



A preliminary checklist of the Coccinellidae of Bhutan (Insecta: Coleoptera)

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Abstract

An annotated distributional checklist of the Coccinellidae of Bhutan is presented, enumerating 91 species, 17 of which are here recorded for the first time: *Shirozuella tibetina* Wang, Ge & Ren, 2012, *Jauravia limbata* (Motschulsky, 1858), *Scymnus bourdilloni* (Kapur, 1958), *Illeis confusa* Timberlake, 1943, *Calvia albida* Bielawski, 1972, *Harmonia expalliata* Sicard, 1913, *H. octomaculata* (Fabricius, 1781), *H. sedecimnotata* (Fabricius, 1801), *Micraspis allardi* (Mulsant, 1866), *M. discolor* (Fabricius, 1798), *M. univittata* (Hope, 1831), *Oenopia adelgivora* Poorani, 2002, *O. billieti* (Mulsant, 1853), *O. smetanai* Canepari, 1997, *Afissula mysticoides* (Sicard, 1913), *Henosepilachna processa* Li & Cook, 1961 and *H. septima* (Dieke, 1947). One species, *Propylea japonica* (Thunberg, 1781), has to be removed from the list.

Nine species and two subspecies are hitherto only reported from the territory of Bhutan. The Bhutanese coccinellid fauna is still insufficiently known.

Key words: Lady beetles, Asia, Palaearctic Region, Oriental Region, Himalayas, new records

Introduction

The insect fauna of Bhutan is still poorly known. This is even true for a relatively well-studied group as the lady beetles (Coccinellidae Latreille, 1807). The present study aims to compile all published records of the family for the country. In addition, the material (447 specimens) collected by the authors during the years 2014–2017 as part of a collaborative effort of the Bhutanese Biodiversity Centre and Naturalis Biodiversity Center in the Netherlands (Naturalis) is included, except for the tribe Scymnini Mulsant, 1846, the material of which is still awaiting identification. An overview of the collecting sites visited during this survey is presented in Figure 2. Finally, some specimens kept at the collections of Naturalis are reviewed and included here.

Coccinellidae is a speciose family of beetles with a worldwide distribution, currently including about 6000 species classified in 370 genera (Ślipiński 2007). The family is most abundant in tropical and subtropical areas, with fewer representatives in the temperate climate zones. Coccinellids are predominantly predatory as larvae and adults, but several species feed on plant tissues or powdery mildews (Ślipiński & Tomaszewska 2010). The majority of predacious species preferentially feed on Hemiptera. Some groups are well known for feeding on aphids, e.g. Coccinellini Latreille, 1807. Species of Epilachnini Mulsant, 1846 are exclusively phytophagous and are known to develop on members of the Cucurbitaceae and Solanaceae (Ślipiński & Tomaszewska 2010).

The kingdom of Bhutan is situated at the southern slopes of the eastern Himalayas. Elevations reach from 200 meters above sea level in the valley of the Brahmaputra along the southern border to more than 7,000 meters above sea level in the north. The mostly steep mountains are crisscrossed by fast running rivers. Due to this geographic diversity and the resulting variation in climate conditions there is a great variety of ecosystems, which are home to a substantial amount of biodiversity (Fig. 3). Its position at the contact zone of the Palaearctic with the Oriental biogeographical region adds another element of diversity. The natural vegetation includes subtropical broadleaved forests, temperate forests, conifer forests, dry grasslands, and alpine shrublands and meadows. Forest coverage is still extensive occupying about 70% of the country's surface area (National Soil Services Centre 2011). The country is divided into 20 administrative districts, called dzongkhag (Fig. 1).

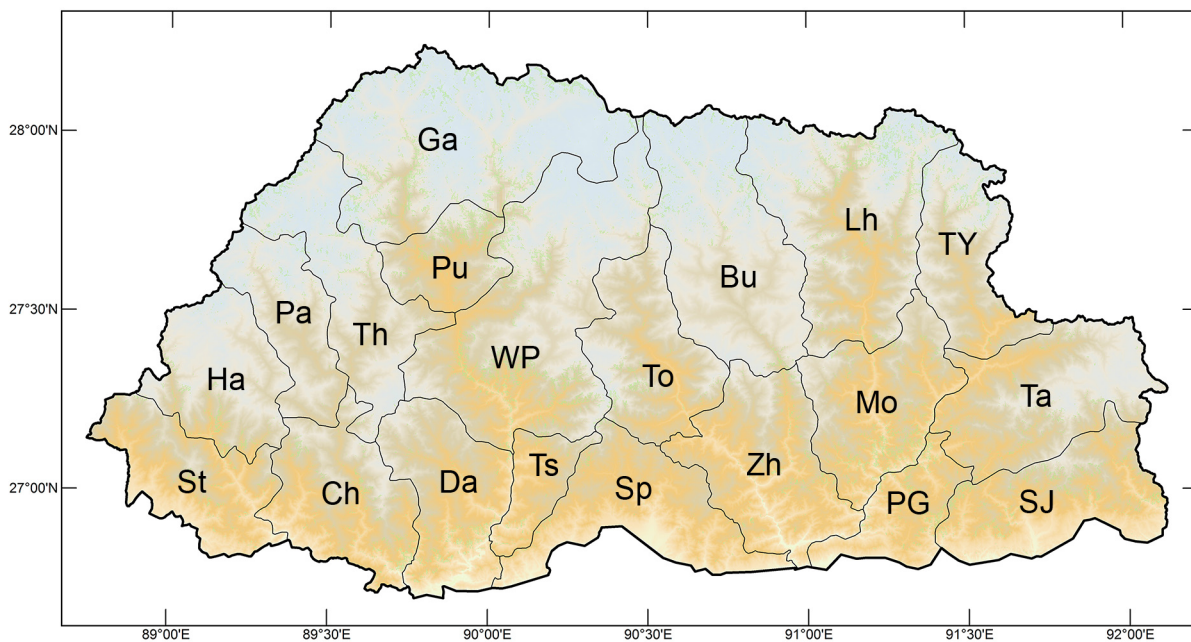


FIGURE 1. The twenty districts or dzongkhag of the kingdom of Bhutan. West: Chhukha (Ch), Haa (Ha), Paro (Pa), Samtse (St), Thimphu (Th). Central: Dagana (Da), Gasa (Ga), Punakha (Pu), Tsirang (Ts), Wangdue Phodrang (WP). South: Bumthang (Bu), Sarpang (Sp), Trongsa (To), Zhemgang (Zh). East: Lhuntse (Lh), Mongar (Mo), Pema Gatshel (PG), Samdrup Jongkhar (SJ), Trashigang (Ta), Trashy Yangtse (TY).

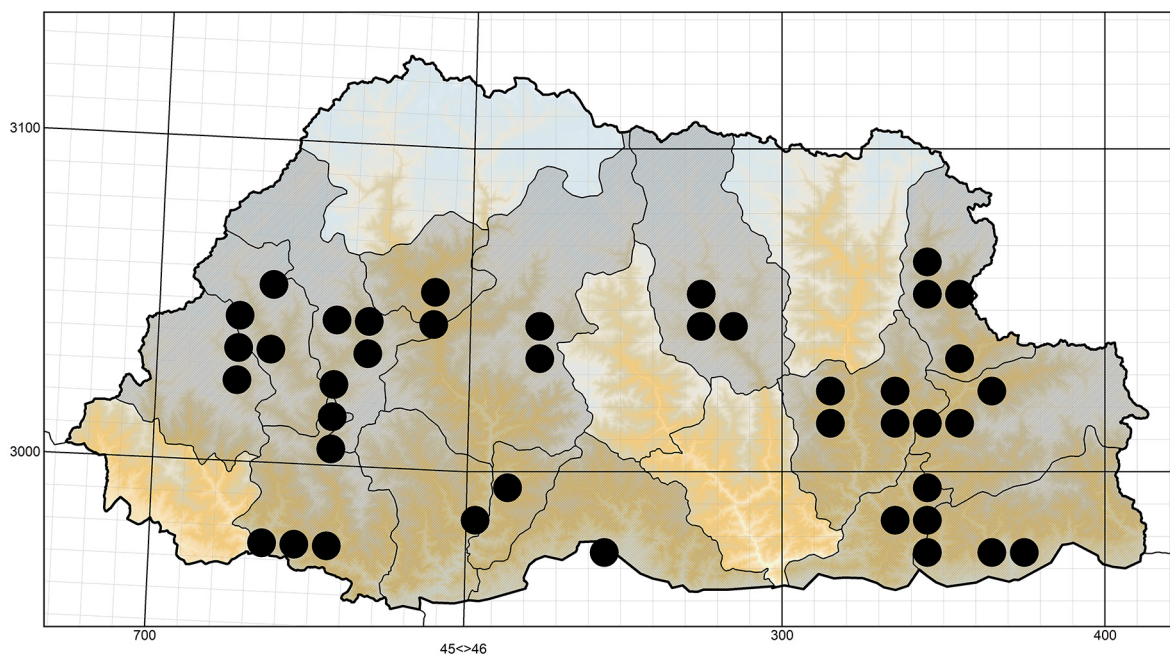


FIGURE 2. Map showing the 41 10×10 km UTM squares and 15 dzongkhag visited during the years 2014–2017.

History of discovery

The earliest published record of Bhutanese Coccinellidae is by George Robert Crotch, who in 1874 in his world revision of Coccinellidae described the species *Epilachna pembedoni* Crotch, 1874 based on material from ‘Bhootan’. It took almost a century before the next publication (Kapur 1973) reporting on a small collection of lady beetles, collected in 1969 by Dr. S.K. Mitra from the Zoological Survey of India, added five more species to the faunal list of the country: *Scymnus posticalis* Sicard, 1913, *Coccinella septempunctata* Linnaeus, 1758, *Menochilus sexmaculatus* (Fabricius, 1781), *Oenopia sauzeti* Mulsant, 1866 and *Propylea luteopustulata* (Mulsant, 1850).



FIGURE 3. Some habitats of Bhutanesse Coccinellidae. (A) Haa: Haa , 3393 m, 8.viii.2016, open coniferous forest of *Picea spinulosa*, *Pinus wallichiana* and *Abies densa*: *Shirozuella tibetina*, *Priscibrumus uropygialis*, *Hippodamia variegata*, *Oenopia adelgivor*, *O. billieti*, *Propylea luteopustulata*; (B) Trashi Yangtse: Bumdeling, 1903 m, 19.viii.2016, sandy river plain, ruderal vegetation: *Cryptogonus nepalensis bhutanensis*, *Harmonia eucharis*, *Oenopia mimica*, *Propylea luteopustulata*; (C) Trashingang: Chhiya, 2015 m, 4.vi.2017, small lake in grazed fields and open coniferous forest: *Alloneda dodecaspilota*, *Harmonia eucharis*, *Epilachna bengalica*; (D) Samdrup Jongkhar: Dewathang, 932 m, 20.viii.2016, ruderal vegetation: *Cryptogonus bimaculatus*, *C. complexus*, *C. orbiculus*, *Harmonia dimidiata*, *Oenopia kirbyi*; (E) Samdrup Jongkhar: Pemathang, 362 m, 28.v.2017, ruderal vegetation in river plain: *Harmonia octomaculata*; (F) Samdrup Jongkhar: Phuentshothang, 334 m, 21.viii.2016, fallow agricultural field: *Coccinella septempunctata*, *C. transversalis*, *Coelophora bissellata*, *Menochilus sexmaculatus*, *Propylea dissecta*, *Henosepilachna septima*.

A very large contribution was made based on material collected during a zoological expedition of the Naturhistorisches Museum Basel, Switzerland, to Bhutan in 1972 (Baroni-Urbani *et al.* 1973). The coccinellids from this expedition were treated by Bielawski (1979) who added 60 species, of which eleven species and one subspecies were described as new to science: *Cryptogonus nepalensis bhutanensis* Bielawski, 1979, *Phymatosternus khalaus* Bielawski, 1979 (now in *Platynaspis* Redtenbacher, 1843), *P. samchus* Bielawski, 1979, *P. wittmeri* Bielawski, 1979, *Calvia monosha* Bielawski, 1979, *Epilachna bhutanensis* Bielawski, 1979, *E. dorotae* Bielawski, 1979, *E. monsuna* Bielawski, 1979, *E. sexsignata* Bielawski, 1979 (now *E. ryszardi* Jadwischczak & Węgrzynowicz, 2003), *E. septemnotata* Bielawski, 1979, *E. sexpunctata* Bielawski, 1979 and *E. sexpustulata* Bielawski, 1979. Of these only two have since been reported from outside Bhutan: *Epilachna bhutanensis*, from Nepal (Kovář 2007), and *E. monsuna*, from Nepal and India (Kovář 2007, Chakraborty 2010).

