.752-328.368), 26.X.2010, *Prunus* (leaf); Meijel (AC 188.437-370.288), 6.X.2009, *Prunus* (leaves, Berlese trap); Ritthem (AC 33.847-386.428), 23.X.2008, *Acer* (leaves); Nieuwkerk (AC 130.096-388.704), 24.IX.2008, *Carpinus betulus* (leaves); Zevenaer, 2.VII.1973, apple, 'Goudreinet'; Lienden, Schuilenburg, winter 1971-1972 and 12.I.1971, apple 'James Grieve', 17.XI.1970, *Cichorium*, 5.XI.1970, *Mentha niliaca*, 5.II.1970, *Symphytum officinale*, 17.X.1970, *Heracleum*, 6.VIII.1969, apple 'Jonathan', in col. NPPO (NPPO records also in Miedema 1987).

Euseius Wainstein, 1962

325 finlandicus (Oudemans, 1915)

Seiulus finlandicus
Meddo (AC 245.291-447.852), 7.XI.2017, on *Fuchsia*; Nederhemert-Zuid, 31.VIII.2017, *Juglans regia* (leaf blister galls); Wageningen (GPS 51.970, 5.667), 6.IX.2016, *Dryopteris filix-mas* (frond); Den Haag (AC 77.756-449.781), 24.X.2011, *Rosa* (leaves); Naarden, Naardermeer (AC 138-477), 5.VI.2010, *Quercus*; Driel (AC 183.852-440.638), 14.X.2009, *Crataegus* & *Fagus* (leaves, Berlese trap); Zeewolde, Harderbroek (AC 166-486), 5.VI.2009, *Prunus spinosa*; Eijsden (AC 176.724-307.862), 15.X.2008, *Carpinus* (leaves, Berlese trap); Elsloo (AC 180.752-328.368), 15.X.2008,

Prunus persica (leaves, Berlese-trap); Borculo, Beekvliet (AC 229-459), 30.V.2008, *Ribes*; Reusel, Reuselse Moeren (AC 139-370), 9.VI.2006, *Crataegus*; Haper,t Bredase Baan (AC 147-371), 9.VI.2006, *Quercus robur*; Bennekom, Bovenweg (AC 174-445), 1.VIII.2005, *Fagus sylvatica* in garden; Vasse, Vasserheide (AC 253-493), 14.VI.2003, *Quercus robur*; Meterik, 31.VII.2001, *Carpinus berulus*; Pannerden, 2.VII.1973, leaves apple 'Goudreinet'; Lienden, Schuilenburg, winter 1971-1972, on stem apple 'James Grieve'; Mensingeweer, 21.VII.1971, leaves apple 'Schone van Boskoop'; Wageningen, 21.VII.1971, beech hedge; Ede, 15.I.1971, leaves *Quercus robur*; Ommerveld, VI.1971, orchard apple tree; Lienden, 12.I.1971, branch apple 'Cox', 22.X.1970, apple tree, 19.VIII.1970, cherry tree; Wageningen, 1.IX.1959, apple tree; Wouw, 19.VIII.1992, on *Tilia*; Zelhem, 16.IX.1991, city hall on *Tilia*; Doesburg, 5.VIII.1991, PNH church on *Tilia*; Hoornt, 28.V.1991, on *Tilia*; Amsterdam, 13.V.1991, on *Tilia*; Wageningen, 26.IV.1991, on *Tilia*, in col. NPP0.

326 gallicus Kreiter & Tixier, 2010* (fig. 15)

Wageningen (GPS 51.976125, 5.675623), 19.IX.2016, *Dryopteris filix-mas* (frond); Wageningen (GPS 51.970, 5.667), 6.IX.2016, *Dryopteris filix-mas* (frond); Zevenhuizen, 8.IV.2013, *Rosa* (in greenhouse); Wageningen, 9.XI.2011, *Carpinus* (leaves); Berkel & Rodenrijs (AC 93.029-447-525), 28.IX.2010, *Cornus* (leaves); Maasland (AC 76.769-441.323), 20.X.2009, *Carpinus* (leaves, Berlese trap); Pijnacker (AC 88.845-448.920), 24.IX.2009, *Rosa* (leaves, Berlese trap); Bleiswijk, (AC 97.046-446.082), 3.IX.2009, *Carpinus* (leaves, Berlese trap); Tilburg (AC 135.637-397.195), 3.XI.2008, *Carpinus* (leaves); Eijsden (AC 176724/307862), 15.X.2008, *Carpinus* (leaves, Berlese trap); Elsloo (AC 180.752-328.368), 15.X.2008, *Prunus persica* (leaves, Berlese-trap), in col. NPP0.

Galendromus Muma, 1961

Allodromus Wainstein, 1962
Cydnodromella Muma, 1961
Mugidromus Tuttle & Muma, 1973
Trichoseius Wainstein, 1962

327 longipilus (Nesbitt, 1951)

Vught (AC 145,504-405.433), 26.IX.2008, *Acer campestre* (leaves); Ammerzoden (AC 144.077-417.447), 24.IX.2008, *Carpinus betulus* (leaves); Oisterwijk, 24.IX.2008, *Fagus sylvatica* (leaves, Berlese trap); Nederhemert, 24.IX.2008, *Malus* (leaves, Berlese trap); Ede, 3.IX.1996, *Corylus*; Boskoop, 17.VIII.1992, *Tilia*; Blitterswijk, 21.VII.1992, *Tilia*; Medemblik, 28.IV.1955, *Prunus persica* (peach) in greenhouse, in col. NPP0.

Graminaseius Chant & McMurtry, 2004

328 graminis (Chant, 1956)

Amblyseius graminis
Typhlodromips graminis (Chant, 1956)
 Bennekom, Bovenbuurt 20.XI.1984, soil sample light fertilized grassland on sandy soil, records ALT. Huizen, Gooimeer (AC 144-480), 5.VI.2010, *Galium verum*; Vorden, Boevinck (AC 221-464), 31.V.2008, beaten from vegetation at Berkel river shore; Herkenbosch, Meinweg (AC 207-354), 1.VI.2002, *Teucrium scorodonia*; Ouddorp, Westduinen, 16.VI.1966, soil sample south slope under *Hieracium pilosella*, in col. NPP0. On *Sambucus nigra* near an apple orchard (Miedema 1987).

Kampimodromus Nesbitt, 1951

Paradromus Muma, 1961

329 aberrans (Oudemans, 1930)

Typhlodromus aberrans
Typhlodromus vitis Oudemans, 1930
 Arnhem, col. Oudemans in col. Naturalis (Buitendijk 1945); Honselersdijk (AC 77.258-446.099), 10.IX.2009, *Malus* (Berlese trap); Eijsden (AC 176.724-307.862), 15.X.2008, *Carpinus* (leaves, Berlese trap); Terheijden, 30.IX.1993, on *Tilia* sp.; Rheden, Grebbeberg, 21.VIII.1975, on *Corylus avellana*; Wageningen, 2.VII.1973, leaves apple 'Goudreinet'; Vijlen, 26.VI.1973, on leaves apple 'Goudreinet'; Gendringen, 28.IX.1961, on *Corylus avellana*; Bennekom, 29.VIII.1961, on *Corylus avellana*, in col. NPP0. On *Tilia*, *Corylus*, *Salix* and *Malus* (Miedema 1987).

330 elongatus (Oudemans, 1930)

Typhlodromus elongatus
 Arnhem, col. Oudemans in col. Naturalis (Buitendijk 1945).

- 331 **hmiminai** **McMurtry & Bonfour, 1989**
(fig. 16)
Brakel (AC 135.632-424.194), 3.XI.2011, *Prunus spinosa* (leaf); Goes, Teevense Weide, 20.X.2011, on *Acer pseudoplatanus*; Zevenbergen (AC 101.882-340.558), 25.X.2010, *Carpinus betulus* (leaf); Leidschendam (AC 88.957-457.194), 21.X.2009, *Crataegus* (leaves, Berlese trap); Made (AC 115.717-410.139), 20.X.2008, *Prunus spinosa* (leaves), in col. NPPO.

Neoseiullela Muma, 1961

- 332 **aceri** **Collyer, 1857**
Typhlodromus aceri
Goes (AC 51.763-392.609), 17.VII.2009, *Acer* (leaves); Hazeldonk (AC 110.306-389.221), 21.X.2008, *Acer* (leaves); Paterswolde (AC 233.769-575.361), 6.X.2008, *Acer* (leaf); Hoogezand (AC 248.893-576.813), 6.X.2008, *Acer* (leaves); Hoorn (AC 134.112-518.745), 6.X.2008, *Tilia* (leaves); Vught (AC 145.504-405.433), 26.IX.2008, *Acer campestre* (leaves), in col. NPPO.
- 333 **tiliarum** (**Oudemans, 1930**)
Typhlodromus tiliarum
Venlo, Beckersweg, 1.IX.2011, *Prunus spinosa* (leaf); Venlo, Herungerweg 276, 1.IX.2011, *Ulmus* (leaves) and *Sorbus* (leaves); Hoorn (AC 134.112-518.745), 6.X.2008, *Tilia* (leaves); Beesd, 17.VI.2008, *Phyllostachys nigra* (leaves); Boskoop, 5.X.1992, *Tilia*; Wouw, 19.VIII.1992, *Tilia*; Amsterdam, 17.VIII.1992, *Tilia*; Blitterswijk, 10.VIII.1992, 3.IX.1991 and 6.VIII.1991, *Tilia*; Hoorn, 3.VIII.1992, *Tilia*; Wageningen 2.VII.1973, apple 'Goudreinet'; Zuidermeer, 28.VI.1973, apple 'Goudreinet'; Eck en Wiel, 5.VIII.1971 and 14.VIII.1972, apple 'Goudreinet'; Korteheove, 15.VI.1972, apple 'Goudreinet'; Goes, 18.IX.1951, apple, in col. NPPO. On apple in various orchards in the Netherlands (Miedema 1987).
- 334 **tuberculata** (**Wainstein, 1958**)
Typhlodromus tuberculatus
Zevenbergen, 20.X.2011, *Carpinus* (leaf); Goes, Hollandsche Hoeve (AC 51.746-392.736), 13.X.2009, *Acer pseudoplatanus* (leaves, Berlese trap); Goes (AC 51.763-392.609), 17.VII.2009, *Acer* (leaves); Sleeuwijk (AC 123.706/426.331),

6.XI.2008, *Acer* (leaf); Paterswolde (AC 233.769/575.361), 8.X.2008, *Acer* (leaf); Vlissingen (AC 27.167-386.725), 23.X.2008, *Acer* (leaf); Haarsteeg (AC 141.502/412.814), 23.X.2008, *Acer* (leaf); Made (AC 115.717/410.139), 20.X.2008, *Prunus* (leave), in col. NPPO.

