

# NEW AND INTERESTING RECORDS OF ONITICELLINI AND ONTHOPHAGINI (COLEOPTERA: SCARABAEIDAE: SCARABAEINAE) FROM NEPAL (SECOND CONTRIBUTION TO THE KNOWLEDGE OF NEPALESE SCARABAEIDAE)

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## Abstract

New and remarkable records of Nepalese Oniticellini Kolbe, 1905 and Onthophagini Streubel, 1846 (Coleoptera: Scarabaeidae) are presented. For each species the general distribution is given. Ten species (*Liatongus phanaeoides* (Westwood, 1835), *Caccobius* (*Caccophilus*) *himalayanus* Jekel, 1872, *Onthophagus* (*Onthophagiellus*) *crassicollis* Boucomont, 1913, *O.* (*s. str.*) *falsus* Gillet, 1925, *O.* (*Phanaeomorphus*) *procurvus* Balthasar, 1935, *O.* (*Serrophorus*) *atropolitus* d'Orbigny, 1902, *O.* (*s. l.*) *iyengari* Arrow, 1931, *O.* (*s. l.*) *mirandus* Arrow, 1931, *O.* (*s. l.*) *pacificus* van Lansberge, 1885 and *Parascatonomus* (*s. str.*) *sikkimpolitus* Ochi, Kon & Barclay, 2017) are recorded from Nepal for the first time. *Onthophagus* (*s. l.*) *iyengari* Arrow, 1931 is recorded for the first time also from the Palaearctic ecozone. Furthermore, the evidences that the name *Onthophagus armatus* is available from Blanchard (1844) and not Blanchard (1853), as stated by the literature, are provided.

Keywords: Faunistic, new country records, coprophagous scarabs, Nepal.

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## INTRODUCTION

Among the material deposited in the Natural History Museum London, including the specimens sampled by the second author during his 2022 Nepal fieldtrip, and in the first author's collection, we found some Oniticellini Kolbe, 1905 and Onthophagini

Streibel, 1846 whose data are worthy of publication. Furthermore, with the support of László Nádai (Budapest, Hungary), who made several entomological trips to Nepal, we obtained access to other interesting records of Onthophagini from this Himalayan country. The present paper deals with such records. It shall be considered as the second contribution

to the knowledge of Nepali Scarabaeidae, after Ziani (2024a). All collecting data of the concerning species are given, and their distribution is specified. We also provide habitat images for some collecting localities.

## MATERIAL AND METHODS

Systematic and nomenclature follow Bezděk (2016) for the tribe Oniticellini, and Ziani and Bezděk (2016) for the tribe Onthophagini, with some exceptions: the genus *Liatongus* Reitter, 1892 is treated in the subtribe *Liatongina* Philips, 2016 of Oniticellini (Philips 2016), the year of description of *Onthophagus phanaeoides* Westwood (presently *Liatongus phanaeoides*) is reported to be 1835, and not 1839 (Bousquet 2016), the authorship of the epithet 'Onthophagini' is assigned to Streubel (1846) as in Bouchard and Bousquet (2020) and, finally, *Parascatonomus* Paulian, 1932 is considered at a rank of genus (Kabakov 1992, Ochi & Kon 2017). Furthermore, the name *Onthophagus armatus* is deemed to be available from Blanchard (1844) (see the discussion below).

All taxa are listed alphabetically in the list. All observations are listed chronologically. The number of collected specimens is abbreviated as 'ex.' for one or 'exx' for more than one specimen.

The specimens discussed herein are deposited in the collection of László Nádai, Budapest, Hungary (LNCB), the Natural History Museum, London, United Kingdom (NHMUK) and in the collection of the first author (SZCM).

Labels are optimized and not transcribed *verbatim*.