The checklist of the insects and mites of Bhutan (Bigger *et al.* 1988) lists 21 species of Coccinellidae of which five are new to the country: *Chilocorus infernalis* Mulsant, 1853, *Calvia breiti* Mader, 1932, *Propylea dissecta* (Mulsant, 1850), *Henosepilachna pusillanima* (Mulsant, 1850) and *Henosepilachna vigintioctomaculata* (Motschulsky, 1858). Identifications therein were mostly made by the taxonomic staff of the Commonwealth Institute of Entomology in London. Since, several species were casually added by Booth (1997): *Calvia quatuordecimguttata* (Linnaeus, 1758), Poorani (2002a): *Halyzia straminea* (Hope, 1831), Kovář (2007): *Chilocorus melas* Weise, 1898 and *Calvia shiva* Kapur, 1963, and Poorani *et al.* (2015): *Oenopia mimica* Weise, 1902. In 2013 Tomaszewska & Szawaryn described a new subspecies from Bhutan: *Afidentula manderstjernaeh bhutani* Tomaszewska & Szawaryn, 2013.

Distributional checklist

The higher taxonomy of the checklist (Table 1) follows the treatment of the family in volume 4 of the Catalogue of Palaearctic Coleoptera (Kovář 2007). *Phymatosternus* Miyatake, 1961 is treated as a junior synonym of *Platynaspis*, following Ślipiński & Tomaszewska (2002). The recent generic revision of Epilachnini by Tomaszewska & Szawaryn (2016) affects the generic placement of a considerable number of the species treated here: *Afissula* Kapur, 1958 is synonymized with *Afissa* Dieke, 1947; *Epilachna* Chevrolat, 1837 is in its current interpretation restricted to the New World. Most of the species formerly classified in *Afissula* and Asian *Epilachna* probably belong to the genus *Afissa* (Tomaszewska & Szawaryn 2016). For many of the species treated here, their current placement is not clear as they are not mentioned in the recent revision. For practical reasons we therefore refrain here from applying these changes and use the generic concepts of Kovář (2007).

For records taken from the literature, reference is given for the first occurrence only. Secondary sources without precise records, e.g. catalogues, are only included if no earlier publications could be traced. As far as possible, an effort was made to place the collecting localities in one of the twenty dzongkhag (districts) currently recognized (Fig. 1). Dzongkhag in bold face indicate new records. Species hitherto not known from outside the territory of Bhutan are considered endemic and labelled 'E'.

Identifications of the material studied are based on the original species descriptions and the Coccinellidae collections of Naturalis. In addition the following publications were consulted: Bielawski (1961, 1971, 1972, 1979, 1980), Booth (1997), Canepari (1986, 1997, 2003), Cao *et al.* (1992), Dieke (1947), Ghorpade (1976), Hoang (1982, 1983), Hu *et al.* (2013), Iablokoff-Khznorian (1982), Jadwischczak (1989, 1990), Kapur (1946, 1948, 1952, 1958, 1963, 1973), Li & Cook (1961), Li *et al.* (2010), Miyatake (1965, 1967, 1970, 1985), Nagaraja & Hussainy (1968), Pang (1979), Pang *et al.* (2012), Poorani (2002b), Ren *et al.* (2009), Sasaji (1967, 1968, 1971), Ślipiński (2007), Tomaszewska & Szawaryn (2013), Wang *et al.* (2015), Yu *et al.* (2000). No effort was made to study relevant type material.

Arrangement of information

For each of the species the following information is presented.

Reference to the original publication of the species and to that of synonyms are given as verbatim citations. Only synonyms of relevance to publications on the fauna of Bhutan are included. For a more complete synonymic overview the reader is referred to Kovář (2007), Poorani (2002a) and Jadwischczak & Węgrzynowicz (2003).

Notes: Relevant additional information is presented here.

Altitude: The altitudinal range given is based on Bhutanese records only and based on both published records and the material studied.

Regional distribution: The occurrence in the following neighbouring regions is given: Nepal, Tibet, and north-

eastern India (NE India). The latter region includes here the states Assam (incl. Arunachal Pradesh), Bihar, Manipur, Meghalaya, Nagaland, Sikkim [& Darjeeling], Uttar Pradesh and West Bengal. If not indicated otherwise, data for Nepal, Tibet, Assam, and Sikkim & Darjeeling are from the Palearctic catalogue by Kovář (2007); the data for the other Indian states are from the checklist by Poorani (2002a) and an update of the latter including Epilachninae (Poorani 2003). As no exhaustive search of the literature was done, the results should not be considered complete. Also, no effort was made to trace back the original records underlying these publications.

Published records: All previous Bhutanese records that could be traced from literature are given. Only primary records are included, later citations of the same material are omitted. Localities are cited verbatim from the original and as far as possible attributed to one of the current dzongkhag. Usually these were not mentioned in the original publication.

Material studied: All specimens studied are listed, organized by dzongkhag. Specimens of which the sex was not determined are referred to as 'ex'. Part of the collected specimens were labelled with a record-specific code (e.g. 'Bt123A'), referring to collecting site ('Bt123') and specific record ('A'). The studied material is deposited in one of the following collections: College of Natural Resources, Lobesa, Bhutan (CNR); National Biodiversity Centre, Serbithang, Bhutan (NBCB); Naturalis Biodiversity Center, Leiden, The Netherlands (RMNH). If not stated otherwise material is deposited in the collection of either NBCB or RMNH, the latter institute keeping only a limited reference collection.

Species accounts

1. *Shirozuella tibetina* Wang, Ge & Ren

Shirozuella tibetina Wang, Ge & Ren, 2012: 96.

Notes: New to Bhutan. This species seems very close to *S. schawalleri* (Canepari, 1997) from Nepal. As indicated by the authors, it differs by having "elytra with a curved yellowish brown spot and elongated triangular coxities". The Bhutanese specimens have an aedeagus and ovipositor that is very similar to those in the photographs of the original description. Also the shape of the abdominal postcoxal line fits very well, being more or less rounded apically, while in *S. schawalleri* it is more pointed (Canepari 1997). The elytral spots are, however, somewhat variable in shape: in some specimens they are more or less oval, while in others they are more elongated and parallel-sided and similar to the figures of *S. schawalleri* in Canepari (1997). From the descriptions both species seem very similar and might even prove to be synonyms.

Altitude: 2700–3700 m.

Regional distribution: Tibet (Wang *et al.* 2012).

Material studied: Bumthang: Shertang La, N 27.501° E 90.867°, 3410 m, 17.viii.2016, *Picea spinulosa*, 1♀ (Bt76E), C. Dorji & O. Vorst. Haa: Haa, N 27.377° E 89.311°, 3393 m, 8.viii.2016, Coniferous forest, 3♂ 1♀ (Bt33H), C. Dorji & O. Vorst. Paro: Chele La, N 27.374° E 89.346°, 3661 m, 8.viii.2016, *Abies densa*, 1♀ (Bt35C), C. Dorji & O. Vorst. Thimphu: Motithang, N 27.478° E 89.595°, 2728 m, 30.viii.2016, *Pinus wallichiana* forest, 1♀ (Bt109B), C. Dorji & O. Vorst. Wangdue Phodrang: Phobjika, N 27.445° E 90.196°, 2891 m, 14.viii.2016, *Pinus wallichiana*, 5♀ (Bt65A), C. Dorji & O. Vorst.

2. *Jauravia limbata* (Motschulsky)

Scymnus limbatus Motschulsky, 1858: 118.

Notes: New to Bhutan.

Altitude: 300–400 m.

Regional distribution: Nepal, NE India: Assam (Poorani 2003).

Material studied: Sarpang: Bhur, RDC, N 26.907° E 90.429°, 373 m, 14.i.2015, Grasses, 2♀, P. Loday & J.B. Gaylal (CNR).

3. *Jauravia quadrinotata* Kapur

Jauravia quadrinotata Kapur, 1946: 85.

Altitude: 1700–1800 m.

Regional distribution: Nepal, NE India: Assam (Poorani 2003), Meghalaya, Sikkim & Darjeeling, West Bengal.

Published records: Bielawski 1979: 110 (Chhukha: '87 km from Phuntsholing'; Wangdue Phodrang: '21 km E of Wangdiphodrang').

4. *Sumnius vestitus* (Mulsant)

Aulis vestita Mulsant, 1850: 934.

Aulis haematica Gorham, 1894: 211.

Altitude: 300–400 m.

Regional distribution: Nepal, India: Bihar, Uttar Pradesh, West Bengal.

Published records: Bielawski 1979: 107 (as *S. vestita*; Chhukha: 'Phuntsholing'; Samtse: 'Samchi'), Bielawski 1979: 107 (as *S. haematica*; Samtse: 'Samchi').

5. *Cryptogonus bimaculatus* Kapur

Cryptogonus bimaculatus Kapur, 1948: 100.

Altitude: 300–1000 m.

Regional distribution: Nepal, Tibet, NE India: Assam (Poorani 2003).

Published records: Bielawski 1979: 109 (Samtse: 'Samchi').

Material studied: Samdrup Jongkhar: Dewathang, N 26.857° E 91.460°, 932 m, 20.viii.2016, Ruderal vegetation, 3♀ (Bt91D), C. Dorji & O. Vorst; Phuentshothang, N 26.885° E 91.687°, 515 m, 26.v.2017, 1♀, C. Dorji. Sar-pang: Bhur, RDC, N 26.907° E 90.429°, 373 m, 14.i.2015, Grasses, 1♂, P. Loday & J.B. Gaylal (CNR).

6. *Cryptogonus complexus* Kapur

Cryptogonus complexus Kapur, 1948: 110.

Altitude: 400–3000 m.

Regional distribution: Nepal (Poorani 2003), NE India: Assam (Poorani 2003), Sikkim & Darjeeling.

Published records: Bielawski 1979: 110 (Chhukha: 'Phuntsholing'; Samtse: 'Samchi').

Material studied: Mongar: Lingmethang, 5 km NW of, N 27.293° E 91.146°, 937 m, 7.vi.2017, Ruderal vegetation, 1♂ (Bt284C), O. Vorst. Pema Gatshel: Tsebar, N 26.986° E 91.381°, 1067 m, 1.vi.2017, Forest, 1♂ (Bt264B), O. Vorst. Samdrup Jongkhar: Dewathang, N 26.857° E 91.460°, 932 m, 20.viii.2016, Ruderal vegetation, 3 ex 3♂ 1♀ (Bt91E), C. Dorji & O. Vorst.

7. *Cryptogonus himalayensis* Kapur

Cryptogonus himalayensis Kapur, 1948: 108.

Altitude: 1300–1400 m.

Regional distribution: NE India: Sikkim & Darjeeling.

Published records: Bielawski 1979: 109 (Chhukha: 'Kamjee').

8. *Cryptogonus nepalensis bhutanensis* Bielawski

Cryptogonus nepalensis bhutanensis Bielawski, 1979: 109.

Altitude: 1300–2800 m.

Regional distribution: only known from Bhutan.

Published records: Bielawski 1979: 109 (Chhukha: 'Chimakothi', 'Phuntsholing'; Trongsa: 'Changra'; Wangdue Phodrang: '13 km E of Wangdiphodrang', 'Nobding').

Material studied: Trashi Yangtse: Bumdeling, N 27.659° E 91.450°, 1903 m, 19.viii.2016, Ruderal vegetation, 2 ex 1♂ (Bt85A), C. Dorji & O. Vorst; Trashi Yangtse, 2 km N of, N 27.628° E 91.498°, 2031 m, 22.v.2017, 1♀, C. Dorji.

9. *Cryptogonus orbiculus* (Gyllenhal)

Coccinella orbicula Gyllenhal in Schönherr, 1808: 205.

Aspidimerus fulvo-cinctus Mulsant, 1853: 266.

Altitude: 400–1000 m.

Regional distribution: Nepal, NE India: Assam (Poorani 2003), Meghalaya.

Published records: Bielawski 1979: 107 (as *C. orbiculus fulvocinctus*; Chhukha: 'Phuntsholing'), Bigger *et al.* 1988: 14 (Chhukha: 'Phuntsholing').

Material studied: Samdrup Jongkhar: Dewathang, N 26.857° E 91.460°, 932 m, 20.viii.2016, Ruderal vegetation, 1♂ 2♀ (Bt91F), C. Dorji & O. Vorst; Trashigang: Galing, N 27.345° E 91.601°, 832 m, 5.vi.2017, Seepage marsh, 1♂ (Bt278I), O. Vorst.

10. ***Cryptogonus postmedialis*** Kapur

Cryptogonus postmedialis Kapur, 1948: 95.

Altitude: 400–1700 m.

Regional distribution: Nepal (Poorani 2003), NE India: Assam (Poorani 2003), Sikkim & Darjeeling, Uttar Pradesh, West Bengal.