Neoseiulus Hughes, 1948

- Amathia* Chaudri, Akbar & Rasool, 1979
Carinoseius Vainshtein, 1980
Cydnodromus Muma, 1961
Denmarkia Chaudri, Akbar & Rasool, 1979
Dictydionotus Athias-Henriot, 1979
Dictyonotus Athias-Henriot, 1978
Kashmerius Chaudri, Akbar & Rasool, 1979
Typhlodromopsis Muma, 1965
- 335 **agrestis** (**Karg, 1960**)
Typhlodromus agrestis
Amblyseius aequisetus Wainstein, 1962
Hoorn, 3.VIII.1992, *Tilia*; Wageningen, insecticide treatment, 14.IX.1971, under rye, 30.VI.1970, under peas, in col. NPPO (as in Miedema 1987).
- 336 **alpinus** (**Schweizer, 1922**)
Typhlodromus alpinus
Amblyseius aurescens Athias-Henriot, 1961
Lasioseius polonicus Willmann, 1949
Wageningen, Droevendaal, 20.XI.1984, soil sample agricultural grassland on sandy soil; Wageningen, experimental fields Plant Protection Service, 31.X.1986, records ALT. Wageningen, De Blauwe Kamer (GPS 51.943897, 5.609776), 8.VII.2017, *Eryngium campestre*, Maasdijk, (AC 72.575-443.868), 20.X.2009, *Crataegus* (leaves, Berlese trap); Ter Apel (AC 270-544), 16.VI.2001, *Hieracium pilosella*; Wageningen, insecticide treatment, 10.X.1973, under *Lolium perenne* treated with dieldrin, 15.VIII.1972, under rye; Lienden, Schuilenburg, 12.I.1971, stem apple 'Cox', in col. NPPO. On various plant species, under rye and under dune vegetation in the Netherlands (Miedema 1987).
- 337 **barkeri** (**Hughes, 1948**)
Amblyseius barkeri
Amblyseius masiaka Blommers & Chazeau, 1974
Amblyseius mckenziei Schuster & Pritchard, 1963
Amblyseius mycophilus Karg, 1970
Amblyseius oahuensis Prasad, 1968

- Amblyseius picketti* Specht, 1968
Amblyseius usitatus Van der Merwe, 1965
 St. Oedenrode (GPS 51.53, 35.53), 4.IX.2017,
Fragaria x ananassa (young leaf); Honselersdijk,
 28.IX.2010, *Ficus* (pot plant); Aalsmeer, 11.VII.2000,
Guzmania dissitiflora; Delft, 14.X.1999, *Ficus*;
 Wageningen, 21.XI.1997, bean, 23.III.1995, culture
 of Thysanoptera, 1.II.1993, *Chrysanthemum*;
 Mijdrecht, 16.IV.1997, *Gerbera*; Honselersdijk,
 28.XII.1995, *Ficus benjamina*; Helden, 26.X.1995,
 in greenhouse; Kwintshoeul, 9.III.1994, *Gerbera*;
 Hoek van Holland, 30.XI.1992, *Cuphea*; Naald-
 wijk, XII.1977, paprika, XII.1977, leek with *Thrips*
tabaci Lindeman, 1889 (Thysanoptera, Thripidae);
 Berkel Rodenrijs, 12.VIII.1974, cucumber with
Thrips tabaci; Ouddorp, De Punt, 16.VI.1966,
 litter *Ligustrum*, in col. NPP0.
- 338 **bicaudus (Wainstein, 1962)**
Typhlodromus bicaudus
 Nieuwe Statenzijl (AC 276.5-584.8), 12.VII.2013,
 harmonica galls of leafsheats of *Phragmites australis*;
 Elst (Gld), 18.VIII.2005, *Rosa* (flowers); Ede,
 (AC 174-448), 1.V.2004, *Corynephorus canescens*,
 railway station area; Hollum, 30.VII.1996, *Elymus*
arenarius; West-Terschelling, 30.V.1996, in col.
 NPP0.
- 339 **californicus (McGregor, 1954)***
Typhlodromus californicus
Typhlodromus mungeri McGregor, 1954
Typhlodromus chilensis Dosse, 1958
 Bemmel (GPS 51.93, 5.899), 14.XI.2017, *Spar-*
mannia (pot plant, on leaf); Leersum (AC 160.8-
 450.5), 11.XII.2015, *Dryopteris dilatata* (frond); Ede
 (AC 173.7-454.6), 11.XII.2015, *Polypodium vulgare*
 (frond); Overberg (AC 162.4-449.2), 11.XII.2015,
Polypodium vulgare (frond); Asten, 12.II.2008,
Semiarundinaria fastuosa; Arcen, 25.VII.2007, *Sasa*
tuboiana fastuosa (leaves); Bleiswijk, 3.VII.2007,
 cf. *Phyllostachys*; Valkenswaard, 23.VI.2007, *Semi-*
arundinaria viridis (leaf); Ede, Arnhemseweg 4,
 12.V.2007, x *Fatschedera*, in pot before man's shop,
 Jac. Hensen; Beesd, 9.XII.2006, garden bamboo;
 Asten, 23.XI.2006, garden bamboo; Venray, Marga
 Klompéstraat 5 (AC 197-393), 27.VII.2005, *Fagus*
sylvatica (hedge); Aalsmeer, 11.IX.2001, *Rosa*, older
 leaves, in glasshouse; Boskoop, 12.X.2000, *Buxus*;
 Wouw, 1.VIII.2000, *Malus*; Horst, 22.VII.1999,
Ulmus; Waardenburg, 25.VIII.1998, *Fragaria*
 'Elsanta', in plastic greenhouse; Eck en Wiel,
 20.X.1997, *Ribes*; Odiliapeel, 12.V.1997, *Fragaria*;
 Ede, 24.VIII.1996, *Pleiolablastus chino*, garden
 centre (Harkes); Mortel, 18.IX.1995, *Fragaria*;
 Helden, 27.VII.1995 greenhouse; Aalsmeer,
 28.III.1991 and 7.III.1991, *Cyclamen*, in col. NPP0.
- 340 **callunae (Willmann, 1952)**
Amblyseius callunae
 Terlet, 11.VII.1989, in *Calluna* vegetation, in col.
 Hs. Bennekom, 14.IX.1964, *Cladonia portentosa* in
 heathland, in col. NPP0.
- 341 **cucumeris (Oudemans, 1930)**
Typhlodromus cucumeris
Amblyseius coprophilus Karg, 1970
Typhlodromus thripsii MacGill, 1939
 Hoge Veluwe, Heiweg, 20.XI.1984, soil sample
 unfertilized grassland on sandy soil; Wageningen,
 experimental fields Plant Protection Service,
 31.X.1986; records ALT. Wageningen, De Blauwe
 Kamer (GPS 51.946754, 5.613510), 8.VII.2017,
Convolvulus sepium; Wageningen (GPS 51.970,
 5.667), 6.IX.2016, *Dryopteris filix-mas* (frond);
 Biervliet, Paulinaschor (AC 39-374), 28.V.2011,
 Poaceae; Leidschendam (AC 88.957-457.194),
 4.X.2010, *Crataegus* (leave); Kuintre Kuinderbos
 (AC 182-533), 6.VI.2009, Poaceae; Zeewolde,
 Winkelse Zand (AC 155-480), 5.VI.2009, *Anthriscus*
sylvestris; Vorden, Boevinck (AC 221-464),
 31.V.2008, beaten from vegetation at Berkel river
 shore; Etenaken, Fromberg (AC 190-317), 8.VI.2007,
 roadverge vegetation; Horst, 10.III.2005, *Cucumis*
sativus (leaves); Buren, 31.VII.1996, *Armeria*
maritima; Bemmel, 4.IV.1995, cucumber; Vleuten,
 28.X.1991, paprika; Lienden, Schuilenburg,
 12.I.1971, stem apple tree, in col. NPP0. On apple
 foliage and nettle (*Urtica dioica*) in various
 Dutch orchards (Miedema 1987).
- 342 **fallacis (Garman, 1948)***
Iphidulus fallacis
 Ede (AC 173.7-454.6), 11.XII.2015, *Polypodium*
vulgare (frond); Meijel (AC 188.437-370.288),
 6.X.2009, *Prunus* (leaves, Berlese trap); Beesd,
 17.VI.2008, *Semiarundinaria fastuosa* 'Viridis'
 (leaves), in col. NPP0.

343 **reductus** (Wainstein, 1962)

Amblyseius reductus

Wageningen, 9.XI.2011, *Viburnum tinus* (leaf); Bakel (AC 136.602-424.205), 3.XI.2011, *Rubus* (leaf); Helenaveen (AC 192.007-377.145), 21.X.2011, *Fagus* (leaf); Made (AC 116.157-411.880), 1.IX.2009, *Rosa canina* (Berlese trap) Goes, 14.II.2009, litter of partly *Acer pseudoplatanus* (Berlese trap); Ter Apel (AC 270-543), 16.VI.2001, *Rubus idaeus*; Berkel en Rodenrijs, 25.XI.1986, cucumber; Pannerden, 31.VIII.1973, leaves apple 'Goudreinet', in col. NPPO.

344 **reticulatus** (Oudemans, 1930)

Typhlodromus reticulatus

Wageningen, col. Oudemans in col. Naturalis (Buitendijk 1945).

345 **subsolidus** (Begljarov, 1960)

Amblyseius subsolidus

Amblyseius canadensis Chant & Hansell, 1971 Bronckhorst (AC 209-455), 30.V.2008, *Salix alba* (twigs), in col. NPPO. On apple trees from various orchards in the Netherlands (Miedema 1987).

346 **umbraticus** (Chant, 1956)

Typhlodromus umbraticus

Wageningen (AC 174-443), 25.VII.2005, *Verbascum thapsus* (upperside leaf), in col. NPPO.

347 **zwoelferi** (Dosse, 1957)

Amblyseius zwoelferi

Texel, slufte, 7.II.1993, in litter on saltmarsh, in col. HS. From soil under rye (Miedema 1987).

Paraseiulus Muma, 1961

Bawus Van der Merwe, 1968

Berleseiulus Arutyunyan, 1974

348 **soleiger** (Ribaga, 1902)

Seiulus soleiger

Paraseiulus incognitus Wainstein & Arutyunyan, 1967

Typhlodromus trimediosetus Xin, Liang & Ke,

1980

Paraseiulus xinigenis Chen & Chu, 1980

Clinge, Kriekputten (AC 65-365), 27.V.2011, *Alnus*; Naarden, Naardermeent (AC 141-479), 4.VI.2010, *Quercus*; Ter Apel, Vloevelden (AC 270-543), 16.VI.2001, *Betula pendula*; Egmond aan Zee, 26.V.2000, *Alnus*; Achterberg, 9.VII.1993,

Sorbus; Wageningen, 17.VIII.1969, in galls of *Phytoptus brevitaris* Focke, 1890 (Prostigmata, Eriophyidae) on *Alnus glutinosa*; Bennekom, 14.IX.1966, *Fagus*; Wageningen, 2.IX.1957, *Quercus*, in col. NPPO. On *Fagus sylvatica*, *Alnus glutinosa*, *Quercus robur* and apple trees in the Netherlands (Miedema 1987).

349 **talbii** (Athias-Henriot, 1960)

Typhlodromus talbii

Paraseiulus ostiolatus Athias-Henriot, 1978

Paraseiulus subsoleiger Wainstein, 1962

Typhlodromus amaliae Ragusa & Swirski, 1976

Typhlodromus tetramedius Zaher & Shehata, 1970

Naarden, Naardermeent (AC 141-479), 4.VI.2010,

Crataegus; Naaldwijk (AC 76.374-443.842),

19.X.2009, *Rosa* (leaves, Berlese trap); Grubben-

vorst (AC 203.512-381.879), 9.IX.2009, *Prunus*

(leaves, Berlese trap); Aalsmeer (AC 114.995-

475.524), 2.IX.2009, *Crataegus* (Berlese trap);

Goes (AC 51.763-392.609), 17.VII.2009, *Acer*

(leaves), in col. NPPO. On apple trees in two

different orchards in the Netherlands (Miedema 1987).

350 **triporus** (Chant & Shaul, 1982)

Typhlodromus triporus

Berkel & Rodenrijs (AC 93.029-447.525),

28.IX.2010, *Cornus* (leaves); Naarden, Naarder-

meent (AC 141-479), 4.VI.2010, *Crataegus*; Driel

(AC 183.852-440.638), 14.X.2009, *Crataegus* &

Fagus (leaves, Berlese trap); Veere (AC 34.778-

395.841), 22.IX.2009, *Crataegus*, (leaves, Berlese

trap); Grubbenvorst (AC 203.512/381.879),

9.IX.2009, *Prunus* (leaves, Berlese trap); IJssel-

muiden (AC 193.125-509.786), 2.IX.2009, *Carpinus*

(Berlese trap); Domburg (AC 25.393-399.717),

21.X.2008, *Sorbus* (leaves); Middelbeers Land-

shotse Heide (AC 145-383), 10.VI.2006, *Betula*

pendula; West-Terschelling, 30.V.1996, *Malus*;

Hoorn, 28.V.1991, *Tilia*, in col. NPPO. On apple

leaves, twigs and stems in two different orchards in the Netherlands (Miedema 1987).