## RESULTS

### Scarabaeidae Latreille, 1802

#### Scarabaeinae Latreille 1802

#### Oniticellini Kolbe, 1905

#### *Liatongina* Philips, 2016

#### *Liatongus phanaeoides* (Westwood, 1835)

**New material examined.** Nepal: Karnali Pradesh, Humla distr., 34.5 km SE–41 km E Simikot, 1655–2625 m, 29°45'10"N 82°4'26"E to 29°41'47"N 82°6'4"E, 23.vi.2022, D. Telnov leg. 1 ex. (NHMUK); Karnali Pradesh, Humla distr., 41 km E Simikot, 2625 m, 29°41'47"N 82°6'4"E, UV light, 23–24.vi.2022, D. Telnov leg. 1 ex. (NHMUK); Karnali Pradesh, Mugu distr., 35 km N Jumla, 2595 m, 29°35'24"N 82°8'43"E, 26.vi.2022, D. Telnov leg. 20 exx (NHMUK, SZCM); Karnali Pradesh, Jumla distr., Jumla, 9 km NNW to Jumla airport, 2365–3550 m, 29°21'26"N 82°9'31"E to 29°16'21"N 82°11'35"E, 2.vii.2022, D. Telnov leg. 2 exx (NHMUK).

**Distribution.** Pakistan; India: Arunachal Pradesh, Himachal Pradesh and Uttarakhand; China: Chongqing, Fujian, Guizhou, Hebei, Henan, Sichuan, Shanxi and Yunnan; North and South Korea; Japan (Bezděk 2016). China: Xizang (Zhang 2004). India: Jammu and Kashmir (Singh 2020). China: Ningxia, Taiwan; Myanmar; Thailand; Cambodia (Schoolmeesters 2024).

**Remarks.** First record from Nepal.

#### Oniticellina Kolbe, 1905

#### *Oniticellus cinctus* (Fabricius, 1775)

**New material examined.** Nepal: Gandaki Pradesh, Pokhara, 900 m, 14/15.ix.1997, L. Nádai leg. 3 exx (LNCB, SZCM); Bagmati Pradesh, Sauraha, Chitwan National Park, 200 m, 18/19.xi.2002, L. Nádai leg. 3 exx (LNCB); *ibidem*, 13.x.2003, L. Nádai leg. 1 ex. (LNCB); *ibidem*, 11.iv.2019, L. Nádai leg. 4 exx (LNCB); Gandaki Pradesh, 50 km E Pokhara, 360 m, 28°1'39"N 84°15'30"E, 27.iii.2024, S. Ziani leg. 1 ex. (SZCM); Gandaki Pradesh, 70 km E Pokhara, 360 m, 27°55'39"N 84°28'59"E, 27.iii.2024, S. Ziani

leg. 1 ex. (SZCM); Gandaki Pradesh, Damauli, 18 km W Pokhara, 390 m, 28°4'47"N 84°14'14"E, 29.iii.2024, S. Ziani leg. 22 exx (SZCM).

**Distribution.** Pakistan (Noureen et al. 2015). India: Arunachal Pradesh, Himachal Pradesh, Uttarakhand; China: Fujian, Taiwan, Yunnan (Bezděk 2016). Nepal (Shrestha 2005). China: Hainan, Hong Kong; central and southern India; Thailand; Cambodia; Malaysia; Indonesia (Schoolmeesters 2024).

**Remarks.** The presence of the species in Nepal is herewith confirmed.

### Onthophagini Streubel, 1846

#### *Caccobius (Caccophilus) himalayanus* Jekel, 1872

**New material examined.** Nepal: Karnali Pradesh, Humla distr., ~12–13 km SE Simikot, 3000–3445 m, 29°54'23"N 81°55'7"E to 29°53'37"N 81°55'36"E, 18.vi.2022, D. Telnov leg. 1 ex. (NHMUK); Karnali Pradesh, Humla distr., ~12–13 km SE Simikot, 3200–3310 m, 29°54'00"N 81°55'11"E, 18.vi.2022, D. Telnov leg. 1 ex. (NHMUK); Karnali Pradesh, Humla distr., ~21.5 km SE Simikot, 2690–3705 m, 29°49'49"N 81°58'21"E, 20.vi.2022, D. Telnov leg. 2 exx (NHMUK); Karnali Pradesh, Humla distr., 34.5 km SE–41 km E Simikot, 1655–2625 m, 29°45'10"N 82°4'26"E to 29°41'47"N 82°6'4"E, 23.vi.2022, D. Telnov leg. 1 ex. (NHMUK); Karnali Pradesh, Humla distr., 34.5 km SE–41 km E Simikot, 1655–2625 m, 29°45'10"N 82°4'26"E to 29°41'47"N 82°6'4"E, 23.vi.2022, D. Telnov leg. 3 exx (NHMUK, SZCM); Karmali Pradesh, Mugu distr., 35 km N Jumla, 2595 m, 29°35'24"N 82°8'43"E, 26.vi.2022, D. Telnov leg. 2 exx (NHMUK, SZCM).