Published records: Bielawski 1979: 108 (Chhukha: ‘87 km from Phuntsholing’, ‘Phuntsholing’; Wangdue Phodrang: ‘21 km E of Wangdiphodrang’).

11. ***Cryptogonus quadriguttatus*** (Weise)

Aspidiphorus 4-guttatus Weise, 1895: 326.

Altitude: 300–1900 m.

Regional distribution: NE India: Assam (Poorani 2003), Sikkim & Darjeeling, Uttar Pradesh, West Bengal.

Published records: Bielawski 1979: 108 (Chhukha: ‘87 km from Phuntsholing’; Punakha: ‘Punakha’; Trongsa: ‘Changra’).

Material studied: Samdrup Jongkhar: Kagpadung, N 26.918° E 91.681°, 328 m, 25.v.2017, 1♂, C. Dorji.

12. ***Scymnus bourdilloni*** (Kapur)

Pullus bourdilloni Kapur, 1958: 335.

Notes: New to Bhutan.

Altitude: 1700–1800 m.

Regional distribution: Nepal, NE India: Sikkim & Darjeeling.

Material studied: Trashi Yangtse: Trashi Yangtse, Khulong Chhu, N 27.613° E 91.492°, 1739 m, 22.v.2017, River dunes, 1♂ 1♀ (Bt228G), O. Vorst & C. Dorji.

13. ***Scymnus posticalis*** Sicard

Scymnus posticalis Sicard, 1913a: 503.

Altitude: 2000–2200 m.

Regional distribution: Nepal, NE India: Assam (Poorani 2003), Sikkim & Darjeeling.

Published records: Kapur 1973: 458 (Chhukha: ‘Puthibir’). The location ‘Western Bhutan: Puthibir’ seems non-existent and should be considered a lapsus pro Putlibir, from which location records on aphids collected by the same collector were published (Ghosh *et al.* 1971). It is located north-east of Phuntsholing, altitude ca. 2100 meters above sea level.

14. ***Brumoides daldorfii*** (Crotch)

Coccinella suturalis Fabricius, 1798: 78 (*nec* Olivier, 1791: 50).

Brumus Daldorfii Crotch, 1874: 21.

Altitude: 300–1300 m.

Regional distribution: Nepal, NE India: Manipur, Uttar Pradesh.

Published records: Bielawski 1979: 114 (as *Brumus suturalis*; Chhukha: ‘Kamjee’; Samtse: ‘Samchi’).

Material studied: Sarpang: Bhur, N 26.907° E 90.429°, 373 m, 14.i.2015, Grasses, 1 ex 2♀, P. Loday & J.B. Gaylal (CNR); Bhur, NSC, N 26.907° E 90.429°, 373 m, 15.i.2015, 1 ex 1♂, P. Loday & J.B. Gaylal (CNR).

15. ***Chilocorus infernalis*** Mulsant

Chilocorus infernalis Mulsant, 1853: 189.

Chilocorus bijugus Mulsant, 1853: 189.

Altitude: 2300–2400 m.

Regional distribution: Nepal (Poorani 2003), Tibet, NE India: Meghalaya, Sikkim & Darjeeling, Uttar Pradesh.

Published records: Bigger *et al.* 1988: 14 (as *C. bijugus*; Thimphu: ‘Thimphu’).

Material studied: Paro: Paro, Paachhu, N 27.606° E 89.377°, 2312 m, 9.viii.2016, River bank, 1♂, C. Dorji &

O. Vorst (CNR). Thimphu: Thimphu, Lungtenphu, N 27.4° E 89.6°, 2300 m, 10.vi.1996, 1♂, H.R. Feijen (RMNH).

16. *Chilocorus melas* Weise

Chilocorus melas Weise, 1898: 229.

Regional distribution: NE India: Sikkim & Darjeeling.

Published records: Kovář 2007: 593 ('BT', no locality given).

17. *Chilocorus politus* Mulsant

Chilocorus politus Mulsant, 1850: 455.

Altitude: 200–300 m.

Regional distribution: Nepal, Tibet, India (without precision) (Poorani 2003).

Published records: Bielawski 1979: 114 (Chhukha: 'Balu Jhura').

18. *Priscibrumus uropygialis* (Mulsant)

Exochomus uropygialis Mulsant, 1853: 196.

Altitude: 2400–3400 m.

Regional distribution: Nepal, NE India: Sikkim & Darjeeling.

Published records: Bielawski 1979: 114 (as *Exochomus uropygialis*; Chhukha: 'Chimakothi'; Paro: 'Paro-Takt-sang'; Thimphu: 'Tangu, 22 km N of Thimphu', 'Thimphu'), Bigger *et al.* 1988: 14 (as *Exochomus uropygialis*; Thimphu: 'Sarbitang', 'Thimphu').

Material studied: Haa: Haa, N 27.377° E 89.311°, 3393 m, 8.viii.2016, Coniferous forest, 2♂ (Bt33C), C. Dorji & O. Vorst. Paro: Paachuu, N 27.478° E 89.326°, 2557 m, 9.viii.2016, River bank, 1♂, C. Dorji & O. Vorst.

19. *Platynaspis khalaa* (Bielawski)

Phymatosternus khalaus Bielawski, 1979: 112.

Altitude: 200–300 m.

Regional distribution: only known from Bhutan.

Published records: Bielawski 1979: 112 (as *Phymatosternus khalaus*; Chhukha: 'Khala').

20. *Platynaspis octoguttata* (Miyatake)

Phymatosternus octoguttatus Miyatake, 1961: 173.

Altitude: 1500–1600 m.

Regional distribution: not known from neighbouring regions.

Published records: Bielawski 1979: 110 (as *Phymatosternus octoguttatus*; Punakha: 'Punakha').

21. *Platynaspis samcha* (Bielawski)

Phymatosternus samchus Bielawski, 1979: 111.

Altitude: 300–400 m.

Regional distribution: only known from Bhutan.

Published records: Bielawski 1979: 111 (as *Phymatosternus samchus*; Samtse: 'Samchi').

22. *Platynaspis wittmeri* (Bielawski)

Phymatosternus wittmeri Bielawski, 1979: 110.

Altitude: 1500–1900 m.

Regional distribution: only known from Bhutan.

Published records: Bielawski 1979: 110 (Punakha: 'Punakha'; Wangdue Phodrang: '21 km E of Wangdiphodrang').

Material studied: Trashi Yangtse: Bumdeling, N 27.660° E 91.450°, 1900 m, 18.viii.2016, Broadleaf forest, 1♀, C. Dorji & O. Vorst (CNR).

23. *Rodolia sexnotata* (Mulsant)

Epilachna sex-notata Mulsant, 1850: 807.

Vedalia Guerinii Crotch, 1874: 282.

Altitude: 1500–1900 m.

Regional distribution: Nepal, NE India: Sikkim & Darjeeling, Uttar Pradesh, West Bengal.

Published records: Bielawski 1979: 107 (as *R. guerinii*; Punakha: ‘Punakha’; Trongsa: ‘Changra’).

24. *Halyzia sanscrita* Mulsant

Halyzia sanscrita Mulsant, 1853: 152.

Altitude: 2300–2400 m.

Regional distribution: Nepal, Tibet, NE India: Sikkim & Darjeeling, Uttar Pradesh.

Published records: Bielawski 1979: 125 (Paro: ‘Paro’).

25. *Halyzia straminea* (Hope)

Coccinella Straminea Hope in Gray, 1831: 31.

Notes: Might in the past have been confused with the recently described sibling species *H. dejavu* Poorani & Booth, 2006.

Altitude: 1700–1800 m.

Regional distribution: Nepal, Tibet, NE India: Meghalaya, Sikkim & Darjeeling, West Bengal.

Published records: Poorani 2002a: 342 (‘Bhutan’, no locality given).

Material studied: Chhukha: Darla, N 26.858° E 89.558°, 1750 m, 17–18.v.2017, At light, 1♀, C. Gielis & K. Wangdi.

26. *Illeis confusa* Timberlake (Fig. 4A)

Illeis confusa Timberlake, 1943: 44.

Notes: New to Bhutan.

Altitude: 300–1000 m.

Regional distribution: Nepal, NE India: Assam (Poorani 2003).

Material studied: Samdrup Jongkhar: Dewathang, N 26.857° E 91.460°, 932 m, 20.viii.2016, Ruderal vegetation, ♀ (Bt91A), C. Dorji & O. Vorst. Sarpang: Bhur, RDC, N 26.907° E 90.429°, 373 m, 14.i.2015, Grasses, 2♂, P. Loday & J.B. Gaylal (CNR); Bhur, NSC, N 26.907° E 90.429°, 373 m, 15.i.2015, 1♂ 2♀, P. Loday & J.B. Gaylal. Trashy Yangtse: Doksum, N 27.435° E 91.581°, 903 m, 23.v.2017, 1♂ 1♀, C. Dorji. Tsirang: Phunsumgang, N 27.03° E 90.13°, 907 m, 7.xii.2014, Forest, 1♂, P. Loday & J.B. Gaylal.

27. *Macroilleis hauseri* (Mader)

Halyzia Hauseri Mader, 1930: 162.

Altitude: 2300–2400 m.

Regional distribution: NE India: West Bengal.

Published records: Bielawski 1979: 125 (as *Halyzia hauseri*; Paro/Thimphu: ‘125 km from Phuntsholing in direction of Thimphu’; Thimphu: ‘20 km S of Thimphu’), Bigger *et al.* 1988: 14 (Thimphu: ‘Wachitaba’ [=Wangchuktaba]).

Material studied: Thimphu: Thimphu, Lungtenphu, N 27.4° E 89.6°, 2300 m, 31.vii.1996, 1♀, H.R. Feijen (RMNH).

28. *Alloneda dodecaspilota* (Hope)

Coccinella 12-spilota Hope in Gray, 1831: 31.

Altitude: 1400–2100 m.

Regional distribution: Nepal, Tibet, NE India: Sikkim & Darjeeling, West Bengal.

Published records: Bielawski 1979: 116 (as *Aiolocaria dodecaspilota*; Wangdue Phodrang: ‘Sampa’).

Material studied: Trashigang: Chhiya, N 27.217° E 91.471°, 2015 m, 4.vi.2017, Lake, floating, 1♀ (Bt276A), O. Vorst.

29. *Bothrocalvia lewisii* Crotch

Bothrocalvia Lewisii Crotch, 1874: 143.

Altitude: 300–400 m.

Regional distribution: NE India: Manipur, Nagaland.

Published records: Bielawski 1979: 122 (as *Calvia lewisi*; Samtse: ‘Samchi’).

30. *Callicaria superba* (Mulsant)

Caria superba Mulsant, 1853: 159.

Altitude: 1900–2300 m.

Regional distribution: Nepal, Tibet, NE India: Manipur, Sikkim & Darjeeling, Uttar Pradesh, West Bengal.

Published records: Bielawski 1979: 114 (Chhukha: ‘Chimakothi’).

31. *Calvia albida* Bielawski (Fig. 4B)

Calvia albida Bielawski, 1972: 308.

Notes: New to Bhutan.

Altitude: 1900–2000 m.

Regional distribution: Nepal, NE India: Sikkim & Darjeeling, Uttar Pradesh, West Bengal.

Material studied: Trashi Yangtse: Bumdeling, N 27.642° E 91.465°, 1914 m, 19.viii.2016, Deciduous forest, 1♀ (Bt88A), C. Dorji & O. Vorst.

32. *Calvia breiti* Mader

Calvia Breiti Mader, 1932: 6.

Altitude: 3400–3500.

Regional distribution: Nepal, NE India: Sikkim & Darjeeling, Uttar Pradesh.

Published records: Bigger *et al.* 1988: 14 (Bumthang: ‘Bumthang’), Booth 1997: 930 (Thimphu: ‘Thimphu’).

Material studied: Bumthang: Shertang La, N 27.501° E 90.867°, 3410 m, 17.viii.2016, *Picea spinulosa*, 1♂ 1♀ (Bt76A), C. Dorji & O. Vorst.

33. *Calvia monosha* Bielawski

Calvia monosha Bielawski, 1979: 122.

Altitude: 1700–2000 m.

Regional distribution: only known from Bhutan.

Published records: Bielawski 1979: 122 (Wangdue Phodrang: ‘21 km E of Wangdiphodrang’).

34. *Calvia quatuordecimguttata* (Linnaeus)

Coccinella 14-guttata Linnaeus, 1758: 367.

Coccinella 12-maculata Gebler, 1832: 76.

Altitude: 2300–2400 m.

Regional distribution: Nepal, Tibet, NE India: West Bengal.

Published records: Booth 1997: 926 (Thimphu: ‘Thimphu’).