Phytoseiulus Evans, 1952

Mesoseiulus González & Schuster, 1962

351 **persimilis** Athias-Henriot, 1957*

Amblyseius tardi Lombardini, 1959

Phytoseiulus riegei Dosse, 1958
Waddinxveen, II.XI.2016, *Beaucarnea* (pot plant);
Wageningen, 5.XII.2013, in greenhouse *Triticum*
(leaves), XI.1977, in greenhouse on beans with
Tetranychus urticae C.L. Koch, 1836 (Prostigmata,
Tetranychidae); Elshout (AC 140.584-412.652),
I.XI.2010, *Rubus* leaf; Denekamp (AC 266.388-
491.597), 7.X.2009, on *Carpinus* leaves; Est
(AC 150.662-429.494), 28.IX.2009, on *Fagus*
leaves; Elshout (AC 140.584-412.652), 22.IX.2008,
on *Rubus idaeus* leaves; Eck & Wiel, 20.X.1997,
on *Ribes*; Heerle, 10.VI.1988, on cucumber;
Westmaas, I.X.1987, on bean; Pijnacker, II.V.1987,
in greenhouse on cucumber, in col. NPPO.

Phytoseius Canestrini & Fanzago, 1876

Athiasodromus Özdikmen, 2008
Diadromus Athias-Henriot, 1960
Pennaseius Pritchard & Baker, 1962

352 macropilis (Banks, 1909)

Phytoseius spoofi Oudemans, 1915
Leidschendam (AC 88.957-457.194), 21.X.2009,
Crataegus (leaves, Berlese trap); Wageningen,
15.VII.1993, *Malus*; Hogebeintum, Harsta State,
29.V.1973, apple, 'Goudreinet'; Pannerden,
28.V.1973, apple, 'Goudreinet'; Vijlen, 22.V.1973,
apple, 'Goudreinet'; Epen, 22.V.1973, apple,
'Goudreinet'; Zevenaar, 16.IX.1971, apple 'Cox';
Epen, Bellet Hoeve, 30.VII.1971, apple, 'Goudreinet';
Zevenaar, 9.X.1970, apple, in col. NPPO. On fruit
trees and other deciduous trees, herbs and shrubs
(Miedema 1987).

Proprioiseopsis Muma, 1961

Amblyseiulus Muma, 1961
Patinoseius Karg, 1983
Pavlovskeius Wainstein, 1962
Peloseius Karg, 1983
Tuboseius Karg, 1983

353 jugortus (Athias-Henriot, 1966)

Amblyseiulus jugortus
Anloo, Drentse Aa, 14.X.1992, light fertilized
moist grassland soil sample; records ALT. Oud-
dorp, Westduinen, 16.VI.1966, soil sample south
slope under *Hieracium pilosella*; Ermelo, Hout-
dorp, 5.IV.1966, soil under *Calluna*; Bennekom,

14.IX.1964, in *Cladonia portentosa* in heathland,
in col. NPPO.

354 okanagensis (Chant, 1957) (fig. 17)

Typhlodromus okanagensis
Typhlodromus levis Wainstein, 1960
Brakel (AC 136.602-424.205), 3.XI.2011, *Rubus*
(leaf); Kunrade, Kunderberg (AC 194-319),
8.VI.2007, in vegetation with *Mentha saveolens*;
Eck en Wiel, 5.VIII.1971, 100 leaves apple
'Goudreinet'; Lienden, Schuilenburg 12.I.1971,
on stem apple tree, in col. NPPO.

355 sororculus (Wainstein, 1960)

Typhlodromus sororculus
Kats, 18.XI.2017, in seashore ruderal vegetation,
soil sample 0-5 cm, in col. HS.

356 umidus Karg, 1989

Hoge Veluwe, Aalderinksveld, 3.XI.2015, soil
0-5 cm., in col. HS.

Typhlodromips De Leon, 1965

357 longulus Berlese, 1914

Amblyseiulus longulus
Bennekom, 14.IX.1964, *Cladonia portentosa* in
heathland, in col. NPPO.

358 similis (C.L. Koch, 1839)

Zercon similis
Typhlodromus wainsteini Gomelaury, 1968
Typhlodromus truncatus Oudemans, 1905
Meerssen, Burgst bij Breda, Naarden, col. Oude-
mans in col. Naturalis (Buitendijk 1945).

Typhlodromus Scheuten, 1857

Aphanoseius Vainshtein, 1972
Anthoseius De Leon, 1959
Berethria Tuttle & Muma, 1973
Colchodromus Wainstein, 1962
Indrodromus Ghai & Menon, 1970
Lindquistoseia Denmark & Welbourn, 2002
Litoseius Kolodochka, 1992
Mumaseius De Leon, 1965
Orientiseius Muma & Denmark, 1968
Oudemanus Denmark, 1992
Prasadoseia Denmark & Welbourn, 2002
Seiodromus Wainstein, 1962
Taxodromus Wainstein, 1962
Trionus Denmark, 1992

- Typhlodromella* Muma, 1961
Vittoseius Kolodochka, 1988
Wainsteinius Arutyunyan, 1969
- 359 baccettii Lombardini, 1960**
Anthoseius oligadenus Athias-Henriot, 1978
Typhlodromus helenae Schicha & Dosse, 1974
 Nieuwvliet-Bad, Zwarte Polder (AC 19-379),
 28.V.2011, *Hippophae rhamnoides* and *Prunus spinosa*; Leidschendam (AC 88.957-457.194),
 4.X.2010, *Crataegus*; Veere (AC 34.778-395-841),
 22.IX.2009, *Crataegus* (leaf, Berlese trap); Heer-
 hugowaard (AC 118.526-521.172), 17.X.2008, *Acer*
 (leaf); Purmerend (xy 125338/502202), 6.X.2008,
Acer (leaf); Bronckhorst (AC 209-456), 30.V.2008,
Crataegus (twig), in col. NPPO.
- 360 bakeri (Garman, 1948)**
Seiulus bakeri
 Leidschendam, (AC 88.957/457.194), 24.X.2011,
Crataegus (leaf); Naarden, Naardermeer (AC 137-
 477), 5.VI.2010, *Alnus*; Kuinre, Kuinderbos,
 Burchtbos (AC 185-532), 6.VI.2009, *Picea*; Zeewolde,
 Winkelse zand (AC 155-480), 5.VI.2009, *Sambucus*
nigra; Reusel, Reuselse Moeren (AC 139-370),
 9.VI.2006, *Crataegus*; Hapert, Bredase Baan
 (AC 147-370), 9.VI.2006, *Pinus sylvestris*; Herken-
 bosch, Meinweg (AC 207-354), 1.VI.2002, *Cytisus*
scoparius; Egmond-Binnen, Vredestein, 27.VI.2000,
Ulmus; Dodewaard, Hien, 2.VII.1973, apple
 'Goudreinet'; Ommereveld, VI.1971, apple,
 3.VI/10.VI.1970, branches apple, in col. NPPO. On
 apple trees in various orchards in the Netherlands
 (Miedema 1987).
- 361 bichaetae Karg, 1989**
 Vasse, Vasserheide (AC 253-493), 14.VI.2003,
Quercus robur, in col. NPPO.
- 362 ernesti Ragusa & Swirski, 1978**
 Vorden (AC 220-461) 3.V.2008, *Polytrichum* sp.;
 Hapert, Bredase Baan (AC 146-371), 9.VI.2006,
Picea abies; Doorn, Gimborn arboretum (AC 150-
 449), 15.V.2004, *Juniperus chinensis*, in col. NPPO.
- 363 foenilis Oudemans, 1930**
Typhlodromus cryptus Athias-Henriot, 1960
Anthoseius picea Karg & Edland, 1987
Mumaseius subalgericus Abbasova, 1970
 Franeker, col. Oudemans in col. Naturalis
 (Buitendijk 1945); Ede (AC 174-448), 17.VIII.2013,
Castanea sativa; Obdam, 22.VI.2011, *Syringa*
 (bark); Nieuwvliet-Bad, Zwarte Polder (AC 19-
 379), 28.V.2011, *Salix aurita*; Valkeveen (AC 142.9-
 479.7), 25.VI.2010, *Hedera helix* (leaf); Driel
 (AC 183.852-440.638), 14.X.2009, *Crataegus* &
Fagus (leaves, Berlese trap); Harmelen (AC 127.656-
 456.508), 23.IX.2009, *Malus*; Bleiswijk (AC 96.773-
 448.879), 3.IX.2009, *Rosa*; Bronckhorst (AC 209-
 455), 30.V.2008, *Salix alba* (twigs); Borculo Beek-
 vliet (AC 229-459), 30.V.2008, *Juniperus communis*;
 Wageningen, (AC 174.7-443.1), 27.V.2008, *Pinus*
syvestris; Afferden, Afferdensche en Deestsche
 Waarden (AC 172-433), 11.X.2006, *Crataegus*
 (leaves); Hapert, Bredase Baan (AC 147-370),
 9.VI.2006, *Pinus sylvestris*; Egmond aan Zee,
 26.V.2000, *Solanum dulcamara*; Egmond-Binnen,
 Vredestein, 27.VI.2000, *Ulmus*; Egmond-Binnen,
 26.V.2000, *Sambucus nigra*, in col. NPPO.
- 364 involutus Livshitz & Kuznetsov, 1972**
 Wageningen, 19.IV.2002, *Juniperus*, in col. NPPO.
- 365 laurae Arutyunyan, 1974**
 Huizen, Limitische Heide (AC 142-478), 5.VI.2010,
Pinus sylvestris; Dronten, Roggebotsebos (AC 183-
 508), 5.VI.2009, *Pinus sylvestris*; Hapert, Bredase
 Baan (AC 147-370), 9.VI.2006, *Pinus sylvestris*;
 Hezingen, Paardenschlenkte (AC 256-496),
 13.VI.2003, *Pinus sylvestris*, in col. NPPO.
- 366 pyri Scheuten 1857**
 Bennekom (AC 175.7-445.3), 12.III.2017, *Pleioblastus*
pygmaeus; Wageningen (GPS 51.970, 5.667),
 6.IX.2016, *Dryopteris filix-mas* (frond); Ede (GPS
 52.078, 5.65), 14.VI.2015, *Dryopteris carthusiana*
 (frond); Nieuwvliet-Bad, Zwarte Polder (AC 19-
 379), 28.V.2011, *Salix aurita*; Leidschendam
 (AC 88.957-457.194), 4.X.2010, *Crataegus* (leaf);
 Nieuwkerk (AC 130.096-388.704), 24.IX.2008,
Carpinus betulus (leaves); Kunrade, Kunderberg
 (AC 194-320), 8.VI.2007, *Cornus*; Wilhelminadorp,
 22.VI.1994, *Malus*, 25.V.1993, *Corylus avellana*;
 Amsterdam, 4.IX.1992, *Tilia*; Boskoop, 17.IV.1991
 and 6.VII.1992, *Tilia*; Wouw, 27.V.1992, *Tilia*;
 Arkel, 4.IX.1991, apple; Lienden, Schuilenburg,
 17.VIII.1973, apple 'Jonathan', summer 1972,
Heracleum sphondilum, winter 1971/1972, apple,
 'James Grieve'; Dodewaard, Hien, 15.VIII.1972,
 apple, 'Goudreinet'; Zevenaer, 2.VIII.1971, apple

'Goudreinet'; Bennekom, 29.VIII.1961, *Rhamnus frangula*, in col. NPPO.

367 rhenanus (Oudemans, 1905)

Seiulus rhenanus

Borculo, Beekvliet (AC 229.7-459.5), 30.V.2008, *Erica tetralix* and *Molinia caerulea*; Otterlo, Hoge Veluwe, edge of Deelensche Wasch (AC 187.3-457.7), 7.X.2008, *Erica tetralix*; Vorden, Groote Veld (AC 220-461), 31.V.2008, *Erica tetralix* (twig); Gasteren, Gasterense Duinen (AC 240.1-562.6), 27.V.2005, *Erica tetralix*; Lattrop, Bergvennen (AC 265-494), 14.VI.2003, *Betula pubescens* (leaves); Herkenbosch, Meinweg (AC 207-354), 1.VI.2002, *Teucrium scorodonia*; Eys, De Piepert, 12.VIII.1998, *Origanum vulgare*; Lienden, Schuilenburg, winter 1971-1972 apple, 'James Grieve', 12.I.1971, apple 'Cox'; Zevenaar, 2.VIII.1971, apple, 'Goudreinet', in col. NPPO.