**Distribution.** India: Himachal Pradesh, Jammu and Kashmir, Uttarakhand; China: Xizang (Ziani & Bezděk 2016). Central and southern India (Schoolmeesters 2024).

**Remarks.** First record from Nepal.

#### *Cleptocaccobius inermis* (Arrow, 1931)

**New material examined.** Nepal: Karmali Pradesh, Humla distr., 28 km E–34.5 km SE Simikot, 2530–1655 m, 29°47'29"N 82°1'15"E to 29°45'10"N 82°4'26"E, 22.vi.2022, D. Telnov leg. 3 exx (NHMUK, SZCM).

**Distribution.** India: Arunachal Pradesh, Himachal Pradesh, Sikkim (Darjeeling district), Uttarakhand (Ziani & Bezděk 2016). Nepal (Shrestha 2005, as *Caccobius*). Western India; Sri Lanka (Schoolmeesters 2024).

**Remarks.** The presence of the species in Nepal is confirmed.

#### *Onthophagus (Colobonthophagus) tragus* (Fabricius, 1792)

**New material examined.** Nepal: Bagmati Pradesh, Sauraha, Chitwan National Park, 150 m, at light, 6.iv.2010, L. Náđai leg. 3 exx (LNCB, SZCM); Bagmati Pradesh, Meghauli area (Chitwan) / Bharatpur 150 m, 27°33'33"N 84°13'28"E, 31.iii.2024, S. Ziani leg. 5 exx (SZCM).

**Distribution.** Nepal (Shrestha 2005). China: Chongqing, Fujian, Hebei, Sichuan, Shanxi, Taiwan, Yunnan; South Korea (Ziani & Bezděk 2016). India: Himachal Pradesh, Uttarakhand; China: Guangdong, Hong Kong, Ningxia; central and southern India; Myanmar; Thailand; Laos; Cambodia; Vietnam; Malaysia; Indonesia (Schoolmeesters 2024).

**Remarks.** Confirmed presence in Nepal.

#### *Onthophagus (Colobonthophagus) trice-ratops* Arrow, 1913

**New material examined.** Nepal: Bagmati Pradesh, Sauraha, Chitwan National Park, 213 m, at light, 4.vi.1983, M. J. D. Brendell leg. 2 exx (NHMUK, SZCM); Bagmati Pradesh, Sauraha, Chitwan National Park, 200 m,

18/19.xi.2002, L. Nádai leg. 6 exx (LNCB); Bagmati Pradesh, Sauraha, 200 m, 11.x.2004, 3 exx (SZCM); Bagmati Pradesh, Jagatpur (Chitwan), 170 m, 27°33'31"N 84°20'29"E, 31.iii.2024, S. Ziani leg. 1 ex. (SZCM).

**Distribution.** Nepal (Shrestha 2005). India: Arunachal Pradesh (Ziani & Bezděk 2016, as *Onthophagus* (*s. l.*) *triceratops*). Central and southern India (Schoolmeesters 2024).

**Remarks.** Confirmed presence in Nepal. *Onthophagus triceratops* is morphologically very close to *O. armatus* Blanchard, 1844. The taxonomic position of the two taxa and their systematic relationship need to be clarified further (J. Schönfeld, pers. comm.). For this reason, we prudently assign to *O. triceratops* all the Nepalese specimens examined.