Material studied: Thimphu: Thimphu, Lungtenphu, N 27.4° E 89.6°, 2300 m, 10.v.1996, 1♀, H.R. Feijen (RMNH); Thimphu, Lungtenphu, N 27.4° E 89.6°, 2300 m, 10.vi.1996, 2♂, H.R. Feijen (RMNH); Thimphu, Lungtenphu, N 27.4° E 89.6°, 2300 m, 12.vi.1996, 1♀, H.R. Feijen (RMNH); Thimphu, Lungtenphu, N 27.4° E 89.6°, 2300 m, 15.vii.1996, 1♀, H.R. Feijen (RMNH); Thimphu, Lungtenphu, N 27.4° E 89.6°, 2300 m, 25.vii.1996, 2 ex, H.R. Feijen (RMNH).

35. *Calvia shiva* Kapur

Calvia shiva Kapur, 1963: 40.

Regional distribution: Nepal, NE India: Manipur, Sikkim & Darjeeling, Uttar Pradesh.

Published records: Kovář 2007: 608 (as *C. schiva* [sic]; ‘BT’, no locality given).

36. *Calvia vulnerata* (Hope)

Coccinella vulnerata Hope *in Gray*, 1831: 31.

Anisocalvia Vishnu Crotch, 1874: 145.

Altitude: 2000–3100 m.

Regional distribution: Nepal, NE India: Sikkim & Darjeeling, Uttar Pradesh, West Bengal.

Published records: Bielawski 1979: 122 (as *C. vishnu*; Paro: ‘Paro, Taktsang’; Wangdue Phodrang: ‘21 km E of Wangdiphodrang’, ‘Sha Gogona’).

37. *Coccinella luteopicta* (Mulsant)

Adalia luteo-picta Mulsant, 1866: 45.

Altitude: 2600–3300 m.

Regional distribution: Nepal, Tibet (Poorani 2003), NE India: Sikkim & Darjeeling, Uttar Pradesh, West Bengal.

Published records: Bielawski 1979: 119 (as *Liodalia luteopicta*; Thimphu: ‘Dorju-la’; Wangdue Phodrang: ‘Decchi Paka’, ‘Kothoka-Sha Gogona’, ‘Sampa-Kothoka’, ‘Sha Gogona’), Bigger *et al.* 1988: 14 (as *Adalia luteopicta*; Bumthang: ‘Bumthang’).

Material studied: Bumthang: Dhur, N 27.606° E 90.694°, 2700 m, 16.viii.2016, Forest clearing, 3 ex 1♂ (Bt71B), C. Dorji & O. Vorst; Jakar, 3 km W of, N 27.544° E 90.722°, 2871 m, 16.viii.2016, Ruderal vegetation, 1 ex 1♂ (Bt66A), C. Dorji & O. Vorst. Wangdue Phodrang: Phobjika, Pelela, N 27.5° E 90.2°, 3200 m, 20.v.1996, 1♀, H.R. Feijen (RMNH).

38. *Coccinella septempunctata* Linnaeus

Coccinella 7-punctata Linnaeus, 1758: 365.

Altitude: 300–2300 m.

Regional distribution: Nepal, Tibet, NE India: Sikkim & Darjeeling, ‘allover India’ (Poorani 2003).

Published records: Kapur 1973: 460 (Chhukha: ‘Puthibir’, see under *S. posticalis*; Wangdue Phodrang: ‘Wangdu, Phudrung’), Bielawski 1979: 119 (Chhukha: ‘87 km from Phuntsholing’, ‘Chimakothi’, ‘Kamjee’, Paro: ‘Paro’; Thimphu: ‘Thimphu’; Trongsa: ‘Changra’), Bigger *et al.* 1988: 14 (Chhukha: ‘Phuntsholing’; Mongar: ‘Mongar’; Thimphu: ‘Thimphu’; Trashigang: ‘Tashigang’; Wangdue Phodrang: ‘Wangdiphodrang’).

Material studied: Dagana: Paytakha, N 26.97° E 90.06°, 913 m, 8.xii.2014, 1♂, P. Loday & J.B. Gaylal (CNR). Pema Gatshel: Pemagatsel, N 27.044° E 91.413°, 1723 m, 31.v.2017, Forest edge, 1♂ (Bt259B), O. Vorst. Punakha: Lobesa, N 27.525° E 89.869°, 1267 m, 11.viii.2016, Road verge, 1♀ (Bt53A), C. Dorji & O. Vorst. Samdrup Jongkhar: Phuentshothang, N 26.885° E 91.687°, 334 m, 21.viii.2016, Agric. field, 1♀ (Bt96H), C. Dorji & O. Vorst. Thimphu: Pungzhi, N 27.354° E 89.574°, 2234 m, 3.viii.2016, Road side, 1♂ (Bt4A), C. Dorji & O. Vorst; Thimphu, Lungtenphu, N 27.4° E 89.6°, 2300 m, 10.v.1996, 2♂, H.R. Feijen (RMNH). Trashigang: Kanglung, Sherubtse, N 27.287° E 91.521°, 1823 m, 24.x.2015, Campus, 1♀, Sem.I Students (CNR). Tsirang: Phunsumgang, N 27.03° E 90.11°, 894 m, 7.xii.2014, 3 ex 1♂, P. Loday & J.B. Gaylal (CNR); Phunsumgang, N 27.03° E 90.13°, 907 m, 7.xii.2014, Forest, 2 ex 1♀, P. Loday & J.B. Gaylal (CNR).

39. *Coccinella transversalis* Fabricius

Coccinella transversalis Fabricius, 1781: 97.

Coccinella repanda Thunberg, 1781: 18.

Altitude: 200–1900 m.

Regional distribution: Nepal, NE India: Sikkim & Darjeeling, India (without precision) (Poorani 2003).

Published records: Bielawski 1979: 119 (as *C. repanda*; Chhukha: ‘Khala’).

Material studied: Mongar: Lingmethang, 4 km W of, N 27.275° E 91.146°, 760 m, 7.vi.2017, Near montane stream, 1♂ (Bt285K), O. Vorst. Samdrup Jongkhar: Beylemsharang, N 26.885° E 91.687°, 337 m, 22.viii.2016, Sub-tropical forest, 1♂ 3♀, C. Dorji & O. Vorst (CNR); Phuentshothang, N 26.885° E 91.687°, 334 m, 21.viii.2016, Agric. field, 2♀ (Bt96D), C. Dorji & O. Vorst. Sarpang: Bhur, RDC, N 26.907° E 90.429°, 373 m, 14.i.2015, Grasses, 2♀, P. Loday & J.B. Gaylal (CNR); Bhur, NSC, N 26.907° E 90.429°, 373 m, 15.i.2015, 1♀, P. Loday & J.B. Gaylal (CNR). Trashi Yangtse: Bumdeling, N 27.660° E 91.450°, 1900 m, 18.viii.2016, Broadleaf forest, 1 ex, C. Dorji & O. Vorst (CNR).

40. *Coelophora bissellata* Mulsant

Coelophora bissellata Mulsant, 1850: 400.

Altitude: 200–1000 m.

Regional distribution: Nepal, Tibet, NE India: Assam (Poorani 2003), Manipur, Meghalaya, Sikkim & Darjeeling, Uttar Pradesh, West Bengal.

Published records: Bielawski 1979: 118 (Chhukha: ‘Balu Jhura’, ‘Phuntsholing’; Samtse: ‘Samchi’).

Material studied: Dagana: Paytakha, N 26.97° E 90.06°, 913 m, 8.xii.2014, 1♂ 1♀, P. Loday & J.B. Gaylal (CNR). Samdrup Jongkhar: Phuentshothang, N 26.885° E 91.687°, 334 m, 21.viii.2016, Agric. field, 2♀ (Bt96E), C. Dorji & O. Vorst. Sarpang: Bhur, RDC, N 26.907° E 90.429°, 373 m, 14.i.2015, Grasses, 1 ex, P. Loday & J.B. Gaylal (CNR). Tsirang: Phunsumgang, N 27.03° E 90.11°, 894 m, 7.xii.2014, 2 ex, P. Loday & J.B. Gaylal (CNR); Phunsumgang, N 27.03° E 90.13°, 907 m, 7.xii.2014, Forest, 1 ex, P. Loday & J.B. Gaylal (CNR).

41. *Coelophora duvaucelii* (Mulsant)

Caria Duvaucelii Mulsant, 1850: 233.

Altitude: 1700–1800 m.

Regional distribution: India (without precision) (Poorani 2003).

Published records: Bielawski 1979: 116 (as *Cyphocaria duvauceli*; Chhukha: ‘87 km from Phuntsholing’).

42. *Harmonia dimidiata* (Fabricius)

Coccinella dimidiata Fabricius, 1781: 94.

Altitude: 600–1300 m.

Regional distribution: Nepal, Tibet, NE India: Assam (Poorani 2003), Manipur, Sikkim & Darjeeling, West Bengal.

Published records: Bielawski 1979: 115 (as *Leis dimidiata*; Wangdue Phodrang: ‘13 km E of Wangdiphodrang’).

Material studied: Pema Gatshel: Kothakpa, N 27.017° E 91.396°, 672 m, 1.vi.2017, Ruderal vegetation, 1♀ (Bt261A), O. Vorst. Samdrup Jongkhar: Dewathang, N 26.857° E 91.460°, 932 m, 20.viii.2016, Ruderal vegetation, 1♀ (Bt91C), C. Dorji & O. Vorst. Trashy Yangtse: Doksum, N 27.435° E 91.581°, 903 m, 23.v.2017, 1♀, C. Dorji.

43. *Harmonia eucharis* (Mulsant)

Ballia Eucharis Mulsant, 1853: 167.

Altitude: 1200–3100 m.

Regional distribution: Nepal, Tibet, NE India: Manipur, Sikkim & Darjeeling, Uttar Pradesh.

Published records: Bielawski 1979: 116 (as *Balia eucharis*; Chhukha: ‘Chimakothi’; Paro: ‘Paro’; Thimphu/Wangdue Phodrang: ‘Wangdi – Dorju-la’), Bigger *et al.* 1988: 14 (Bumthang: ‘Bumthang’; Thimphu: ‘Thimphu’; Wangdue Phodrang: ‘Phubjikha’).

Material studied: Bumthang: Dhur, N 27.606° E 90.694°, 2700 m, 16.viii.2016, Forest clearing, 3 ex 2♂ 2♀ (Bt71A), C. Dorji & O. Vorst; Jakar, 3 km W of, N 27.544° E 90.722°, 2866 m, 17.viii.2016, At light, 1♂ (Bt74A), C. Dorji & O. Vorst. Punakha: Lobesa, Punatshang chhu bank, N 27.506° E 89.885°, 1215 m, 15.iii.2015, *Buddleja* sp., 1♂, C. Dorji (CNR). Trashigang: Chhiya, N 27.217° E 91.471°, 2015 m, 4.vi.2017, Lake, floating, 1♂ (Bt276B), O. Vorst. Trashy Yangtse: Bumdeling, N 27.659° E 91.450°, 1903 m, 19.viii.2016, Ruderal vegetation, 1♀ (Bt85C), C. Dorji & O. Vorst; Trashy Yangtse, Khulong Chhu, N 27.613° E 91.492°, 1739 m, 22.v.2017, River dunes, 2 ex (Bt228E), O. Vorst & C. Dorji.

44. *Harmonia expalliata* Sicard

Harmonia expalliata Sicard, 1913a: 499.

Notes: New to Bhutan.

Altitude: 3600–3700 m.

Regional distribution: not known from neighbouring regions.

Material studied: Paro: Chele La, N 27.374° E 89.346°, 3661 m, 8.viii.2016, *Abies densa*, 1♂ (Bt35A), C. Dorji & O. Vorst.

45. *Harmonia octomaculata* (Fabricius) (Fig. 4C)

Coccinella 8maculata Fabricius, 1781: 97.

Notes: New to Bhutan.

Altitude: 300–400 m.

Regional distribution: Nepal (Poorani 2003), NE India: ‘almost throughout India’ (Poorani 2003).

Material studied: Samdrup Jongkhar: Pemathang, N 26.885° E 91.747°, 362 m, 28.v.2017, 1♂ 1♀, C. Dorji. Sarpang: Bhur, RDC, N 26.907° E 90.429°, 373 m, 14.i.2015, Grasses, 1♀, P. Loday & J.B. Gaylal (CNR).

46. *Harmonia sedecimnotata* (Fabricius) (Fig. 4D)

Coccinella 16notata Fabricius, 1801: 370.

Notes: New to Bhutan.

Altitude: 300–2800 m.

Regional distribution: Nepal, Tibet, NE India: Sikkim & Darjeeling (Poorani 2003), West Bengal.