368 richteri Karg, 1970

Anthoseius verrucosus Wainstein, 1972

Obdam, 22.VI.2011, *Syringa*; Clinge, Kriekeputten (AC 65-365), 27.V.2011, *Pinus sylvestris*; Naarden, Naardermeer (AC 138-477), 5.VI.2010, *Quercus*; Kuinre, Kuinderbos, Burchtbos (AC 185-532), 6.VI.2009, *Fraxinus excelsior*; Zeewolde, Winkelse zand (AC 155-480), 5.VI.2009, *Sambucus nigra*; Vorden, Groote Veld (AC 220-461), 31.V.2008, *Pinus*; Bronckhorst (AC 209-456), 30.V.2008, *Crataegus* (twig); Kunrade, Kunderberg (AC 194-320), 8.VI.2007, *Malus* (old tree); Middelbeers, Landschotsche Heide (AC 145-383), 10.VI.2006, *Pinus sylvestris*; Molenbroek (AC 146-384), *Quercus robur* (dead twig); Reusel, Reuselse Moeren (AC 139-370), 9.VI.2006, *Crataegus*; Hapert, Bredase Baan (AC 147-370), 9.VI.2006, *Pinus sylvestris*; Hezingen, Paardenschlenkte (AC 256-496), 13.VI.2003, *Pinus sylvestris*; Kootwijk, Kootwijkerveen (AC 183-468), 27.V.2003, beaten from vegetation; Herkenbosch, Meinweg (AC 208-355), 1.VI.2002, *Quercus robur*, in col. NPPO.

369 setubali Dosse, 1961

Typhlodromus laurentii Ragusa & Swirski, 1978
Vlodrop Station (AC 208-351), 31.V.2002, *Rhamnus frangula*; Egmond aan Zee, 26.V.2000, Poaceae; Ede, 22.VII.1996, *Molinia caerulea*, in col. NPPO.

370 tiliae Oudemans, 1929

Typhlodromus exhilaratus Ragusa, 1977

Arnhem, col. Oudemans in col. Naturalis (Buitendijk 1945); Renesse, 14.VIII.1961, witches broom *Solanum dulcamara* with *Aceria cladoph-thira* Nalepa, 1892 (Prostigmata, Eriophyidae); Wageningen, 2.IX.1957, *Tilia*, in col. NPPO.

Superfamily DERMANYSSOIDEA

Family DERMANYSSIDAE

Dermanyssus Dugès, 1834

Allodermanyssus Ewing, 1923

Microdermanyssus Moss, 1967

371 gallinae (De Geer, 1778) (fig. 18)

Acarus gallinae

Dermanyssus avium Dugès, 1834

Dermanyssus evotomydis Evans, 1933

Nijkerk, Utrecht, Amsterdam, Loosduinen, on *Gallus gallus domesticus* (Linnaeus, 1758) (Galliformes, Phasianidae) (Oudemans, 1902). Netherlands, 4.X.1962, on *Canis lupus familiaris* Linnaeus, 1758 (Carnivora, Canidae) body; 12.VI.1984, on *Serinus canarius* (Linnaeus, 1758) (Passeriformes, Fringillidae) body; Driebergen, 8.VIII.1987, in henhouse; Bunnik, 16.V.1977, on *G. gallus domesticus* body; Kruiningen, on *Homo sapiens* Linnaeus, 1758 (Primates, Hominidae) in bedroom; Amsterdam, Artis Zoo, on *Cissa* sp. (Passeriformes, Corvidae) skin; 11.XII.1975, on *G. gallus domesticus* battery henhouse, col. Naturalis, in col. Cremers (part); Beekbergen, 14.V.1989, Utrecht, VIII.2000, Best, 11.2008, in poultryhouse; Groningen, 2.IV.2001, on *Sturnus vulgaris* Linnaeus, 1758 (Passeriformes, Sturnidae), in col. Cremers; Lelystad, 31.III.2014, in poultry house; Amsterdam, 4.VIII.2008, *Coffea arabica* (seed); Nederhemert, 25.VI.1990, in thatched roof; Zevenhuizen, 9.VI.1988, in house; Groningen, 20.V.1987, in house; Boerdonk, 19.VII.1973, in house; Wolphaartsdijk, 30.III.1973, building red croos with numerous pigeons on the roof; Beekbergen, 7.VI.1966, in bungalow; Steenwijk, 15.VI.1964, in house (attic); Schagen, 10.VI.1960, in house; Den Helder, 17.VI.1959, in house; Zwolle,

13.VIII.1954, on chicken; Gouda, 7.VII.1954, in house; Epen, 13.VI.1954, in house, in col. NPP0. The species is common and is a serious pest in poultry.

372 **hirundinis (Hermann, 1804)**

Acarus hirundinis

Arnhem, col. Oudemans in col. Naturalis (Buitendijk 1945); Rauwerd, VIII.1950, in nest *Hirundo rustica* (Linnaeus, 1758) (Passeriformes, Hirundinidae), col. Naturalis. Buitendijk (1945).

373 **lacertarum Contarini, 1883***

Maarsbergen, 15.I.1963, on *Lacerta viridis* Laurenti, 1768 (Squamata, Lacertidae) in terrarium, originally from La Napoule (Fr.), in col. NPP0.

Family ENTONYSSIDAE

Entonyssus Ewing, 1922

374 **squamatus Fain, Kutzer & Fordinal, 1983***

Netherlands, 20.II.1983, in trachea/lungs of *Elaphe schrenckii* Strauch, 1873 (Squamata, Colubridae), col. Naturalis, in col. Cremers.

Family HALARACHNIDAE

Halarachne Allmann, 1847

Rhinacarus Nehring, 1884

375 **halichoeri Allmann, 1847 (fig. 19)**

Texel (rehabilitation centre), 24.XI.1987; Texel, 26.XII.2010; Netherlands, 8.VI.2012, on *Halichoerus grypus* (Fabricius, 1791) (Carnivora, Phocidae) nose, in col. Cremers.

Orthohalarachne Newell, 1947

376 **attenuata (Banks, 1910)***

Halarachne attenuata

Halarachne reflexa Tubb, 1937

Harderwijk (Dolphinarium), 3.XII.2015, on *Odobenus rosmarus* (Linnaeus, 1758) (Carnivora, Odobenidae) nose, in col. Cremers.

377 **diminuata (Doetschman, 1944)***

Halarachne diminuata

Harderwijk (Dolphinarium), 29.V.1956, on *Zalophus californianus* (Lesson, 1828) (Carnivora, Otariidae) nose, in col. Cremers.

Pneumonyssoides Fain, 1955

378 **caninum (Chandler & Rhue, 1940)**

Pneumonyssus caninum

Zeist, 28.VI.1985, on *Canis lupus familiaris*

Linnaeus, 1758 (Carnivora, Canidae) nose, in col. Cremers.

Pneumonyssus Banks, 1901

379 **oudemansi Bohm & Supperer, 1955* (fig. 20)**

Arnhem (Burgers Zoo), 9.XI.2012, on *Pan troglodytes* (Blumenbach, 1776) (Primates, Hominidae) trachea, in col. Cremers.

Family LAELAPIDAE

Androlaelaps Berlese, 1903

Gnatholaelaps Till, 1972

Gomphadorolaelaps Till, 1972

Haemolaelaps Berlese, 1910

380 **casalis (Berlese, 1887)**

Iphis casalis

Utrecht, 15.VI.1979, in stable Veterinary Faculty; Arnhem, 10.VIII.1981, on *Capra aegagrus hircus* (Linnaeus, 1758) (Artiodactyla, Bovidae), foreleg; Utrecht, 15.VIII.1985, on *Testudo hermanni* Gmelin, 1789 (Chelonia, Testudinidae); Leiden, 11.VII.2008, in terrarium with lizards, in col. Cremers; Slootdorp, 13.VII.1987, in house; Kessel, 7.VI.1971, in farm; Wageningen, 15.III.1972, culture of *Adoxophyes orana*; Putten, 1.X.1970, litter of *Neovison vison* (Schreber, 1777) (Carnivora, Mustelidae); Drimmelen, 17.V.1961, in house; Zijldijk, 15.XI.1958, in hay; Rockanje, 3.IX.1956, in shed; Wijchen, 20.VII.1955, in farm; Ammerzode, 30.VI.1955, in farm; Chaam, 29.VI.1955, in stable; Rozenburg, 25.VI.1955, in shed; Vlagtwedde, 2.VI.1955, in house; Rijsbergen, 13.X.1954, in farm; Geldrop, 19.VIII.1954, in house; Epen, 23.VII.1954, in house; Westerbork, 9.VIII.1954, in house; Laren, 24.V.1954; Hei en Boecop, 13.V.1955, in farm; Lithoijen, 6.VIII.1952, in house; Aalsmeer, 9.VI.1952, in farm, in col. NPP0.

381 **fahrenheiti (Berlese, 1911)**

Laelaps fahrenheiti

Atricholaelaps sigmodoni Strandtmann, 1946
Haemolaelaps scalopi Keegan, 1946
Laelaps californicus Ewing, 1925
Laelaps glasgowi Ewing, 1925
Laelaps stegemani Hefley, 1935
Laelaps virginianus Ewing, 1925
Liponyssus setiger Ewing, 1920
Netherlands, 28.VIII.1957, on *Microtus arvalis* (Pallas, 1778) (Rodentia, Cricetidae), fur; II.2007, on *Erinaceus europaeus* Linnaeus, 1758 (Eulipotyphla, Erinaceidae), skin, col. Naturalis; Utrecht, 16.IX.1954, on *Mustela putorius furo* Linnaeus, 1758 (Carnivora, Mustelidae), fur; Rotterdam, 2.III.2007 and 6.XI.2007, on *Erinaceus europaeus* Linnaeus, 1758 (Eulipotyphla, Erinaceidae), fur; Leuth 21.III.2017; Espel, 15.VI.2017, both on *Mustela nivalis* Linnaeus, 1766 (Carnivora, Mustelidae), fur; in col. Cremers.

382 fenilis (Mégnin, 1876)

Haemolaelaps fenilis
Haemolaelaps molestus Oudemans, 1929
Haemolaelaps oculus Oudemans, 1915
Haemolaelaps mohrae Oudemans, 1928
Utrecht, Finkum (types of *H. molestus*), Westdongeradeel, Anna Paulowna, Haarlemmermeer, Aalsmeer, Wapenveld, Vrijhoeve Capelle, Arnhem, 's Grevelduin-Kapelle, Hengelo, Vorden, Schipborg, Franeker, col. Oudemans in col. Naturalis (Buitendijk 1945).

383 hermaphrodita (Berlese, 1887)

Laelaps hermaphrodita
Hypoaspis hermaphrodita
Arnhem, col. Oudemans in col. Naturalis (Buitendijk 1945).

Coleolaelaps Berlese, 1914

384 celeripediformis Oudemans, 1902

Hypoaspis celeripediformis
Sneek, col. Oudemans in col. Naturalis (Buitendijk 1945).

Cosmolaelaps Berlese, 1903

385 claviger (Berlese, 1883)

Laelaps claviger
Hypoaspis claviger
Hypoaspis auris Karg, 1965

Arnhem, Kemperbergerweg 67, 19.VII.1989, litter of conifers; Beekbergen, Elsbosweg side of ditch, 14.VII.1991, in *Mnium hornum* in col. HS. Hoge Veluwe, Heiweg, 20.XI.1984, unfertilized grassland; Bennekom, Bovenbuurt, 20.V.1985, light fertilized grassland, soil samples grasslands on sandy soil; Wageningen, experimental fields Plant Protection Service, 31.X.1986; Bennekom, Bovenbuurt, 22.II.2000, 23.V.2000 soil sample grassland sandy soil; Budel, 15.X.2001, soil sample heathland on sandy soil; records ALT. Wageningen, experimental fields Plant Protection Service, 9.VIII.1974, under *Lolium perenne*, 14.IX.1971 and 19.X.1971, under rye, 30.VI.1970, under peas; Ede, XI/III.1972, in straw under *Carpinus* hedge; Ouddorp, Westduinen, 16.VI.1966, south slope and north slope under *Hieracium pilosella*; in col. NPP0.