Talking about *Onthophagus armatus*: according to the literature this name is available from Blanchard (1853), but herein we intend to prove that it is available already from Blanchard (1844). September 7, 1837, the two sloops “Astrolabe” and “Zélée”, skippered by the captain Jules Dumont d’Urville, left the port of Toulon for a scientific exploration through the lands of South Pole and Oceania, and returned to France in 1840. The entire expedition report was published in 22 volumes and several atlases (Bousquet 2016) between 1842 and 1854. The Zoology section appeared in the 3<sup>rd</sup> volume (Jacquinot & Pocheran 1853: mammals and birds; Jacquinot & Guichenot 1853: reptiles and fishes; Jacquinot & Lucas 1853: crustaceans), 4<sup>th</sup> volume (Blanchard 1853: insects) and 5<sup>th</sup> volume (Rousseau 1854: seashells and “zoophytes”). The description of *Onthophagus armatus* was included in the 4<sup>th</sup> volume, published in 1853, in which many other new taxa were also described. Nevertheless, as written above, among the reports of the expedition there are also several atlases grouped in livraisons. The “Zoologie Atlas” contains 140 coloured plates, all of them published some years before the text (Bousquet 2016). In the plate 7 of livraison 21,

considered published in 1844 (Bousquet 2016), there are drawings, made by Charles Émile Blanchard, of both sexes of *Onthophagus armatus*. In the caption of the same plate it can be read: “9. *O. armatus*. Mâle. *Nob.* (Borneo)”, and “10. *Onthophagus armatus*. fem. (Borneo)”, where the “*nob.*” is for “*nobis*” (Cappelli 1928) in Latin for “us” and must be considered as a statement that the species epithet was intentionally introduced as new. Article 12.1 of the Code (ICZN 1999) states that a name published before 1931, to be available, must be accompanied by a description, a definition or an indication of the taxon that it denotes. Article 12.2.7 (ICZN 1999) specifies that the word “indication” is to be understood as the proposal of a new species-group name in association with an illustration of the taxon being named. Such is the case with *Onthophagus armatus* with the drawings published in 1844. Thus, we deem proved that the name of this taxon must be considered available from Blanchard (1844). Of course, the procedure of pre-dating the year of description is to be applied to all the species deemed as new and depicted in the “Zoologie atlas” (Clark & Crosnier 2000). With regard to the *Onthophagini*, nevertheless, all other *Onthophagus* species present in the plate – whose names are available, as said, from 1844 – continue not to have precedence over their senior synonyms (Schoolmeesters 2024). In particular, *Onthophagus flavolineatus* Blanchard, 1844 [*nec* Blanchard, 1853] remains to be a junior synonym of *O. posticus* Erichson, 1842, *O. umbraculatus* Blanchard, 1844 [*nec* Blanchard, 1853] to be considered a junior synonym of *O. auratus* Erichson, 1842, *O. viridiobscurus* Blanchard, 1844 [*nec* Blanchard, 1853] – a junior synonym of *O. discolor* Hope, 1841, and, finally, *O. cupreoviridis* Blanchard, 1844 [*nec* Blanchard, 1853] – a junior synonym of *O. australis* Guérin-Ménéville, 1830.

***Onthophagus* (*Colobonthophagus*) *urellus* Boucomont, 1920**

**New material examined.** Nepal: Bagmati

Pradesh, Saurah, Chitwan National Park, 213 m, at light, 4.vi.1983, M. J. D. Brendell leg. 2 exx (NHMUK, SZCM).

**Distribution.** Nepal (Schönfeld & Rohwedder 2022). Southern India; Myanmar (Schoolmeesters 2024).

**Remarks.** The presence of the species in Nepal is herein confirmed.

***Onthophagus (Indonthophagus) turbatus* Walker, 1858**

**New material examined.** Nepal: Gandaki Pradesh, 50 km E Pokhara, 360 m, 28°1'39"N 84°15'30"E, 27.iii.2024, S. Ziani leg. 2 exx (SZCM).

**Distribution.** Sri Lanka (Walker 1858). India (Boucomont 1914). Pakistan; Nepal; Bhutan (Ziani 2024b).

**Remarks.** Confirmed presence in Nepal.

***Onthophagus (Onthophagiellus) crassicollis* Boucomont, 1913**

**New material examined.** Nepal: Bagmati Pradesh, Royal Chitwan National Park – Temple Tiger Lodge, 200 m, 15.x.2006, L. Nádaí leg. 15 exx (LNCB, SZCM).

**Distribution.** India: Arunachal Pradesh; China: Yunnan (Ziani & Bezděk 2016). Myanmar; Thailand; Vietnam; Sumatra; Malaysia (Schoolmeesters 2024).