Material studied: Haa: Haa, N 27.361° E 89.298°, 2712 m, 6.viii.2016, At light, 1♂ (Bt22A), C. Dorji & O. Vorst. Sarpang: Bhur, RDC, N 26.907° E 90.429°, 373 m, 14.i.2015, Grasses, 1♀, P. Loday & J.B. Gaylal (CNR). Tsirang: Phunsumgang, N 27.03° E 90.13°, 907 m, 7.xii.2014, Forest, 2 ex 1♂, P. Loday & J.B. Gaylal (CNR).

47. *Hippodamia variegata* (Goeze)

Coccinella variegata Goeze, 1777: 246.

Adonia Doubledayi Mulsant, 1850: 38.

Altitude: 1600–3400 m.

Regional distribution: Nepal, Tibet, NE India: Sikkim & Darjeeling, Uttar Pradesh.

Published records: Bielawski 1979: 118 (as *Adonia variegata doubledayi*; Chhukha: ‘87 km from Phuntsholing’, ‘Chimakothi’; Paro: ‘Paro’; Thimphu: ‘Thimphu’; Wangdue Phodrang: ‘Sampa-Kothoka’), Bigger *et al.* 1988: 14 (as *Adonia variegata*; Thimphu: ‘Simtokha’, ‘Thimphu’).

Material studied: Haa: Haa, N 27.356° E 89.289°, 2845 m, 7.viii.2016, Road verge, 1♀ (Bt24A), C. Dorji & O. Vorst; Haa, N 27.377° E 89.311°, 3393 m, 8.viii.2016, Coniferous forest, 1 ex 2♂ (Bt33B), C. Dorji & O. Vorst. Thimphu: Dechenphodrang, N 27.499° E 89.632°, 2424 m, 16.v.2017, Ruderal slope, 2♂ 2♀ (Bt202A), O. Vorst & C. Dorji. Khoma, N 27.316° E 89.575°, 2384 m, 31.viii.2016, Stoney slope, 1♂ (Bt113B), C. Dorji & O. Vorst; Pungzhi, N 27.354° E 89.574°, 2234 m, 3.viii.2016, Road side, 1♂ (Bt4B), C. Dorji & O. Vorst; Thimphu, Lungtenphu, N 27.4° E 89.6°, 2300 m, 24.vi.1996, 1♀, H.R. Feijen (RMNH).

48. *Menochilus sexmaculatus* (Fabricius)

Coccinella 6maculata Fabricius, 1781: 96.

Altitude: 300–2100 m.

Regional distribution: Nepal, NE India: Sikkim & Darjeeling, ‘throughout India’ (Poorani 2003).

Published records: Kapur 1973: 460 (Chhukha: ‘Puthibir’, see under *S. posticalis*).

Material studied: Punakha: Punatshangchu, Pemakharpo Hotel, N 27.508° E 89.889°, 1200 m, 11.viii.2016, Grass land, 1 ex, C. Dorji & O. Vorst (CNR). Samdrup Jongkhar: Phuentshothang, N 26.885° E 91.687°, 334 m, 21.viii.2016, Agric. field, 1♂ (Bt96B), C. Dorji & O. Vorst. Sarpang: Bhur, RDC, N 26.907° E 90.429°, 373 m, 14.i.2015, Grasses, 1 ex 1♀, P. Loday & J.B. Gaylal (CNR); Bhur, NSC, N 26.907° E 90.429°, 373 m, 15.i.2015, 2 ex 1♂ 1♀, P. Loday & J.B. Gaylal (CNR).

49. *Micraspis allardi* (Mulsant)

Lemnia Allardi Mulsant, 1866: 249.

Notes: New to Bhutan.

Altitude: 600–700 m.

Regional distribution: Nepal (Poorani 2003), NE India: Bihar, Manipur, Uttar Pradesh.

Material studied: Trashi Yangtse: Doksum, N 27.434° E 91.573°, 664 m, 20.viii.2016, Conifer forest, 1♂, C. Dorji & O. Vorst (CNR).

50. *Micraspis discolor* (Fabricius)

Coccinella discolor Fabricius, 1798: 77.

Notes: New to Bhutan.

Indian and Chinese/Japanese specimens of *M. discolor* are believed to belong to different species (R.G. Booth *in* Poorani 2002a).

Altitude: 300–400 m.

Regional distribution: Tibet, India (without precision) (Poorani 2003).

Material studied: Sarpang: Bhur, NSC, N 26.907° E 90.429°, 373 m, 15.i.2015, 1♂ 3♀, P. Loday & J.B. Gaylal (CNR).

51. *Micraspis inops* (Mulsant)

Cydonia inops Mulsant, 1866: 286.

Verania vincta Gorham, 1895: 686.

Altitude: 300–400 m.

Regional distribution: Nepal, NE India: Assam (Poorani 2003, as *M. vincta*), Bihar, Manipur, Sikkim & Darjeeling.

Published records: Bielawski 1979: 118 (as *Verania inops* f. *vincta*; Samtse: ‘Samchi’).

52. *Micraspis univittata* (Hope) (Fig. 4E)

Coccinella univittata Hope *in* Gray, 1831: 31.

Notes: New to Bhutan.

Altitude: 1400–1500 m.

Regional distribution: Nepal, Tibet.

Material studied: Punakha: Punakha, N 27.594° E 89.895°, 1410 m, 11.viii.2016, Marshy ponds, 2♀ (Bt51A), C. Dorji & O. Vorst.

53. *Oenopia adelgivora* Poorani (Fig. 4F)

Oenopia adelgivora Poorani, 2002b: 107.

Notes: New to Bhutan.

Altitude: 3300–3700 m.

Regional distribution: NE India: Sikkim & Darjeeling.

Material studied: Bumthang: Shertang La, N 27.501° E 90.867°, 3410 m, 17.viii.2016, *Picea spinulosa*, 1♂ 1♀ (Bt76D), C. Dorji & O. Vorst; Shertang La, N 27.501° E 90.867°, 3400 m, 17.viii.2016, *Pinus wallichiana*, 2 ex, C. Dorji & O. Vorst (CNR). Haa: Haa, N 27.377° E 89.311°, 3393 m, 8.viii.2016, Coniferous forest, 1♂ (Bt33G), C. Dorji & O. Vorst. Paro: Chele La, N 27.374° E 89.346°, 3661 m, 8.viii.2016, *Abies densa*, 1♀ (Bt35B), C. Dorji & O. Vorst.

54. *Oenopia billieti* (Mulsant)

Harmonia Billieti Mulsant, 1853: 144.

Notes: New to Bhutan.

Altitude: 2700–3500 m.

Regional distribution: Nepal, Tibet, NE India: Assam (Poorani 2003), Meghalaya, Sikkim & Darjeeling, Uttar Pradesh.

Material studied: Bumthang: Dhur, N 27.606° E 90.694°, 2700 m, 16.viii.2016, Forest clearing, 1 ex (Bt71D), C. Dorji & O. Vorst; Jakar, 3 km W of, N 27.541° E 90.724°, 2946 m, 16.viii.2016, *Pinus wallichiana* forest, 3 ex 2♂ 1♀ (Bt69A), C. Dorji & O. Vorst; Shertang La, N 27.501° E 90.867°, 3410 m, 17.viii.2016, *Picea spinulosa*, 1 ex (Bt76C), C. Dorji & O. Vorst. Haa: Haa, N 27.377° E 89.311°, 3393 m, 8.viii.2016, Coniferous forest, 2♂ 2♀ (Bt33D), C. Dorji & O. Vorst.

55. *Oenopia kirbyi* Mulsant

Oenopia Kirbyi Mulsant, 1850: 425.

Altitude: 400–1000 m.

Regional distribution: NE India: Manipur, Meghalaya, Sikkim & Darjeeling, Uttar Pradesh, West Bengal.

Published records: Bielawski 1979: 117 (Chhukha: ‘Kamjee’, ‘Phuntsholing’).

Material studied: Dagana: Paytakha, N 26.97° E 90.06°, 685 m, 8.xii.2014, 1 ex, P. Loday & J.B. Gaylal (CNR). Tsirang: Paytakha, N 27.03° E 90.13°, 913 m, 8.xii.2014, 1 ex, P. Loday & J.B. Gaylal (CNR); Phunsumgang, N 27.03° E 90.11°, 894 m, 7.xii.2014, 1♂ 1♀, P. Loday & J.B. Gaylal (CNR); Phunsumgang, N 27.03° E 90.13°, 907 m, 7.xii.2014, Forest, 1 ex, P. Loday & J.B. Gaylal (CNR). Samdrup Jongkhar: Dewathang, N 26.857° E 91.460°, 932 m, 20.viii.2016, Ruderal vegetation, 2♀ (Bt91B), C. Dorji & O. Vorst.

56. *Oenopia mimica* Weise

Oenopia mimica Weise, 1902: 505.

Notes: This species is closely related to *O. sauzeti*. It can be separated on characters of the aedeagus and the elytral colour pattern and sculpture (Miyatake 1985, Poorani *et al.* 2015).

Altitude: 300–2700 m.

Regional distribution: Nepal, NE India: Sikkim & Darjeeling (Poorani 2003), Uttar Pradesh.

Published records: Poorani *et al.* 2015 ('Bhutan', no locality given).

Material studied: Bumthang: Dhur, N 27.606° E 90.694°, 2700 m, 16.viii.2016, Forest clearing, 1♂ (Bt71C), C. Dorji & O. Vorst. Chhukha: Chapchha, N 27.203° E 89.533°, 2381 m, 6.viii.2016, Dry forest, *Artemisia* sp., 1♂ (Bt21B), C. Dorji & O. Vorst. Pema Gatshel: Kothakpa, N 27.017° E 91.396°, 672 m, 1.vi.2017, Ruderal vegetation, 2♀ (Bt261B), O. Vorst. Sarpang: Bhur, RDC, N 26.907° E 90.429°, 373 m, 14.i.2015, Grasses, 3 ex 1♂, P. Loday & J.B. Gaylal (CNR). Thimphu: Chamgang, N 27.421° E 89.694°, 2568 m, 30.viii.2016, Ruderal vegetation, 6 ex 1♂ (Bt112C), C. Dorji & O. Vorst; Khoma, N 27.316° E 89.575°, 2384 m, 31.viii.2016, Stoney slope, 2 ex (Bt113A), C. Dorji & O. Vorst; Thimphu, Lungtenphu, N 27.4° E 89.6°, 2300 m, 25.vii.1996, 1♀, H.R. Feijen (RMNH); Thimphu, N 27.473° E 89.625°, 2473 m, 1.viii.2016, Garden, 1♀ (Bt1B), C. Dorji & O. Vorst. Trashigang: Sherubtse, 2 km W of, N 27.281° E 91.501°, 1866 m, 3.vi.2017, Ruderal vegetation, 1♂ (Bt271A), O. Vorst. Trashy Yangtse: Bumdeling, N 27.659° E 91.450°, 1903 m, 19.viii.2016, Ruderal vegetation, 2♀ (Bt85D), C. Dorji & O. Vorst; Trashy Yangtse, Khulong Chhu, N 27.613° E 91.492°, 1739 m, 22.v.2017, River dunes, 3♀ (Bt228B), O. Vorst & C. Dorji.

57. *Oenopia quadripunctata* Kapur

Oenopia quadripunctata Kapur, 1963: 27.

Altitude: 200–400 m.

Regional distribution: Nepal, Tibet, NE India: Assam (Poorani 2003), Manipur, Meghalaya, Sikkim & Darjeeling, West Bengal.

Published records: Bielawski 1979: 118 (Chhukha: 'Phuntsholing').

58. *Oenopia sauzeti* Mulsant

Oenopia sauzeti Mulsant, 1866: 281.

Notes: A very similar species, *O. mimica*, had not been reported in the region until very recently (Poorani *et al.* 2015). According to our observations, both species are common. Many previously published records of *O. sauzeti* could actually refer to *O. mimica*.

Altitude: 300–1100 m (based on studied material only).

Regional distribution: Nepal, Tibet, NE India: Assam (Poorani 2003), Manipur, Sikkim & Darjeeling, Uttar Pradesh, West Bengal.

Published records: Kapur 1973: 458 (Chhukha: 'Puthibir', see under *S. posticalis*; Wangdue Phodrang: 'Wangdu'), Bielawski 1979: 117 (Chhukha: '87 km from Phuntsholing', 'Chimakothi', 'Kamjee', 'Phuntsholing'; Samtse: 'Samchi'; Thimphu: 'Thimphu'; Trongsa: 'Changra', 'Tongsa'; Wangdue Phodrang: '13 km E of Wangdiphodrang', 'Wangdiphodrang'), Bigger *et al.* 1988: 14 (Sarpang: 'Gaylegphug'; Thimphu: 'Thimphu'; Wangdue Phodrang: 'Wangdiphodrang'; Zhemgang: 'Shemgang').