386 cuneifer (Michael, 1891)

Laelaps cuneifer
Hypoaspis cuneifer
Exaeten, col. Oudemans in col. Naturalis (Buitendijk 1945). Wageningen, experimental fields Plant Protection Service, 9.VIII.1974, insecticide treatment, 17.IV.1962, soil sample lawn, autumn 1958, in moss under *Pinus silvestris*, in col. NPP0.

387 vacua (Michael, 1891)

Laelaps vacua
Imbos, 20.V.1985, unfertilized grassland soil sample; Wageningen, Ossekampen 3.V.2001, soil sample grassland on river clay soil; records ALT. Ouddorp, 16.VI.1966, north slope under *Festuca* sp., *Hieracium* sp. and moss, in col. NPP0.

Echinonyssus Hirst, 1925

Hirstionyssus Fonseca, 1948
Mephitomyssus Herrin, 1970

388 arcuatus (C.L. Koch, 1839)

Dermanyssus arcuatus
Utrecht, Sneek, Arnhem, col. Oudemans in col. Naturalis (Buitendijk 1945); Amsterdam, Leiden, on e.g. *Eptesicus serotinus* (Schreber, 1774) and *Nyctalus noctula* (Schreber, 1774) (Chiroptera, Vespertilionidae) (Oudemans 1903).

- 389 isabellinus (Oudemans, 1913) (fig. 21)**
Liponyssus isabellinus
 Rolduc, Arnhem, Sneek, col. Oudemans in col. Naturalis (Buitendijk 1945); Duin en Kruidberg 20.IX.2001, on *Clethrionomys glareolus* (Schreber, 1780) (Rodentia, Cricetidae), fur, col. Naturalis; in col. Cremers; Linschoten 19.VI.1964, on *Microtus arvalis* (Pallas, 1778) (Rodentia, Muridae), fur; Bijlmer, 12.IX.2001, on *Apodemus sylvaticus* (Linnaeus, 1758) (Rodentia, Muridae), fur; Maarssen, IX.2013, on *Clethrionomys glareolus* (Schreber, 1780) (Rodentia, Cricetidae), fur; Espel, 15.IV.2017, Dalfsen, 1.X.2017, on *Mustela nivalis* Linnaeus, 1766 (Carnivora, Mustelidae), fur, in col. Cremers.
- 390 lukoschusi Tenorio & Radovsky, 1979**
 Nijmegen 22.III.1967, 20.XII.1970, 6.IV.1972, on *Talpa europaea* Linnaeus, 1758 (Eulipotyphla, Talpidae) collected by F. Lukoschus. Paratypes in col. Naturalis (Tenorio & Radovsky 1979).
- 391 soricis (Turk, 1945)**
Ichoronyssus soricis
 Bijlmer, 12.IX.2001, on *Crocidura russula* (Hermann, 1780) (Eulipotyphla, Soricidae), fur, col. Cremers.
- 392 talpae (Zemskaya, 1955)**
Hirstionyssus talpae
 Hilversum, 25.VIII.1974, on *Talpa europaea* Linnaeus, 1758 (Eulipotyphla, Talpidae), fur, col. Naturalis, in col. Cremers.
- Eulaelaps Berlese, 1903**
- 393 stabularis (C.L. Koch, 1836)**
Gamasus stabularis
Laelaps stabularis C.L. Koch, 1839
 Rotterdam, Haarlem, 's Gravenhage, Amsterdam, Naardermeer, Aalbeek, Valkenburg, Sittard, col. Oudemans in col. Naturalis (Buitendijk 1945); Duin en Kruidberg, 7.IX.2001 and 18.IX.2001, Maarssen, IX.2013, on *Clethrionomys glareolus* (Schreber, 1780) (Rodentia, Cricetidae), fur, Vlieland, 19.IX.1967; Duin en Kruidberg, 19.IX.2001, on *Apodemus sylvaticus* (Linnaeus, 1758) (Rodentia, Muridae), fur, in col. Cremers. Hoog Soeren, forest *Quercus robur*, litterbag with *Deschampsia flexuosa*, 22.V.1989, 15.VI.1989; Hoog

Soeren, forest *Quercus robur*, litterbag with faeces of red deer (*Cervus elaphus* Linnaeus, 1758), 22.V.1989, 15.VI.1989, 7.VII.1989; Epe, 22.IX.1997, old hedgerow, soil sample; records ALT. Wageningen, 13.IV.1949, on *Talpa europaea* Linnaeus, 1758 (Eulipotyphla, Talpidae), in col. NPP0.

Gaeolaelaps Evans & Till, 1966

Geolaelaps Berlese, 1923 nomen nudum

394 aculeifer (Canestrini, 1884) (fig. 22)

Laelaps aculeifer

Hypoaspis aculeifer

Androlaelaps consisus Womersley, 1956

Achterberg, arable land, wheat, 20.III.1969, soil 15-17.5 cm.; Wageningen, 30.X.1973, in *Lolium perenne* in greenhouse soil; Rotterdam, Maasdijk, 12.XI.1997, soil 0-5 cm. on former compost business; in col. HS. Wageningen, Droevendaal and Dijkgraaf, 20.XI.1984, soil samples agricultural grasslands on sandy soil; Wageningen, experimental fields Plant Protection Service, 31.X.1986; Arnhemse heide, 14.I.1988, agricultural grassland soil sample; Hiaure, 10.XI.1997, grassland clay soil; Rotterdam, Maasdijk, 12.XI.1997, harbour mud depot; Eefde, 27.IV.1999, soil sample agricultural grassland on sandy soil; Bennekom, Bovenbuurt, 23.V.2000, soil sample grassland sandy soil; Geesteren (Gld), 9.V.2000, soil sample grassland sandy soil; Vorden, 3.VII.2001; Bennekom, Bovenbuurt, 23.IV.2001, soil sample arable land on sandy soil; Wageningen, Ossekampen, 3.V.2001, soil sample grassland on river clay soil; Kloosterzande, 25.III.2002; Anna Paulowna, 4.IV.2002, soil sample arable land marine clay soil; Eijsden, 4.VII.2003, soil sample grassland on loess; Bakel, 10.X.2005, soil sample grassland on sandy soil; records ALT. Lisserbroek, 12.III.2008, *Eucomis montana* (bulb); Hillegom, 18.X.2007, *Lilium* 'Triumphator' (bulb); Aalsmeer, 21.XII.1995, *Freesia*; Hensbroek, 9.III.1999, on *Lilium*; Wageningen, 17.III.1989, under potato, 29.III.1973, greenhouse (Ennik), 14.IX.1971, insecticide treatment control, 19.X.1971, under rye treated with dieldrin, 30.VI.1970, under peas, 6.V.1963, in pot white clover treated with aldrin, 23.VIII.1962 and 11.IX.1962, insecticide treatment control;

Bennekom, Hoekelum, 12.XII.1973, beech litter; Wamel, 16.IV.1973, *Freesia*; Winterswijk, Meerdink, XII.1969, litter oak forest; Ouddorp, Westduinen, 16.VI.1966, under *Hieracium pilosella* south slope; Ouddorp, De Punt, 16.VI.1966, litter *Ligustrum*; in col. NPP0. Frequent species in various kinds of soil.

395 angustiscutatus (Willmann, 1951)

Hypoaspis angustiscutatus

Hypoaspis elongata Hirschmann, 1969

Eindhoven, Urkhovense zeggén, next to Vloweitje, wet grassland, in soil sample 0-5 cm., 31.III.2017; in col. HS. Wageningen Droevendaal, 20.XI.1984; Bennekom, Bovenbuurt 5.IX.2000; Heino, 9.X.2007, soil sample agricultural grassland on sandy soil; Opmeer, 24.V.2000, soil sample grassland sandy clay; Woudrichem, 6.V.2002, soil sample grassland on river clay; Elp, 24.X.2006; Berkenwoude, 20.IV.2010; Achttienhoven, 27.IV.2010; Demmerik, 28.IV.2010, all soil sample grassland on peat soil; Lochem, Kienveen, 19.V.2009, soil sample heathy grassland; Noord Beemster, 6.IV.2010; Garretsweer, 29.IV.2014, soil sample grassland on marine clay soil; Numansdorp, 26.IX.2012, soil sample arable land on marine clay soil; records ALT.

396 elegantulus (Berlese, 1904)

Laelaps elegantulus

Gaeolaelaps brevipilus Hirschmann, 1969

Wageningen, experimental fields Plant Protection Service, 24.I.1974, under *Lolium perenne*, in col. NPP0.

397 nolli (Karg, 1962)

Hypoaspis nolli

Terschelling, Badhuisplak, 19.IX.2015, in soil 0-5 cm. under *Nanocyperion* vegetation, in col. HS. Bennekom, Bovenbuurt, 20.XI.1984, soil sample light fertilized grassland on sandy soil; Arnhemse heide, 24.VI.1988, agricultural grassland soil sample; records ALT. Emmer-Compasuum, 15.I.1976, under beet; Akmarijp, 11.X.1966, fen meadow (*Cirsio dissecti-Molinietum*) under *Caltha palustris*; Ouddorp, Westduinen, 16.V.1966, under *Festuca* sp., *Carex* sp. and *Hydrocotyle vulgaris*, in col. NPP0.

398 praesternalis (Willmann, 1949)

Hypoaspis praesternalis

Arnhem, Arnhemse heide, 5.XII.1988, in soil under *Poo-Lolietum* vegetation 0-5 cm., in col. HS. Hoge Veluwe, Heiweg, 20.XI.1984 and 20.V.1985, Deelerwoud, 14.I.1988, unfertilized grassland, Bennekom, Bovenbuurt, 20.XI.1984 and 20.V.1985, light fertilized grassland; Arnhemse heide, 24.VI.1988, 5.XII.1988, soil sample grasslands on sandy soil; Bennekom, Bovenbuurt, 23.V.2000, soil sample grassland sandy soil; Laren (NH), Wasmeer, 22.VI.2000, soil sample grassland sewage farm; Enschede, 28.VI.2000; Boxtel, 8.VI.2000, soil sample grassland sandy soil; Budel, 15.X.2001, soil sample heathland on sandy soil; Cothen, 6.VI.2002; Elst (Gld), 23.V.2002; Druten, 3.VI.2002, soil sample grassland on river clay; Waarder, 9.IV.2003; Reeuwijk, 8.IV.2003; Polsbroek, 4.IV.2003; Goudriaan, 18.IV.2003; Noordeloos, 31.III.2003; Amsterdam, 25.III.2003, soil samples grassland on peat soil; Wier, 18.IV.2003; Zeewolde, 25.IV.2003; Boksum, 14.V.2003, soil sample grassland marine clay soil; Langenholte, 21.IV.2004; Papenvoort, 28.VI.2004; Nispen, Hopmeerweg, 17.VI.2004, soil samples semi-natural grassland sandy soil; records ALT. Frequent species in grassland soils.

399 similisetae Karg, 1965

Hypoaspis similisetae

Hoge Veluwe, Aalderinksveld, 3.XI.2015, soil 0-5 cm., in col. HS.

Gymnolaelaps Berlese, 1916

400 missouriensis (Ewing, 1909)

Hyletastes missouriensis

Laelaspis austriacus Sellnick, 1935

Hypoaspis austriacus (Sellnick, 1935)

Soerendonk, Cranendonk, 15.V.1991, abandoned agricultural land soil sample; records ALT Ouddorp, Westduinen, 16.VI.1966, under moss, *Festuca* sp. and *Hieracium* sp., in col. NPP0.

401 myrmecophila (Berlese, 1892)

Laelaps myrmecophila

Exaeten, col. Oudemans in col. Naturalis (Buitendijk 1945).

Haemogamasus Berlese, 1889

Groschafiella Privora & Samsinák, 1957

402 arvicolarum Berlese, 1920

Haemogamasus horridus var. *arvicolarum*

Texel, VIII.1967, on *Apodemus sylvaticus* (Linnaeus, 1758) (Rodentia, Muridae), fur, in col. Cremers.