**Remarks.** First record for Nepal.

***Onthophagus (s. str.) falsus* Gillet, 1925**

**New material examined.** Nepal: Bagmati Pradesh, Sauraha, Chitwan National Park, 11.iv.2009, L. Nádaí leg. 4 exx (LNCB, SZCM).

**Distribution.** Saudi Arabia; Afghanistan; Pakistan; India (Ziani et al. 2019).

**Remarks.** First record for Nepal.

***Onthophagus (Palaeonthophagus) marginalis nigrimargo* Goidanich, 1926**

**New material examined.** Nepal: Gandaki Pradesh, Kagbeni, 2810 m, 13.v.2008, R. Regoli & R. Galli leg. 1 ex. (SZCM).

**Distribution.** Afghanistan; Pakistan; India: Himachal Pradesh, Kashmir, Uttarakhand; Nepal; China: Xizang (Ziani & Bezděk 2016).

**Remarks.** As far as we know, *O. marginalis nigrimargo* has been reported only once from Nepal (Kabakov 2006). The species is herein reconfirmed for this Himalayan country.

***Onthophagus (Paraphanaeomorphus) bifasciatus* (Fabricius, 1781)**

**New material examined.** Nepal: Gandaki Pradesh, Pokhara, 900 m, 12.x.1996, 1 ex. (SZCM); Bagmati Pradesh, Chitwan National Park, 170 m, 27°33'24"N 84°20'13"E, 30.iii.2024, S. Ziani leg. 3 exx (SZCM).

**Distribution.** India: Sikkim (Darjeeling district), Uttarakhand; Nepal (Ziani & Bezděk 2016). India: West Bengal, Bihar; Myanmar (Arrow 1931). India: Maharashtra (Endrödi 1974). Bangladesh (Biswas & Ghosh 2000). India: Himachal Pradesh, Assam, Harjana, Jharkhand, Kerala, Meghalaya, Punjab; Myanmar (Schoolmeesters 2024).

**Remarks.** Recorded from Nepal by Petrovitz (1968) and confirmed from the country by Shrestha (2005) and by this paper.

***Onthophagus (Phanaeomorphus) procurvus* Balthasar, 1935**

**New material examined.** Nepal: Koshi Pradesh, Lukla, 2850 m, 7.iv.2003, L. Nádaí leg. 1 ex. (LNCB); Koshi Pradesh, Phakding, 2600 m, 20.x.2010, L. Nádaí leg. 5 ex. (LNCB, SZCM); Gandaki Pradesh, Kalopani, Annapurna Range, 5.v.2017, E.

Kucera leg. 2 exx (SZCM).

**Distribution.** India; China: Shanxi, Sichuan, Yunnan (Hua 2002).

**Remarks.** First record for Nepal.

***Onthophagus (Serrophorus) atropolitus* d'Orbigny, 1902**

**New material examined.** Nepal: Gandaki Pradesh, Pokhara, 900 m, 14.ix.1997, L. Náđai leg. 9 exx (LNCB, SZCM).

**Distribution.** India: Himachal Pradesh, Sikkim (Darjeeling Distr.), Uttar Pradesh (Ziani & Bezděk 2016). Central and southern India; Myanmar; Thailand (Schoolmeesters 2024).

**Remarks.** First record for Nepal.

***Onthophagus (s. l.) beesoni* Arrow, 1931**

**New material examined.** Nepal: Gandaki Pradesh, Pokhara, 600 m, 15.xi.2005, 1 ex. (SZCM); Bagmati Pradesh, Chitwan, 11.xi.2008, 1 ex. (SZCM); Bagmati Pradesh, Saurah – Chitwan, 3.iii.2017, E. Kucera leg. 4 exx (SZCM); Gandaki Pradesh, Damauli, 18 km W Pokhara, 390 m, 28°4'47"N 84°14'14"E, S. Ziani leg. 1 ex. (SZCM).

**Distribution.** India: Uttarakhand, Bihar (Arrow 1931). Nepal (Shrestha 2005). Bangladesh (Schoolmeesters 2024).

**Remarks.** The species is herein confirmed from Nepal.

***Onthophagus (s. l.) iyengari* Arrow, 1931**

**New material examined.** Nepal: Bagmati Pradesh, Jagatpur (Chitwan) 170 m, 27°33'31"N 84°20'29"E, 31.iii.2024, S. Ziani leg. 1 ♀ (SZCM).