Material studied: Dagana: Paytakha, N 26.97° E 90.06°, 685 m, 8.xii.2014, 1 ex, P. Loday & J.B. Gaylal (CNR). Mongar: Lingmethang, 5 km NW of, N 27.293° E 91.146°, 937 m, 7.vi.2017, Ruderal vegetation, 2♂ (Bt284B), O. Vorst; Yadi, N 27.273° E 91.374°, 1034 m, 18.viii.2016, Ruderal vegetation, 1♀ (Bt81A), C. Dorji & O. Vorst. Pema Gatshel: Kothakpa, N 27.016° E 91.396°, 666 m, 30.v.2017, On vegetation, 1♂ (Bt256A), O. Vorst; Kothakpa, N 27.017° E 91.396°, 672 m, 1.vi.2017, Ruderal vegetation, 1♂ 2♀ (Bt261C), O. Vorst. Sarpang: Bhur, RDC, N 26.907° E 90.429°, 373 m, 14.i.2015, Grasses, 1♂, P. Loday & J.B. Gaylal (CNR). Tsirang:

Paytakha, N 27.03° E 90.13°, 913 m, 8.xii.2014, 1 ex, P. Loday & J.B. Gaylal (CNR); Phunsumgang, N 27.03° E 90.11°, 894 m, 7.xii.2014, 13 ex, P. Loday & J.B. Gaylal (CNR); Phunsumgang, N 27.03° E 90.13°, 907 m, 7.xii.2014, Forest, 1 ex, P. Loday & J.B. Gaylal (CNR).

59. *Oenopia sexareata* (Mulsant)

Coelophora sexareata Mulsant, 1853: 181.

Altitude: 300–1900 m.

Regional distribution: Nepal, NE India: Assam (Poorani 2003), Bihar, Manipur, Sikkim & Darjeeling, Uttar Pradesh, West Bengal.

Published records: Bielawski 1979: 118 (as *Coelophora sexareata*; Chhukha: ‘14 km from Phuntsholing’, ‘Kamjee’, ‘Phuntsholing’; Trongsa: ‘Changra’).

Material studied: Sarpang: Bhur, N 26.907° E 90.429°, 373 m, 14.i.2015, Grasses, 1 ex 1♀, P. Loday & J.B. Gaylal (CNR); Bhur, NSC, N 26.907° E 90.429°, 373 m, 15.i.2015, 1♂ 1♀, P. Loday & J.B. Gaylal (CNR). Tsirang: Phunsumgang, N 27.03° E 90.11°, 894 m, 7.xii.2014, 1 ex, P. Loday & J.B. Gaylal (CNR); Phunsumgang, N 27.03° E 90.13°, 907 m, 7.xii.2014, Forest, 1 ex, P. Loday & J.B. Gaylal (CNR).

60. *Oenopia signatella* (Mulsant)

Harmonia signatella Mulsant, 1866: 58.

Altitude: 2500–3100 m.

Regional distribution: Nepal, Tibet, NE India: Manipur, Meghalaya, Sikkim & Darjeeling, West Bengal.

Published records: Bielawski 1979: 119 (as *Synharmonia signatella*; Thimphu: ‘Dorju-la’, ‘Thimphu’), Bigger *et al.* 1988: 14 (Thimphu: ‘Thimphu’).

Material studied: Thimphu: Chamgang, N 27.421° E 89.694°, 2568 m, 30.viii.2016, Ruderal vegetation, 1♂ (Bt112A), C. Dorji & O. Vorst; Motithang, N 27.478° E 89.595°, 2728 m, 30.viii.2016, *Pinus wallichiana* forest, 1♀ (Bt109A), C. Dorji & O. Vorst.

61. *Oenopia smetanai* Canepari (Fig. 4G)

Oenopia smetanai Canepari, 1997: 53.

Notes: New to Bhutan.

Altitude: 3400–3500 m.

Regional distribution: Nepal, NE India: Uttar Pradesh.

Material studied: Bumthang: Shertang La, N 27.501° E 90.867°, 3410 m, 17.viii.2016, *Picea spinulosa*, 1♀ (Bt76B), C. Dorji & O. Vorst.

62. *Propylea dissecta* (Mulsant)

Lemnia dissecta Mulsant, 1850: 377.

Propylea fallax Iablokoff-Khnzorian, 1977: 61.

Notes: In 1985 Miyatake removed the species from synonymy with *P. japonica*, based on the study of material from Nepal, stating that: “in spite of a strong similarity in the male and female genitalia, the Nepalese specimens before me are different from the Japanese species *japonica*”. Differentiating characters are however not mentioned by Miyatake. *Propylea fallax* was synonymized with this species by Canepari (2003).

Altitude: 300–400 m.

Regional distribution: Nepal, NE India: Assam (Poorani 2003), Sikkim & Darjeeling, Uttar Pradesh.

Published records: Bigger *et al.* 1988: 14 (as *P. fallax*; Sarpang: ‘Gaylegphug’). The published record of *P. japonica* probably refers to this species (v.i.): Bielawski 1979: 122 (as *P. japonica*; Samtse: ‘Samchi’).

Material studied: Samdrup Jongkhar: Kagpadung, N 26.910° E 91.682°, 350 m, 26.v.2017, Paddy, 2 ex (Bt246A), O. Vorst & C. Dorji; Phuentshothang, N 26.885° E 91.687°, 334 m, 21.viii.2016, Agric. field, 2♂ 4♀ (Bt96C), C. Dorji & O. Vorst. Sarpang: Bhur, RDC, N 26.907° E 90.429°, 373 m, 14.i.2015, Grasses, 2 ex 2♂ 5♀, P. Loday & J.B. Gaylal (CNR); Bhur, NSC, N 26.907° E 90.429°, 373 m, 15.i.2015, 4 ex 2♂, P. Loday & J.B. Gaylal (CNR).

[*Propylea japonica* (Thunberg)]

Coccinella japonica Thunberg, 1781: 12.

Notes: The record by Bielawski (1979: 122, Samtse: ‘Samchi’) probably refers to *P. dissecta*, at that time considered a synonym of *P. japonica* (v.s.). The occurrence of true *P. japonica* in Bhutan seems unlikely (pers. com. R. Booth); therefore, this species is removed from the list of species in Bhutan.

63. *Propylea luteopustulata* (Mulsant)

Oenopia luteo-pustulata Mulsant, 1850: 421.

Altitude: 400–3400 m.

Regional distribution: Nepal, Tibet, NE India: Assam (Poorani 2003), Meghalaya, Sikkim & Darjeeling, Uttar Pradesh, West Bengal.

Published records: Kapur 1973: 458 (as *Oenopia luteopustulata*; Chhukha: ‘Puthibir’, see under *S. posticalis*; Thimphu: ‘Simtokha, Thimpu’), Bielawski 1979: 116 (as *O. luteopustulata*; Chhukha: ‘87 km from Phuntsholing’, ‘Chimakothi’, ‘Phuntsholing’; Thimphu: ‘Gidaphu’, ‘Thimphu’; Trongsa: ‘Changra’, ‘Tongsa’; Wangdue Phodrang: ‘Sampa’, ‘Wangdiphodrang’), Bigger *et al.* 1988: 14 (as *Pania luteopustulata*; Trashigang: ‘Tashigang’).

Material studied: Chhukha: Bunakha, N 27.150° E 89.541°, 2276 m, 3.viii.2016, Grazed meadow, 1 ex 1♂ 1♀ (Bt6B), C. Dorji & O. Vorst. Dagana: Paytakha, N 26.97° E 90.06°, 913 m, 8.xii.2014, 1 ex, P. Loday & J.B. Gaylal (CNR). Haa: Haa, N 27.370° E 89.309°, 3255 m, 8.viii.2016, Coniferous forest, 1♂ (Bt32A), C. Dorji & O. Vorst; Haa, N 27.377° E 89.311°, 3393 m, 8.viii.2016, Coniferous forest, 1♀ (Bt33A), C. Dorji & O. Vorst. Mongar: Lingmethang, 5 km NW of, N 27.293° E 91.146°, 937 m, 7.vi.2017, Ruderal vegetation, 1 ex (Bt284A), O. Vorst. Paro: Paro River, N 27.454° E 89.423°, 2298 m, 9.viii.2016, River bank, 2♀ (Bt40A), W. Klein. Pema Gatshel: Pemagatsel, N 27.044° E 91.413°, 1723 m, 31.v.2017, Forest edge, 1♂ (Bt259A), O. Vorst. Thimphu: Chamgang, N 27.421° E 89.694°, 2568 m, 30.viii.2016, Ruderal vegetation, 3 ex (Bt112B), C. Dorji & O. Vorst; Dechenchoeling, N 27.516° E 89.642°, 2410 m, 10.viii.2016, *Pinus wallichiana* forest, 1♂ 1♀ (Bt43B), C. Dorji & O. Vorst; Dechenphu, N 27.541° E 89.625°, 2697 m, 10.viii.2016, Blue pine forest, 1 ex 1♀, C. Dorji & O. Vorst (CNR); Semthoka, N 27.446° E 89.641°, 2636 m, 17.v.2017, Shrubland, 1 ex (Bt204A), O. Vorst & C. Dorji; Thimphu, N 27.473° E 89.625°, 2473 m, 1.viii.2016, Garden, 1♂ 2♀ (Bt1A), C. Dorji & O. Vorst; Thimphu, Taba, N 27.514° E 89.644°, 2424 m, 10.viii.2016, Blue pine forest, 1 ex, C. Dorji & O. Vorst (CNR). Trashy Yangtse: Bumdeling, N 27.659° E 91.450°, 1903 m, 19.viii.2016, Ruderal vegetation, 1♀ (Bt85B), C. Dorji & O. Vorst. Tsirang: Phunsumgang, N 27.03° E 90.11°, 894 m, 7.xii.2014, 2 ex 1♀, P. Loday & J.B. Gaylal (CNR); Phunsumgang, N 27.03° E 90.13°, 907 m, 7.xii.2014, Forest, 2 ex, O. Vorst.

64. *Synona ?melanopepla* (Mulsant)

Synia melanopepla Mulsant, 1850: 376,

Leis Rougeti Mulsant, 1866: 175.

Notes: Since the publication of Bielawski (1979) the genus *Synona* was revised by Poorani *et al.* (2008). They described several new species hitherto confused with *S. melanaria*, moreover they pointed out that the name *S. melanaria* has been misinterpreted and should be applied to the species until then known as *S. seminigra* (Weise, 1902). *Synona melanaria* ab. *rougeti* is considered a junior synonym of *S. melanopepla* and the record from Bhutan is hence tentatively considered as belonging to this species. However, it is also stated that *S. obscura* Poorani, Ślipiński & Booth has been hitherto widely misidentified as *S. melanaria* ab. *rougeti*.

Altitude: 300–400 m.

Regional distribution: NE India: Assam (Poorani 2008), Bihar (Poorani *et al.* 2008), Meghalaya (Poorani *et al.* 2008), Uttar Pradesh (Poorani *et al.* 2008).

Published records: Bielawski 1979: 116 (as *Synia melanaria* ab. *rougeti*; Samtse: ‘Samchi’).

65. *Afidentula himalayana* Kapur

Afidentula himalayana Kapur, 1963: 12.

Altitude: 2600–2700 m.

Regional distribution: Nepal, Tibet, NE India: Sikkim & Darjeeling, Uttar Pradesh, West Bengal.

Published records: Bielawski 1979: 84 (Thimphu: ‘Dorjula’).

66. *Afidentula manderstjernae* (Mulsant)

Epilachna Manderstjernae Mulsant, 1853: 256.

Altitude: 300–2000 m.

Notes: The two females from Bumdeling differ from the other specimens of *A. manderstjernae* collected (here assigned to the subspecies *bhutani*), by the somewhat larger elytral spots and the presence of a large central spot on the pronotum. In the absence of males it remains uncertain whether these females belong to the subspecies *A. manderstjernae bhutani* Tomaszewska & Szawaryn, which according to the authors lacks a black macula on the pronotum. However, it seems the only material at their disposal was the single holotype.

Of the two specimens reported by Bielawski (1979), one served as the holotype of *Afidentula manderstjernae bhutani* Tomaszewska & Szawaryn (see below).

Regional distribution: Nepal, NE India: Sikkim & Darjeeling.

Published records: Bielawski 1979: 84 (Samtse: ‘Samchi’).

Material studied: Trashi Yangtse: Bumdeling, N 27.660° E 91.450°, 1900 m, 18.viii.2016, Broadleaf forest, 2♀, C. Dorji & O. Vorst (CNR).

66.1 *Afidentula manderstjernae bhutani* Tomaszewska & Szawaryn

Afidentula manderstjeranae [sic] *bhutani* Tomaszewska & Szawaryn, 2013: 36.

Altitude: 200–1900 m.

Regional distribution: only known from Bhutan.

Published records: Tomaszewska & Szawaryn 2013: 36 (Samtse: ‘Samchi’).