403 hirsutus Berlese, 1889

Arnhem, Burgst bij Breda, Maastricht, Sittard, Wommels, col. Oudemans in col. Naturalis (Buitendijk 1945); De Bilt, 17.VI.1966, on *Sorex araneus* Linnaeus, 1758 (Soricomrpha, Soricidae), fur; Betuwe, 26.VIII.1980, on *Talpa europaea* Linnaeus, 1758 (Eulipotyphla, Talpidae), fur; Krimpen aan de IJssel, 2.VIII.2016, on *Martes martes* (Linnaeus, 1758) (Carnivora, Mustelidae), fur; in col. Cremers

404 horridus Michael, 1892

Burgst bij Breda, Sittard, Hoensbroek, col. Oudemans in col. Naturalis (Buitendijk 1945).

405 nidi Michael, 1892

Haemogamasus michaeli Oudemans, 1903

Arnhem, Aalbeek, Sittard, col. Oudemans in col. Naturalis (Buitendijk 1945); De Bilt, I.III.1965, on *Talpa europaea* Linnaeus, 1758 (Eulipotyphla, Talpidae), fur, col. Naturalis; Utrecht, 6.III.1964, on *Talpa europaea* Linnaeus, 1758 (Eulipotyphla, Talpidae), fur; Lelystad, XII.1977; Hoog Soeren, in forest, 4.IX.2001, both on *Apodemus sylvaticus* (Linnaeus, 1758) (Rodentia, Muridae), fur; Hoog Soeren, in forest, 7.IX.2001, on *Clethrionomys glareolus* (Schreber, 1780) (Rodentia, Cricetidae), fur; Rijswijk (Gld.), 23.IV.2003, on *Rattus norvegicus* (Berkenhout, 1769) (Rodentia, Muridae), fur; Zeist, 24.III.2017, on *Ondatra zibethicus* (Linnaeus, 1766) (Rodentia, Muridae), fur, in col. Cremers.

406 pontiger (Berlese, 1904)

Eulaelaps pontiger

Laelaps pontiger

Haemogamasus oudemansi Hirst, 1914

Wageningen, 28.VI.1988, in dog food; Amsterdam, XII.2007, on *Cavia porcellus* (Linnaeus, 1758) (Rodentia, Caviidae), fur, in col. Cremers. Hoogeveen, 20.XI.1978, in house; Rotterdam, IX.1965, in milk powder; Amsterdam, 14.XI.1953, in house; Hoorn, 6.XII.1951, in chard seed, in col. Nppo.

Hyperlaelaps Zachvatkin, 1948

407 amphibia Zachvatkin, 1948

Utrecht, 5.VI.1964, on *Arvicola terrestris* (Linnaeus, 1758) (Rodentia, Cricetidae), fur; in col. Cremers.

408 microti (Ewing, 1933)

Tetragnonyssus microti

Laelaps pachypus C.L. Koch, 1839

Laelaps kochi Oudemans, 1936

Netherlands, on *Arvicola amphibius* (Linnaeus, 1758), *Microtus arvalis* (Pallas, 1778) (Rodentia Cricetidae) and *Mustela nivalis* Linnaeus, 1766 (Carnivora, Mustelidae). Oudemans (1927) found the species on *M. arvalis*. Hoog Soeren, in forest, 5.IX.2001, on *Clethrionomys glareolus* (Schreber, 1780) (Rodentia, Cricetidae), fur, col. Naturalis, in col. Cremers. Meerssen, 18.VI.1953, on *Arvicola terrestris* (Linnaeus, 1758) (Rodentia, Cricetidae), in col. Nppo.

Hypoaspis Canestrini, 1885

Euryaspis Bernard, 1971

Holostapsis Kirchner, 1864

Hypoaspisella Bernard, 1971

Hypobasta Karg, 1979

Lelaspis Berlese, 1903

Olalaelaps Berlese, 1904

409 angusta Karg, 1962

Drempt, 7.III.2002; Vredepeel, 7.III.2002, soil sample arable land on sandy soil; Nagele, 28.III.2002; Middenmeer, 29.V.2002; Wieringerwerf, 27.III.2002, soil sample arable land marine clay soil; Veessen, 28.V.2002, soil sample grassland on river clay; Nieuwegein, II.III.2014, soil sample orchard riverine clay soil; records ALT.

410 astronomica C.L. Koch, 1839

Iphis astronomica Berlese, 1889

Arnhem, col. Oudemans in col. Naturalis (Buitendijk 1945).

411 krameri (G. & R. Canestrini, 1881)

Gamasus krameri

Laelaps krameri

Utrecht, Scheveningen, col. Oudemans in col. Naturalis (Buitendijk 1945); Lisse, 15.III.1976, on *Oryctus nasicornis* (Linnaeus, 1758) (Coleoptera, Scarabaeidae), in col. Nppo.

Ichoronyssus Kolenati, 1858

412 biarcuatus Kolenati, 1858

Gulpen 14.vi.1941 on *Eptesicus serotinus* (Schreber, 1774) (Chiroptera, Vespertilionidae) in Van Eyndhoven (1947).

Laelaps C.L. Koch, 1836

Laelaps Canestrini, 1884

Leclaps Kolenati, 1858

Leelaps Kolenati, 1856

Loelaps Ménézin, 1880

Mastigolaelaps Tenorio & Radovsky, 1973

Microtilaelaps Zakhvatkin, 1948

Myolaelaps Zakhvatkin, 1948

Saelaps Kirchner, 1864

Schistolaelaps Fonseca, 1960

Schizolaelaps Fonseca, 1959

Typhlomylaelaps Petrova & Taskaeva, 1964

413 agilis C.L. Koch, 1836

Laelaps festinus C.L.Koch, 1838

Laelaps hilaroides Oudemans, 1928

Hoog Soeren in forest, 20.ix.2001, on *Apodemus sylvaticus* (Linnaeus, 1758) (Rodentia, Muridae), fur; Netherlands, 2001, on *Crocidura russula* (Hermann, 1780) (Eulipotyphla, Soricidae) skin, col. Naturalis; Vlieland 19.ix.1967, Terschelling 6.ii.1970, Lelystad xii.1977, Hoog Soeren in forest, 4.ix.2001, on *Apodemus sylvaticus* (Linnaeus, 1758) (Rodentia, Muridae) fur; Duin en Kruidberg 18.ix.2001, on *Clethrionomys glareolus* (Schreber, 1780) (Rodentia, Cricetidae) fur; Hoog Soeren in heath 6.ix.2001, on *Sorex araneus* Linnaeus, 1758 (Soricompha, Soricidae) fur; in col. Cremers.

414 hilaris C.L. Koch, 1836

Gramsbergen, Arnhem, Sneek, col. Oudemans in col. Naturalis (Buitendijk 1945); Beesd, 22.xii.1977, on *Mustela nivalis* Linnaeus, 1766 (Carnivora, Mustelidae), fur; Wageningen, 1978, on *Microtus arvalis* (Pallas, 1778) (Rodentia, Cricetidae), fur, col. Naturalis; Linschoten, 14.vi.1964; Wageningen, 8.iv.1987, on *Microtus arvalis* (Pallas, 1778) (Rodentia, Cricetidae), fur; Wageningen, 8.iv.1987; Espel, 15.vi.2017, on *Mustela nivalis* Linnaeus, 1766 (Carnivora, Mustelidae), fur, in col. Cremers; and next to these species in literature on *Talpa*

europaea Linnaeus, 1758 (Eulipotyphla, Talpidae). Oudemans (1927) found this species on *M. arvalis*, *T. europaea* and *M. nivalis*.

415 muris (Ljungh, 1799)

Acarus muris

Laelaps microti Oudemans, 1916

Laelaps arvicola George, 1889

Netherlands, on *Arvicola amphibius* (Linnaeus, 1758), *Microtus arvalis* (Pallas, 1778) and *Apodemus sylvaticus* (Linnaeus, 1758) (Rodentia, Cricetidae), Oudemans (1927). Wilp, 25.vi.1953, on *Arvicola terrestris* (Linnaeus, 1758) (Rodentia, Cricetidae), fur, in col. Cremers; Hoog Soeren, forest *Quercus robur*, litterbag with *Deschampsia flexuosa*, 8.iii.1991; Hoog Soeren, forest *Quercus robur*, litterbag with faeces of red deer (*Cervus elaphus* Linnaeus, 1758), 8.iii.1991; records ALT. Valkenswaard, 8.i.1948, *Ondatra zibethicus* (Linnaeus, 1766) (Rodentia, Cricetidae), in col. NPPO.

Laelaspis Berlese, 1903

416 heselhausi Oudemans, 1912

Sittard, col. Oudemans in col. Naturalis (Buitendijk 1945).

Ololaelaps Berlese, 1904

Pristolaelaps Womersley, 1956

417 placentulus (Berlese, 1887)

Laelaps placentulus

Pseudoparasitus placentulus (Berlese, 1887)

Epe, Wisselse veen, northside, in *Sphagnum* at edge of brook; Winterswijk, Willink weuste, 31.vii.2017, soil sample grassland, in col. HS. Agelo, 11.v.2000, soil sample grassland sandy soil; Amsterdam, 25.iii.2003, soil sample grassland on peat soil; Valkenswaard, Grote heide, Veeven, 9.vi.2004; Bemelen, Bemelerberg, 20.xi.2007, 2.vi.2010; 't Rooth, Het Hoefijzer, 2.vi.2010; Cadier en Keer, Schiepersberg, 2.vi.2010, all soil sample calcareous grassland; Sallandse Heuvelrug, 9.ix.2011, soil sample heathland; De Glind Zandbrink 11.v.2009; Ruurlo Stelkampsveld 19.v.2009; Denekamp Stroothuizen, 20.v.2009, soil sample heathy grassland; Oud Valkenburg, Gen Hoes, 19.v.2010, soil sample forested hills on loess; Leusden, Leusderheide, 4.xi.2010, soil sample heathland soil; records ALT.

- 418 **sellnicki Bregetova & Koroleva, 1964**
Pseudoparasitus sellnicki (Bregetova & Koroleva, 1964)
 Veenedaal, Blauwe Hel, 3.vii.1992, acidified quagmire, in col. HS. Wilnis, Demmerikse polder, I.III.2001, soil sample arable land on sandy soil; Wageningen, Ossekampen, 3.v.2001, soil sample grassland on river clay soil; records ALT.
- 419 **veneta (Berlese, 1904)**
Hypoaspis veneta
Pseudoparasitus venetus
 Lienden, Schuilenburg, 12.I.1971, on stem apple 'Grieve'; Ouddorp, Westduinen, 16.vi.1960 under *Festuca* sp., *Carex* sp. and *Hydrocotyle vulgaris*, in col. NPP0.
- Ondatralelaps Evans & Till, 1965**
- 420 **multispinosa (Banks, 1909)**
Laelaps multispinosa
 Netherlands, II.1999, on *Ondatra zibethcus* (Linnaeus, 1766) (Rodentia, Cricetidae), fur, col. Naturalis, in col. Cremers.
- Pneumolaelaps Berlese, 1920**
- 421 **bombicolens (Canestrini, 1884)**
Iphis bombicolens
 De Lier, 26.vii.1990, on *Bombus* sp. (Hymenoptera, Apidae), in greenhouse, in col. NPP0.
- 422 **heyi (Karg, 1962)**
Hypoaspis heyi
 Kootwijk, Kootwijkkerzand, 30.III.2009, soil sample inland drift sand; records ALT.
- 423 **karawaiewi (Berlese, 1904)**
Laelaps karawaiewi
 Ouddorp, Westduinen, 16.vi.1966, south slope under *Rumex acetosella*, *Galium* sp., *Festuca* sp. and *Ononis repens*, in col. NPP0.
- 424 **lubrica (Voigts & Oudemans, 1904)**
Hypoaspis lubrica
Hypoaspis smithii Hughes, 1948
 Leiden, 18.vi.2007, cultures of *Chrysanthemum* and *Frankliniella occidentalis*; Emmen, 17.viii.1957, litter; Sevenum, ix.1966, litter henhouse, in col. NPP0.
- 425 **procera (Karg, 1965)**
Hypoaspis procera
 Westduinen, 16.vi.1966, south slope under *Hieracium pilosella*, in col. NPP0.
- Pseudoparasitus Oudemans, 1902**
Austrogamasellus Domrow, 1957
Austrogamasus Womersley, 1943
Hoplolaelaps Berlese, 1910
Laeliphis Hull, 1925
Oloopticus Karg, 1978
- 426 **centralis Berlese, 1921**
 't Rooth, Het Hoefijzer, 2.vi.2010; Bemelen, Bemelerberg, 29.x.2012, all soil sample calcareous grassland; records ALT.
- 427 **dentatus (Halbert, 1920)**
Laelaps dentatus
Laelapsoides dentatus (Halbert, 1920)
Gymnolaelaps anomalis Willmann, 1951
 Ossensisse, lower part seawall in washed up litter, 30.iv.2016, in col. HS. Wageningen, experimental fields Plant Protection Service, 19.x.1971, under rye, 10.x.1973, under *Lolium perenne*, in col. NPP0.
- 428 **germanicus (Karg, 1965)**
Ololaelaps germanicus
 Hoge Veluwe, Heiweg, 20.xi.1984, soil sample unfertilized grassland; Loenen, 18.x.2011, soil sample grassland on sandy soil; records ALT.
 Lienden, Schuilenburg, xi.1971/III.1972, litterbag wheat straw, in col. NPP0.
- 429 **missouriensis (Ewing, 1909)**
Hyletastes missouriensis
Pseudoparasitus austriaca Sellnick, 1935
 Deelerwoud, Hoge Veluwe, Heiweg, Imbos, unfertilized grasslands, Bennekom Bovenbuurt, light fertilized grassland, all on 20.xi.1984, soil sample grasslands on sandy soils, records ALT.
- Stratiolaelaps Berlese, 1916**
Davisiella Zumpt & Patterson, 1951
- 430 **miles (Berlese, 1892)**
Laelaps miles
 Aperlo, hedgerow, 25.ix.1997, soil 0-5 cm., in col. HS. Bennekom, Bovenbuurt, 20.xi.1984, soil sample light fertilized grassland on sandy soil; Nunspeet, 25.ix.1997, old hedgerow, soil sample; Joppe, 26.iv.1999; Hengelo (Gld), 19.iv.1999;

Soerendonk, Cranendonk, 19.IV.2006; Broekhuizen, 31.III.2014; Wolfheze, Reyerskamp, 15.IV.2014; Ede, Mosselse veld, 14.IV.2014, all soil sample grasslands on sandy soils; Den Haag, Zuiderpark 7.IV.2006; Groningen, Stadspark 11.IV.2006; Eindhoven, Genneperparken, 14.IV.2006; Rotterdam, Polder de Esch, 24.V.2006; Schiedam Noord, Oost Abtspolder, 24.V.2006, all soil sample city park; † Goy, 19.V.2011, soil sample fruit cultivation; Vogelenzang, 25.V.2011, soil sample dune *Carex arenaria* vegetation; Oosterend (NH), 22.IV.2013, soil sample grassland on marine clay soil; Nieuwegein, 11.III.2014, soil sample orchard riverine clay soil; records ALT.

431 scimitus (Womersley, 1956)

Cosmolaelaps scimitus
 's-Gravenzande, 4.IX.1996, in greenhouse; Heemstede, 23.VIII.1994, *Miltonia*; Langeraar, 15.IV.1994, in bran; De Kwakel, 2.I.1992, *Scolopendrium*; Berkel, 27.IV.1992, *Dracaena marginata*; Aalsmeer, 26.I.1990, *Platyserum*; De Kwakel, 31.VII.1975, moist peat dust, in col. NPPO.

Family MACRONYSSIDAE

Macronyssus Kolenati, 1858

Lepronysus Kolenati, 1858
Allonyssus Buitendijk, 1945
Hirstesia Fonseca, 1948

432 flavus (Kolenati, 1857) (fig. 23)

Dermanissus flavus
Liponyssus britannicus Radford, 1941
 St. Maartensvlotbrug, 16.III.2017, on *Nyctalus noctula* (Schreber, 1774) (Chiroptera, Vespertilionidae), in col. Cremers.

433 kolenatii (Oudemans, 1902)

Liponyssus kolenatii
Liponyssus pipistrelli Oudemans, 1906
Liponyssus cyclaspis Oudemans, 1906
Hirstesia britteni Radford, 1953
 Schagen, 6.IV.2017, on *Pipistellus nathusii* (Keyserling & Blasius, 1839) (Chiroptera, Vespertilionidae), in col. Cremers.

Ophionyssus Megnin, 1883

Serpenticola Ewing, 1923
Sauronyssus Sambon, 1928
Neoliponyssus Ewing, 1929
Oudemansiella Fonseca, 1948

434 lacertinus (Berlese, 1892)*

Leiognathus lacertinus
 Netherlands, 21.X.1960, on *Lacerta viridis* Laurenti, 1768 (Squamata, Lacertidae) skin, col. Naturalis, col. Cremers; Netherlands, 1977, on *Lacerta sicula* (Rafinesque, 1810) (Squamata, Lacertidae) skin, in col. Cremers.

435 natricis (Gervais, 1844)*

Dermanyssus natricis
Ichoronyssus serpenticum Hirst, 1915
 Rotterdam, col. Oudemans in col. Naturalis (Buitendijk 1945); Amsterdam, Artis Zoo, 15.XII.1994, on *Boa constrictor* Linnaeus, 1758 (Squamata, Boidae), skin; Netherlands, 3.I.1996, on *Morelia viridis* (Schlegel, 1872) (Squamata, Boidae), skin; Utrecht, Veterinary Faculty, 10.I.1973, on skin and 1.I.1981, in cage of *Thamnophis sirtalis* (Linnaeus, 1758) (Squamata, Colubridae), col. Naturalis; Amsterdam (Artis Zoo), 1976, on *Eryx jaculus* (Linnaeus, 1758) (Squamata, Boidae), skin; Netherlands, 1976, on *Lacerta viridis* Linnaeus, 1758 (Squamata, Lacertidae), skin, in col. Cremers; 30.I.1981, in cage of *Thamnophis sirtalis* (Linnaeus, 1758) (Squamata, Colubridae); 3.I.1996, on *Morelia viridis* (Schlegel, 1872) (Squamata, Boidae) skin, col. Naturalis, in col. Cremers. Wageningen, 3.III.1960, on *Lacerta viridis*; Utrecht, 9.XI.1961, on *Spilotes pullatus* (Linnaeus, 1758) (Squamata, Colubridae), in col. NPPO.

436 saurarum (Oudemans, 1901)*

Liponyssus saurarum
Oudemansiella saurarum
Macronyssus saurarum
 Rotterdam, from *Lacerta agilis* Linnaeus 1758 or *L. viridis* Laurenti, 1768 (Squamata, Lacertidae) in terrarium Oudemans (1902). Hoofddorp, 5.II.1990 on *Lacerta viridis*, in col. NPPO.

Ornithonyssus Sambon, 1928

Cryptonyssus Radovsky, 1966

- Fonsecaonyssus* Radford, 1950
Leiofnathus Canestrini, 1884
Lepronyssoides Fonseca, 1943
Macronyssoides Radovsky, 1966
Megistonyssus Radovsky, 1966
Parasteatonyssus Radovsky, 1966
- 437 **bacoti** (Hirst, 1913)
Leiofnathus bacoti
Bdellonyssus bacoti
Hirstionysus musculi Domrow, 1963
 Amsterdam, Vrije Universiteit, vi.1980 on skin nude *Mus musculus* Linnaeus, 1758 (Rodentia, Muridae); Netherlands, ii.vii.2001, from farm with many mice, found on *Mesocricetus auratus* Waterhouse, 1839 (Rodentia, Cricetidae), in fur, col. Naturalis; Netherlands, 4.xii.1997, on *Meriones shawi* (Duvernoy, 1842) (Rodentia, Muridae), fur; Almelo, vii.2006, on *Mus musculus* Linnaeus, 1758 (Rodentia, Muridae), fur; Utrecht 15.vi.2011, on *Mesocricetus auratus* Waterhouse, 1839 (Rodentia, Cricetidae), in fur; Apeldoorn (Apenheul Zoo), on *Ctenodactylus gundi* (Rothmann, 1776) (Rodentia, Ctenodactylidae), fur, in col. Creemers. Nieuwe Tonge, 31.v.2005, on bed in house originally bred on gerbils; Drachten, 5.iii.2003, nest of *Cricetus cricetus* Linnaeus, 1758 (Rodentia, Cricetidae), in col. Nppo.
- 438 **pipistrelli** (Oudemans, 1903)
Liponyssus pipistrelli
Macronysus pipistrelli
Cryptonyssus pavlovskii Radovsky, 1969
 Bodegraven, col. Oudemans in col. Naturalis (Buitendijk 1945); Den Helder, ii.viii.2017, on *Pipistrellus nathusii* (Keyserling & Blasius, 1839) (Chiroptera, Vespertilionidae), fur, in col. Creemers.
- 439 **sylviarum** (Canestrini & Fanzago, 1877)
Dermanyssus sylviarum
Fonsecaonyssus sylviarum
 Rijswijk (Gld), 14.i.1998, on *Gallus gallus domesticus* (Linnaeus, 1758) (Galliformes, Phasianidae), feathers; Huizen, 25.viii.1965, on *Chloris chloris* (Linnaeus, 1758) (Passeriformes, Fringillidae), skin/feathers; Netherlands, 19.i.1977, on *Asio otus* (Linnaeus, 1758) (Strigiformes, Strigidae) feathers; Utrecht, viii.1980, on *Turdus merula* Linnaeus, 1758 (Passeriformes, Turdidae) skin/feathers; Utrecht 4.iv.1982, in nest *Serinus canarius* (Linnaeus, 1758) (Passeriformes, Fringillidae); vii.1962, on *Acrocephalus arundinaceus* (Linnaeus, 1758) (Passeriformes, Acrocephalidae), feathers, col. Naturalis, in col. Creemers; Utrecht, 19.vii.2000, on *Corvus corone* Linnaeus, 1758 (Passeriformes, Corvidae), feathers; Alkmaar, vii.2011, Bergen (N.H.), 2.ix.2011, on *Gallus gallus domesticus* (Linnaeus, 1758) (Galliformes, Phasianidae); Almere, 31.vii.2013, on *Turdus merula* Linnaeus, 1758 (Passeriformes, Turdidae), feathers, in col. Creemers. Wageningen (ac 174.8-443.0), 22.v.2017, *Sedum hybridum* (green roof coverage); Odijk, 9.ii.2009 canary birds; Randwijk, 9.vi.2005 slept from pasture; Lemelerveld, 20.vii.1993; Renkum, ii.vi.1991, in house; Milheze, 20.v.1963, on *Gallus gallus domesticus*, cock, import U.S.A., in col. Nppo.
- Steatonyssus Kolenati, 1858**
Steatonyssella Till & Evans, 1964
- 440 **musculi** (Schränk, 1803)
Acarus musculi
 Sneek, Arnhem, Lunteren on *Myotis dasycneme* (Boie, 1825), *M. nattereri* (Kuhl, 1817) and *Pipistrellus pipistrellus* (Schreber, 1774) (Chiroptera, Vespertilionidae) (Oudemans 1903).
- 441 **periblepharus Kolenati, 1858**
 Heythuysen, 17.vii.2014, De Wijk (Dr.) 17.v.2016, on *Pipistrellus pipistrellus* (Schreber, 1774) (Chiroptera, Vespertilionidae), fur; Wieringermeer 2.ix.2016, Schagen 6.iv.2017, Schagerbrug 8.iv.2017, St. Maartensvlotbrug, 23.v.2017 on *Pipistrellus nathusii* (Keyserling & Blasius, 1839) (Chiroptera, Vespertilionidae); St. Maartensvlotbrug, 23.v.2017, on *Nyctalus noctula* (Schreber, 1774), (Chiroptera, Vespertilionidae); Hoog-Keppel, 5.viii.2017 on *Plecotus auritus* (Linnaeus, 1758) (Chiroptera, Vespertilionidae), in col. Creemers.
- 442 **occidentalis** (Ewing, 1933)
Ceratonyssus occidentalis
 Helden-Panningen, 10.vii.2013; Den Helder, 27.vi.2017; Hoenderloo, 3.vii.2017, on *Eptesicus serotinus* (Schreber, 1774) (Chiroptera, Vespertilionidae), fur, in col. Creemers.