Material studied: Chhukha: Phuntsholing, N 26.850° E 89.395°, 416 m, 5.viii.2016, Road verge, 1♀ (Bt13B), C. Dorji & O. Vorst; Phuntsholing, N 26.870° E 89.383°, 284 m, 5.viii.2016, Road verge, 2 ex 2♂ (Bt14B), C. Dorji & O. Vorst; Tursa, N 26.875° E 89.384°, 288 m, 5.viii.2016, Subtropical forest, 1 ex, C. Dorji & O. Vorst (CNR).

67. *Afissula mysticoides* (Sicard) (Fig. 4H)

Solanophila mysticoides Sicard, 1913b: 507.

Notes: New to Bhutan.

Altitude: 2000–2100 m.

Regional distribution: Nepal, Tibet, NE India: Sikkim & Darjeeling.

Material studied: Trashi Yangtse: Trashi Yangtse, 2 km N of, N 27.628° E 91.498°, 2031 m, 22.v.2017, 1♂, C. Dorji.

68. *Epilachna atypica* (Dieke)

Afissa atypica Dieke, 1947: 133.

Altitude: 400–1700 m.

Regional distribution: NE India: Sikkim & Darjeeling, West Bengal.

Published records: Bielawski 1979: 96 (Chhukha: ‘87 km from Phuntsholing’, ‘Phuntsholing’).

69. *Epilachna bengalica* (Dieke)

Afissa bengalica Dieke, 1947: 130.

Altitude: 1900–2100 m.

Regional distribution: Nepal, Tibet, NE India: Sikkim & Darjeeling, West Bengal.

Published records: Bielawski 1979: 96 (Chhukha: ‘Chimakothi’; Trongsa: ‘Changra’; Wangdue Phodrang: ‘21 km E of Wangdiphodrang’).

Material studied: Trashigang: Chhiya, N 27.217° E 91.471°, 2015 m, 4.vi.2017, Lake, floating, 1♀ (Bt276C), O. Vorst. Trashi Yangtse: Trashi Yangtse, 2 km N of, N 27.628° E 91.498°, 2031 m, 22.v.2017, 1♂, C. Dorji.

70. *Epilachna bhutanensis* Bielawski

Epilachna bhutanensis Bielawski, 1979: 91.

Altitude: 2100–2200 m.

Regional distribution: Nepal.

Published records: Bielawski 1979: 91 (Trongsa: ‘Tongsa’).

71. *Epilachna decemmaculata* Redtenbacher

Epilachna decemmaculata Redtenbacher in Hügel, 1844: 564.

Altitude: 2200–2300 m.

Regional distribution: Nepal, Tibet.

Published records: Bielawski 1979: 93 (Chhukha: ‘Chimakothi’; Thimphu: ‘Thimphu’).

72. *Epilachna dorotae* Bielawski

Epilachna dorotae Bielawski, 1979: 86.

Altitude: 1900–2000 m.

Regional distribution: only known from Bhutan.

Published records: Bielawski 1979: 86 (Trongsa: ‘Changra’).

73. *Epilachna dumerili* Mulsant

Epilachna Dumerili Mulsant, 1850: 801.

Altitude: 200–300 m.

Regional distribution: Nepal, NE India: Sikkim & Darjeeling.

Published records: Bielawski 1979: 88 (Samtse: ‘Samchi’).

Material studied: Chhukha: Pasakha, N 26.839° E 89.426°, 279 m, 4.viii.2016, Subtropical forest, 1♀, C. Dorji & O. Vorst (CNR).

74. *Epilachna elvina* Mulsant

Epilachna Elvina Mulsant, 1853: 250.

Altitude: 1600–2100 m.

Regional distribution: Nepal, India (without precision) (Poorani 2003).

Published records: Bielawski 1979: 94 (Chhukha: ‘87 km from Phuntsholing’).

Material studied: Trashy Yangtse: Bumdeling, N 27.659° E 91.450°, 1908 m, 20.v.2017, 1♂, C. Dorji; Trashy Yangtse, 2 km N of, N 27.628° E 91.498°, 2031 m, 22.v.2017, 2♀, C. Dorji.

75. *Epilachna maculivestis* Mulsant

Epilachna maculivestis Mulsant, 1853: 251.

Altitude: 300–400 m.

Regional distribution: Nepal, Tibet, India (without precision) (Poorani 2003).

Published records: Bielawski 1979: 94 (Samtse: ‘Samchi’).

76. *Epilachna marginicollis* (Hope)

Coccinella marginicollis Hope in Gray, 1831: 31.

Altitude: 2600–2800 m.

Regional distribution: Nepal, Tibet, NE India: Sikkim & Darjeeling, West Bengal.

Published records: Bielawski 1979: 88 (Thimphu: ‘Tangu, 22 km from Thimphu’).

77. *Epilachna monsuna* Bielawski

Epilachna monsuna Bielawski, 1979: 100.

Altitude: 2000–2800 m.

Regional distribution: Nepal.

Published records: Bielawski 1979: 100 (Wangdue Phodrang: ‘21 km E of Wangdiphodrang’, ‘Nobding’).

78. *Epilachna mystica* Mulsant

Epilachna mystica Mulsant, 1850: 841.

Altitude: 1300–2500 m.

Regional distribution: Nepal, Tibet, NE India: Sikkim & Darjeeling, ‘northern region’ (Poorani 2003).

Published records: Bielawski 1979: 88 (Chhukha: ‘87 km from Phuntsholing’, ‘Chimakothi’; Thimphu: ‘Thimphu’; Trongsa: ‘Changra’; Wangdue Phodrang: ‘13 km E of Wangdiphodrang’, ‘Sampa’).

Material studied: Chhukha: Bunakha, N 27.150° E 89.541°, 2276 m, 3.viii.2016, Grazed meadow, 1 ex 1♂ 1♀ (Bt6A), C. Dorji & O. Vorst; Chapchha, N 27.203° E 89.533°, 2381 m, 6.viii.2016, Dry forest, *Artemisia* sp., 2

ex 2♂ 2♀ (Bt21A), C. Dorji & O. Vorst. Thimphu: Dechenchoeling, N 27.516° E 89.642°, 2410 m, 10.viii.2016, *Pinus wallichiana* forest, 1♀ (Bt43A), C. Dorji & O. Vorst; Dechenchoeling, N 27.517° E 89.643°, 2379 m, 10.viii.2016, Road verge, 1 ex 1♂ 2♀ (Bt48A), W. Klein.

79. *Epilachna pambertoni* Crotch

Epilachna Pambertoni Crotch, 1874: 80.

Regional distribution: India (without precision) (Poorani 2003).

Published records: Crotch 1874: 80 ('Bhootan', no locality given).

80. *Epilachna ryszardi* Jadwyszczak & Węgrzynowicz

Epilachna sexsignata Bielawski, 1979: 99 (*nec* Mader, 1957: 122).

Epilachna ryszardi Jadwyszczak & Węgrzynowicz, 2003: 112.

Altitude: 300–1700 m.

Regional distribution: only known from Bhutan.

Published records: Bielawski 1979: 99 (as *E. sexsignata*; Wangdue Phodrang: '21 km E of Wangdiphodrang').

Material studied: Samdrup Jongkhar: Beylemsharang, N 26.885° E 91.687°, 337 m, 22.viii.2016, Subtropical forest, 1♂, C. Dorji & O. Vorst (CNR).

81. *Epilachna septemnotata* Bielawski

Epilachna septemnotata Bielawski, 1979: 104.

Altitude: 1600–1700 m.

Regional distribution: only known from Bhutan.

Published records: Bielawski 1979: 104 (Chhukha: 'km 87 Phuntsholing – Thimphu').

82. *Epilachna sexpunctata* Bielawski

Epilachna sexpunctata Bielawski, 1979: 98.

Altitude: 200–400 m.

Regional distribution: only known from Bhutan.

Published records: Bielawski 1979: 98 (Chhukha: 'Phuntsholing').

83. *Epilachna sexpustulata* Bielawski

Epilachna sexpustulata Bielawski, 1979: 100.

Altitude: 1300–1400 m.

Regional distribution: only known from Bhutan.

Published records: Bielawski 1979: 100 (Wangdue Phodrang: '13 km E of Wangdiphodrang').

84. *Epilachna undecimspilota* (Hope)

Coccinella 11-spilota Hope in Gray, 1831: 31.

Altitude: 1700–2000 m.

Regional distribution: Nepal, Tibet, India (without precision) (Poorani 2003).

Published records: Bielawski 1979: 105 (Wangdue Phodrang: '21 km E of Wangdiphodrang').

85. *Henosepilachna indica* (Mulsant)

Epilachna indica Mulsant, 1850: 776.

Altitude: 300–1900 m.

Regional distribution: Nepal, NE India: Sikkim & Darjeeling, 'northeastern region' (Poorani 2003).

Published records: Bielawski 1979: 83 (Trongsa: 'Changra'), Bigger *et al.* 1988: 14 (as *Epilachna ?indica*; Chhukha: 'Phuntsholing').

Material studied: Chhukha: Pasakha, N 26.837° E 89.470°, 349 m, 4.viii.2016, On Solanaceae, 2♀ (Bt8A), C. Dorji & O. Vorst. Pema Gatshel: Kothakpa, N 27.022° E 91.395°, 649 m, 1.vi.2017, Road verge, 1♀ (Bt266A), O. Vorst.

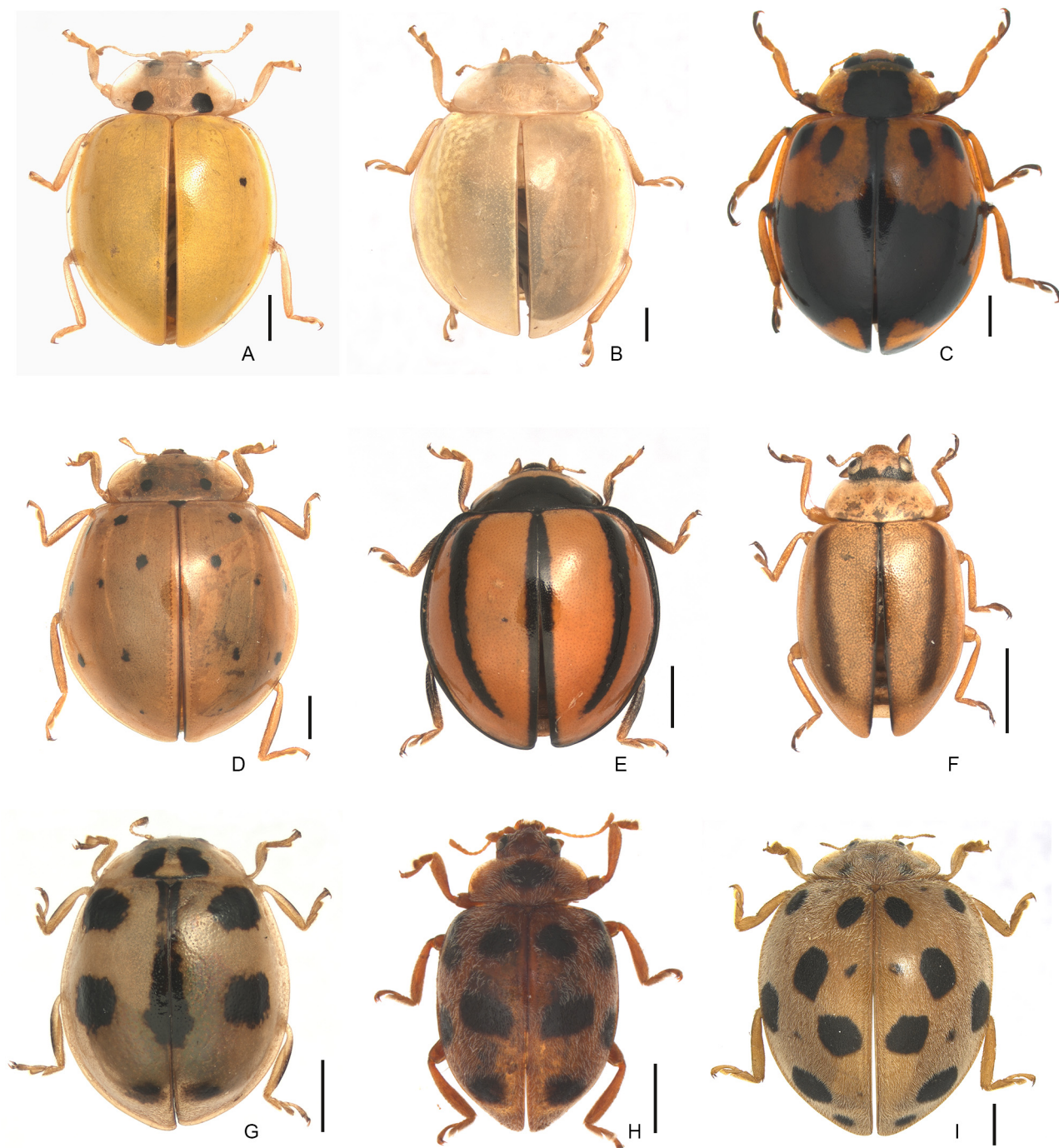


FIGURE 4. Some examples of Coccinellidae newly recorded for Bhutan. Scale bar = 1 mm. (A) *Illeis confusa* Timberlake ♀, Samdrup Jongkhar: Dewathang, 20.viii.2016; (B) *Calvia albida* Bielawski ♀, Trashi Yangtse: Bumdeling, 19.viii.2016; (C) *Harmonia octomaculata* (Fabricius) ♀, Samdrup Jongkhar: Pemathang, 28.v.2017; (D) *H. sedecimnotata* (Fabricius) ♂, Haa: Haa, 6.viii.2016; (E) *Micraspis univittata* (Hope) ♀, Punakha: Punakha, 11.viii.2016; (F) *Oenopia adelgivora* Poorani ♂, Haa: Haa, 8.viii.2016; (G) *O. smetanai* Canepari ♀, Bumthang: Shertang La, 17.viii.2016; (H) *Afissula mysticoides* (Sicard) ♂, Trashi Yangtse: Trashi Yangtse, 2 km N of, 22.v.2017; (I) *Henosepilachna septima* (Dieke) ♀, Samdrup Jongkhar: Phuentshothang, 21.viii.2016.