Family RHINONYSSIDAE

Ptilonyssus Berlese & Trouessart, 1889

Rhinonyssoides Hirst, 1922

443 nudus Berlese & Trouessart, 1889

Utrecht, col. Oudemans in col. Naturalis (Buitendijk 1945); Netherlands, on *Hirundo rustica* Linnaeus, 1758, *Passer domesticus* (Linnaeus, 1758), *Sturnus vulgaris* Linnaeus, 1758, *Serinus canarius* (Linnaeus, 1758), *Carduelis spinus* (Linnaeus, 1759) (Passeriformes) in Oudemans (1896, 1903).

444 pari Fain & Hyland, 1963

Netherlands, 16.III.1990, on *Parus major* Linnaeus, 1758 (Passeriformes, Paridae) skin, col. Naturalis.

Rhinonyssus Trouessart, 1894

445 levensei (Trägårdh, 1904)

Vlieland, 6.III.1956; Groet (Hondsbosse zeevering), 6.I.1963; Den Helder, 29.I.1963 on *Somateria mollissima* (Linnaeus, 1758) (Anseriformes, Anatidae); Amsterdam, 24.XII.1955 and 23.XII.1956, on *Anser anser* (Linnaeus, 1758) (Anseriformes, Anatidae) in Van Eyndhoven (1964).

446 rhinolethrum (Trouessart, 1895)

Sternostomum rhinolethrum

Netherlands, 1958, in nasal cavity of *Melanitta nigra* (Linnaeus, 1758) (Anseriformes, Anatidae), col. Naturalis, in col. Cremers. From *Anas acuta* Linnaeus, 1758 (Anseriformes, Anatidae) in zoo in the Netherlands (Jansen 1959, Swierstra et al. 1959).

Sternostoma Berlese & Trouessart, 1889

447 tracheacolum Lawrence, 1948

Netherlands, 17.XI.1980 and VIII.1987 in trachea of *Serinus canarius* (Linnaeus, 1758) (Passeriformes, Fringillidae) in Jansen & Van den Broek (1966). Gelderland III.1992, in trachea of *Erythrura gouldiae* (Gould, 1844) (Passeriformes, Estrildidae), col. Naturalis, in col. Cremers; Netherlands, 9.XII.1998, Netherlands, 2.II.2004, in trachea of *Serinus canarius* (Linnaeus, 1758); Neerbeek 4.IX.2007, Utrecht 1.IV.2010, in trachea of *Erythrura gouldiae* (Gould, 1844), in col. Cremers.

448 strigitus Butenko, 1976

Tiel, 31.V.2016, on feathers of *Asio otus* (Linnaeus, 1758) (Strigeiformes, Strigidae), in col. Cremers.

Family SPINTURNICIDAE

Eyndhovenia Rudnick, 1960

449 euryalis (Canestrini, 1884)

Pteroptus euryalis

Netherlands, on *Rhinolophus ferrumequinum* (Schreber, 1774) (Chiroptera, Rhinolophidae) in Van Eyndhoven (1940, 1941a, 1950).

Paraperiglischrus Rudnick, 1960

450 rhinolophinus (C.L. Koch, 1844)

Pteroptus rhinolophinus

Netherlands, on *Rhinolophus ferrumequinum* (Schreber, 1774) (Chiroptera, Rhinolophidae) in Van Eyndhoven (1940).

Spinturnix Von Heyden, 1826

Diplostaspis Kolenati, 1857

Pteroptus Dufour, 1832

Spinturnix Van der Hoeven, 1849

451 acuminatus (C.L. Koch, 1836) (fig. 24)

Pteroptus acuminatus

Spinturnix noctulae Oudemans, 1901

Netherlands, on *Nyctalus noctula* (Schreber, 1774) (Chiroptera, Vespertilionidae) in Uchikawa et al. (1994). Sint Maartenszee, on *N. noctula*, 5.X.2016 and 16.IX.2017 DvdP. St. Maartensvlotbrug, 14.XI.2015, Schoorl, 22.IX.2016 on *N. noctula*, in col. Cremers.

452 andegavinus Deunff, 1977

Ommen, 7.VI.2014, female on *Myotis nattereri*

(Kuhl, 1817) (Chiroptera, Vespertilionidae); Olst, 23.V.2014, females on *Myotis daubentonii* (Kuhl, 1817) (Chiroptera, Vespertilionidae); 's Hertogenbosch, 27.VII.2017, females on *Myotis dasycneme*

(Boie, 1825) (Chiroptera, Vespertilionidae); Vuren, 4.IX.2014 and 18.IX.2014, on *M. daubentoni*;

Arnhem, 18.IX.2014, females on *M. daubentoni*;

Zeeuws Vlaanderen, 3.VII.2011, females on *M. daubentoni*; Dijkgatbos, Wieringerwerf,

22.VIII.2014, females on *Pipistrellus nathusii*

- (Keyserling & Blasius, 1839) (Chiroptera, Vespertilionidae); Venhof, Herkenbosch, 18.VII.2012, females on *M. daubentonii*; Waddinxveen, 17.VI.2015, on *M. dasynceme*, AK. Maastricht, 2.IX.2011; Herkenbosch, National Park Meinweg, 19.VII.2012; Aerdenhout, Elswout manor, 12.VI.2013; Sellingen, Boerenbos, 13.VII.2013, 22.VIII.2015, 9.VII.2016; Sellingen, De Breetuinen, 19.VII.2015; Sellingen, Sellingerbossen, 27.VII.2016; Roden Mensinge manor, 29.VII.2013; Midwolde, Midwolderbossen, 9.VIII.2013; Ter Apel, Ter Apelerbossen, 24.VIII.2013; Ter Apel, Roelagerbosch, 17.VII.2015; Ter Apel, bos Middelbroek, 25 and 26.VII.2016; Jipsingboertange, Jipsingboertangerbos, 27.VII.2014; Berg en Terblijt, Geulhemmerbos, 4.IX.2014; Hooghalen, radiotelescope, 27.VIII.2016, 5 and 9.IX.2016; Gaasterland, Sleat, 16.VI.2016; Polder de Weeren, 18.VI.2016; Broek (Fr), 21.VI.2016; Gieten, 1.VII.2016, DvdP.
- 453 dasyncemi Kolenati, 1856**
Utrecht, Maastricht, col. Oudemans in col. Naturalis (Buitendijk 1945); Netherlands, on *Myotis dasynceme* (Boie, 1825) (Chiroptera, Vespertilionidae), in Uchikawa et al. (1994). Maastricht, 20.I.1910, on *Myotis nattereri* (Kuhl, 1817); Utrecht, no date, on *Plecotus auritus* (Linnaeus, 1758), col. Naturalis (Estrada-Peña & Sanchez 1989); Hoogkarspel, Lutjebroekerweel, 14.VI.2013; Dijkgatbos, 15.VI.2013; Oostzaan, 18.VI.2013; Santpoort, National Park Kennemerland, Middenduin, 8.VIII.2014; Dokkum, Fûgellân, 2.VI.2017; Buitenpost polder, 5.VI.2017; Koudum, Grote Gerslootpolder, 17.VI.2017; Lemmer, 18.VI.2017; Broek (Fr), 21.VI.2017 all on *M. dasynceme*, DvdP. Camping de Driesprong, Langelille (Friesland) 16.VI.2017 on *M. dasynceme*, in col. Cremers.
- 454 kolenatii Oudemans, 1910**
Netherlands, on *Eptesicus serotinus* (Schreber, 1774) (Chiroptera, Vespertilionidae) in Van Eyndhoven (1947). Bellingwolde, De Lethe, 23.VIII.2015, on *E. serotinus*, DvdP.
- 455 myoti (Kolenati, 1857)**
Pteroptus myoti
Spinturnix murinus Oudemans, 1910
Enschede, 16.IX.1974, on *Myotis dasynceme* (Boie, 1825) (Chiroptera, Vespertilionidae), fur, col. Cremers; see also Oudemans (1896, 1903), Schmitz (1909), Uchikawa et al. (1994). Herkenbosch, National Park Meinweg, 10.VII.2012; Berg en Terblijt, Geulhemmerbos, 4.IX.2014; Sellingen, Boerenbos, 9.VII.2016; National Park Hoge Veluwe, Hertenbos, 19.VII.2016 and centre 20.VII.2016; Schaarsbergen, 15.X.2016 on *M. nattereri* (Kuhl, 1817); Ter Apel, Ter Apelerbossen, 3.VII.2017, DvdP.
- 456 mystacinus (Kolenati, 1858)**
Diplostaspis mystacinus
's Gravenhage, Maastricht, Sneek, col. Oudemans in col. Naturalis (Buitendijk 1945); Netherlands, on *Myotis mystacinus* (Kuhl, 1817) (Chiroptera, Vespertilionidae), in Schmitz (1909). Ter Apel, Ter Apelerbossen, 23 and 24.VIII.2013; Sellingen, De Breetuinen, 18.VII.2015, on *M. mystacinus*, DvdP.
- 457 plecotinus (C.L. Koch, 1839)**
Pteroptus plecotinus
Spinturnix plecoti Oudemans, 1902
Bodegraven, col. Oudemans in col. Naturalis (Buitendijk 1945); Beesterzwaag, 2.VI.1987, on *Plecotus auritus* (Linnaeus, 1758) (Chiroptera, Vespertilionidae), skin, col. Naturalis and in Van Eyndhoven (1941b, 1950); Wolfheze, 23.VII.2014, on *P. auritus*, AK. Herkenbosch, National Park Meinweg, 10.VII.2012; Roden, Mensinge manor, 30.VII.2013; Sellingen, Sellingerbossen, 2.VIII.2013; Sellingen, Boerenbos, 21.VIII.2015; Emmen, Emmerdennen, 14.VIII.2013; Ter Apel, Ter Apelerbossen, 28.VIII.2013; Assen, Asserbos, 5.IX.2013; Jipsingboertange, Jipsingboertange, 27.VII.2014; Berg en Terblijt, Geulhemmerbos, 4.IX.2014; Hooghalen, radiotelescope, 27.VIII.2016, 5, 9, 10 and 11.IX.2016, all on *P. auritus*, DvdP.

Family VARROIDAE

Varroa Oudemans, 1904

Eugarroa Delfinado & Baker, 1974

458 destructor Anderson & Trueman, 2000 (fig. 25)

Varroa jacobsoni Oudemans, 1904 (pars)

Netherlands, 1997 from *Apis mellifera* (Linnaeus, 1758) (Hymenoptera, Apidae) brood (Anderson & Trueman 2000); Rijswijk (Gld), vi.1988 and ix.1999, on *Apis mellifera* colony, col. Naturalis, in col. Cremers (sub. *V. jacobsoni*), see Boot et al. (1995). Enschede, 1984, bee hive; Heelsum, 14.v.1988, litter bee hive, in col. Nppo.

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SAMENVATTING

Naamlijst van de mesostigmaten mijten van Nederland (Acari: Mesostigmata)

De meeste predatoire mijten behoren bij de orde Mesostigmata, maar niet alle mesostigmaten mijten zijn predatoren. Diverse soorten zijn parasitair en andere leven van schimmels. In de huidige naamlijst zijn 458 soorten opgenomen.

H. Siepel
Dept. Animal ecology & physiology
rwwr, Radboud University Nijmegen
Nijmegen, the Netherlands
H.Siepel@science.ru.nl

H.J.W.M. Cremers
veterinary parasitologist, spec. wildlife and exotic animals
Utrecht, the Netherlands
herman.cremers@ziggo.nl

W.J. Dimmers,
Team Animal ecology, Wageningen Environmental Research
Wageningen, the Netherlands
wim.dimmers@wur.nl

A.J.M. Loomans
Section of Entomology
National Reference Centre
National Plant Protection Organization
Netherlands Food and Consumer Product Safety Authority
Wageningen, the Netherlands
a.loomans@nvwa.nl

G. Vierbergen
Section of Entomology
National Reference Centre
National Plant Protection Organization
Netherlands Food and Consumer Product Safety Authority
Wageningen, the Netherlands
g.vierbergen@nvwa.nl