86. *Henosepilachna ocellata* (Redtenbacher)

Epilachna ocellata Redtenbacher in Hügel, 1844: 563.

Altitude: 1900–2000 m.

Regional distribution: Nepal, Tibet, NE India: Sikkim & Darjeeling, ‘northern region’ (Poorani 2003).

Published records: Bielawski 1979: 84 (Trongsa: ‘Changra’), Bigger *et al.* 1988: 14 (as *Epilachna ?ocellata*; Wangdue Phodrang: ‘Wangdiphodrang’).

87. *Henosepilachna processa* Li & Cook

Henosepilachna processa Li & Cook, 1961: 45.

Notes: New to Bhutan.

Altitude: 200–300 m.

Regional distribution: not known from neighbouring regions.

Material studied: Chhukha: Phuntsholing, N 26.870° E 89.383°, 284 m, 5.viii.2016, Road verge, 1♀ (Bt14A), C. Dorji & O. Vorst.

88. *Henosepilachna pusillanima* (Mulsant)

Epilachna pusillanima Mulsant, 1850: 784.

Regional distribution: Nepal, NE India: Sikkim & Darjeeling.

Published records: Bigger *et al.* 1988: 14 (as *Epilachna pusillanima*; Chhukha: ‘Phuntsholing’).

89. *Henosepilachna septima* (Dieke) (Fig. 4I)

Epilachna septima Dieke, 1947: 58.

Notes: New to Bhutan.

Altitude: 300–400 m.

Regional distribution: India (without precision) (Poorani 2003).

Material studied: Samdrup Jongkhar: Phuentshothang, N 26.885° E 91.687°, 334 m, 21.viii.2016, Agricultural field, 1♂ 1♀ (Bt96A), C. Dorji & O. Vorst.

90. *Henosepilachna ?vigintioctomaculata* (Motschulsky)

Epilachna 28-maculata Motschulsky, 1857: 40.

Regional distribution: Nepal, Tibet, India (without precision) (Poorani 2003).

Published records: Bigger *et al.* 1988: 14 (as *Epilachna ?vigintioctomaculata*; Chhukha: ‘Chukha’).

91. *Henosepilachna vigintioctopunctata* (Fabricius)

Coccinella 28punctata Fabricius, 1775: 84.

Coccinella sparsa Herbst, 1786: 160.

Altitude: 300–1900 m.

Regional distribution: Nepal, Tibet, NE India: Sikkim & Darjeeling.

Published records: Bielawski 1979: 83 (as *H. sparsa*; Chhukha: ‘Phuntsholing’; Trongsa: ‘Changra’), Bigger *et al.* 1988: 14 (as *Epilachna vigintioctopunctata*; Trashigang: ‘Tashigang’).

Material studied: Chhukha: Phuntsholing, N 26.850° E 89.395°, 416 m, 5.viii.2016, Road verge, 1♂ (Bt13A), C. Dorji & O. Vorst. Sarpang: Bhur, RDC, N 26.907° E 90.429°, 373 m, 14.i.2015, Grasses, 2♂ 3♀, P. Loday & J.B. Gaylal (CNR).

Discussion

Until now 75 species of Coccinellidae have been reported from Bhutan. The present publication adds 17 species recorded here for the first time: *Shirozuella tibetina*, *Jauravia limbata*, *Scymnus bourdilloni*, *Illeis confusa*, *Calvia albida*, *Harmonia expallata*, *H. octomaculata*, *H. sedecimnotata*, *Micraspis allardi*, *M. discolor*, *M. univittata*, *Oenopia adelgivora*, *O. billieti*, *O. smetanai*, *Afissula mysticoides*, *Henosepilachna processa* and *H. septima*. One species, *Propylea japonica*, is removed from the list as its occurrence in Bhutan is very unlikely. This brings the known Bhutanese coccinellid diversity to a total of 91 species and one subspecies. The identification of two species is considered tentative. The actual number of species present in the country is certainly considerably higher, as large parts of Bhutan’s territory have not been sufficiently studied yet. From nearby Nepal there are currently 177 species of Coccinellidae known (Kovář 2007, Poorani 2003).

TABLE 1. Distributional checklist of the Coccinellidae of Bhutan representing the occurrence in each of the twenty dzongkhag (districts). See Fig. 1 for the abbreviations used. Abbreviations in bold face indicate new records. Endemic species, hitherto not known from outside Bhutan, are labelled 'E'.

	West												Central					South					East				
	Endemic	Ch	Ha	Pa	St	Th	Da	Ga	Pu	Ts	WP	Bu	Sp	To	Zh	Lh	Mo	PG	SJ	Ta	TY						
Family COCCINELLIDAE Latreille, 1807																											
Subfamily STICHOLOTIDINAE Weise, 1901																											
Tribe SHIROZUELLINI Sasaji, 1967																											
Genus <i>Shirozuella</i> Sasaji, 1967																											
1 <i>S. tibetina</i> Wang, Ge & Ren, 2012			Ha	Pa		Th					WP	Bu															
Tribe STICHOLOTIDINI Weise, 1901																											
Genus <i>Jauravia</i> Motschulsky, 1858																											
2 <i>J. limbata</i> (Motschulsky, 1858)														Sp													
3 <i>J. quadrinotata</i> Kapur, 1946		Ch									WP																
Subfamily EXOPLECTRINAE Crotch, 1874																											
Genus <i>Sumnius</i> Weise, 1892																											
4 <i>S. vestitus</i> (Mulsant, 1850)		Ch			St																						
Subfamily SCYMNINAE Mulsant, 1846																											
Tribe ASPIDIMERINI Mulsant, 1850																											
Genus <i>Cryptogonus</i> Mulsant, 1850																											
5 <i>C. bimaculatus</i> Kapur, 1948					St									Sp						SJ							
6 <i>C. complexus</i> Kapur, 1948		Ch			St													Mo	PG	SJ							
7 <i>C. himalayensis</i> Kapur, 1948		Ch																									
8 <i>C. nepalensis</i> Bielawski, 1972																											
ssp. <i>bhutanensis</i> Bielawski, 1979		Ch									WP			To								TY					

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TABLE 1. (Continued)

		West			Central					South					East							
		Endemic	Ch	Ha	Pa	St	Th	Da	Ga	Pu	Ts	WP	Bu	Sp	To	Zh	Lh	Mo	PG	SJ	Ta	TY
44	<i>H. expalliat</i> Sicard, 1913				Pa																	
45	<i>H. octomaculata</i> (Fabricius, 1781)												Sp							SJ		
46	<i>H. sedecimnotata</i> (Fabricius, 1801)			Ha						Ts			Sp									
Genus <i>Hippodamia</i> Chevrolat, 1836																						
47	<i>H. variegata</i> (Goeze, 1777)	Ch	Ha	Pa		Th					WP											
Genus <i>Menoehilus</i> Timberlake, 1943																						
48	<i>M. sexmaculatus</i> (Fabricius, 1781)	Ch								Pu			Sp							SJ		
Genus <i>Micraspis</i> Chevrolat, 1836																						
49	<i>M. allardi</i> (Mulsant, 1866)																					TY
50	<i>M. discolor</i> (Fabricius, 1798)												Sp									
51	<i>M. inops</i> (Mulsant, 1866)					St																
52	<i>M. univittata</i> (Hope, 1831)									Pu												
Genus <i>Oenopia</i> Mulsant, 1850																						
53	<i>O. adelgivora</i> Poorani, 2002			Ha	Pa								Bu									
54	<i>O. billieti</i> (Mulsant, 1853)			Ha									Bu									
55	<i>O. kirbyi</i> Mulsant, 1850	Ch						Da		Ts										SJ		
56	<i>O. mimica</i> Weise, 1902	Ch				Th							Bu	Sp					PG		Ta	TY
57	<i>O. quadripunctata</i> Kapur, 1963	Ch																				
58	<i>O. sauzeti</i> Mulsant, 1866	?Ch			?St	?Th	Da			Ts	?WP										Mo	
59	<i>O. sexareata</i> (Mulsant, 1853)	Ch								Ts				Sp	To							
60	<i>O. signatella</i> (Mulsant, 1866)					Th																
61	<i>O. smetanai</i> Canepari, 1997												Bu									

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By far the largest number of species (42) has been reported from Chhukha dzongkhag in the southwest of the country, followed by Wangdue Phodrang (central) with 21 species and Thimphu (west) with 18 species (Table 1, Fig. 1). From two of the 20 dzongkhag, Gasa and Lhuntse, no coccinellids have been reported at all. It is certain that the large regional differences observed here are mainly artefacts caused by various levels of collecting effort made in different parts of the country. This is further corroborated by the fact that the western part of the country, which has been studied most extensively, has the largest number of species (64), while the less explored central, south and eastern parts have only 31 to 33 species.

The number of Coccinellidae species known to occur in some of the neighbouring areas is presented in Table 2. By far the richest fauna is that of Nepal with 177 species, followed by Sikkim & Darjeeling (109 spp.), Tibet (82 spp.) and Assam (incl. Arunachal Pradesh) (44 spp.). According to Jaccard's coefficient (S_j), a measure of similarity, the fauna of Sikkim & Darjeeling ($S_j = 0.34$) has the strongest resemblance to that of Bhutan, followed by Nepal (0.32), Tibet (0.25) and Assam (0.15). The latter fauna seems to be rather different from that of Bhutan. However, this is also a result of the low number of species so far reported from this territory. Jaccard's coefficient assumes an equal sampling effort, but the low numbers might just be the result of limited collecting in the area and not reflect a poor fauna. A better estimate might just be the fraction of each area's fauna represented in Bhutan. This figure is rather similar for all four, ranging from 47% for Sikkim & Darjeeling to 37% for Nepal, with 65 of its 177 species also present in Bhutan (Table 2).

TABLE 2. Number of Coccinellidae species from the neighbouring areas compared to the known Bhutanese fauna (91 species). The numbers for neighbouring areas are based on Kovář (2007) and Poorani (2003). N_{sp} = number of species, $N_{sp\ Bt}$ = number of species also present in Bhutan (as % of N_{sp}), S_j = Jaccard's similarity coefficient.

	N_{sp}	$N_{sp\ Bt}$	S_j
Nepal	177	65 (37%)	0.32
Sikkim & Darjeeling	109	51 (47%)	0.34
Tibet	82	35 (43%)	0.25
Assam	44	18 (41%)	0.15
All areas	266	73 (27%)	0.26

Taken together, the four nearby areas harbour 266 species of which 73 occur in Bhutan as well (Table 2). Hence, 18 species are known from Bhutan but not from these other areas. Of these, nine species (and two subspecies) are currently known only from Bhutan, nine others are known from other areas outside Bhutan.

When comparing Bhutanese coccinellid diversity (91 spp.) to that of the nearby areas, especially Nepal (177 spp.), it is reasonable to suppose that our current knowledge of the Bhutanese coccinellid fauna is still limited. This assumption is further supported by the fact that the number of species reported from many dzongkhag is low or none. The list has a paucity of smaller species, which often are not recognized as coccinellids and whose identification is more problematic. Of the Scymninae, for instance, there are only nine species known from Bhutan, accounting for 10% of the fauna, while the better studied Nepalese fauna includes 44 representatives of this subfamily, 25% of the country's species.

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