**Distribution.** Bangladesh (Arrow 1931).

**Remarks.** First record from Nepal and the Palearctic ecozone (*sensu* Löbl & Löbl

2016).

***Onthophagus (s. l.) mirandus* Arrow, 1931**

**New material examined.** Nepal: Karmali Pradesh, Humla distr., 28 km E-34.5 km SE Simikot, 1655-2530 m, 29°47'29"N 82°1'15"E to 29°45'10"N 82°4'26"E, 22.vi.2022, D. Telnov leg. 12 exx (NHMUK, SZCM).

**Distribution.** India: Himachal Pradesh, Uttarakhand (Ziani & Bezděk 2016). India: Punjab, Rajasthan, Assam (Schoolmeesters 2024).

**Remarks.** First record from Nepal.

***Onthophagus (s. l.) pacificus* van Lansberge, 1885**

**New material examined.** Nepal: Bagmati Pradesh, Machan, 500 m, 23.ix.1994, L. Padovani e M. Malmusi leg. 1 ex. (SZCM); Gandaki Pradesh, Pokhara, 1100 m, 15.x.2003, L. Náđai leg. 1 ex. (SZCM); Bagmati Pradesh, Royal Chitwan National Park – Temple Tiger Lodge, 15.x.2006, L. Náđai leg. 15 exx (LNCB, SZCM).

**Distribution.** India: Arunachal Pradesh, Uttarakhand; China: Yunnan (Ziani & Bezděk 2016). India; Bangladesh; Myanmar; Thailand; Laos; Vietnam; Malaysia; Java; Sumatra; Borneo; Sunda Islands (Schoolmeesters 2024).

**Remarks.** First record from Nepal.

***Onthophagus (s. l.) sternalis* Arrow, 1931**

**New material examined.** Nepal: Bagmati Pradesh, Saurah, Chitwan National Park, 213 m, at light, 4.vi.1983, M. J. D. Brendell leg. 1 ex. (NHMUK).

**Distribution.** India: Bengal, Bihar, Uttarakhand, Maharashtra (Arrow 1931). Nepal (Mahato 2012, 2013). India: Gujarat, Haryana, Jharkhand, Madja Pradesh, Uttar Pradesh; Bangladesh (Schoolmeesters 2024).

**Remarks.** Confirmed presence in Nepal.

Pradesh, Pokhara, 1100 m, 10.x.2001, 1 ex. (SZCM).

*Parascatonomus* (*s. str.*) *sikkimpolitus* Ochi, Kon & Barclay, 2017

**Distribution.** India: Sikkim (Ochi et al. 2017).

**New material examined.** Nepal: Gandaki

**Remarks.** First record for Nepal.



**Figure 1.** Collecting area in Nepal, ~ 13 km SE Simikot, 18.vi.2022. Image courtesy: D. Telnov.



**Figure 2.** Collecting area in Nepal, ~ 21 km SE Simikot, 20.vi.2022. Image courtesy: D. Telnov.

## DISCUSSION

Most of the material collected by the 2022 multi-institutional expedition to Nepal (see Acknowledgements) was sampled in NW part of the country in habitats strongly degraded by overgrazing and deforestation. At numerous places visited, the montane forests have completely vanished or represented by individual trees separated by grazed ground without undergrowth. The diversity of vascular plants in the meadows that replaced the initial forests and now used for grazing of local livestock on slopes appears, with rare exceptions, considerably depleted with only *Rumex* (Polygonaceae) being avoided by the animals and surviving the overgrazing en mass. Erosion is evident at several places since no trees are remaining to fix the soil on slopes. On the other hand, these montane meadows and forest edges are the habitats of several poorly known coprophagous scarabs discussed herein.

For the first time we provide images of the habitats in the Nepal Himalayas for *Caccobius himalayanus* (Figs. 1–2, 4), *Cleptocaccobius inermis*, *Onthophagus mirandus* (Fig. 3), and *Liatongus phanaeoides* (Figs. 4–5). The coprophagous scarabs are using the benefits of abundant dung available from cattle and pack animals and some of these beetle species likely

benefit also from the disappearance of forests and the spread of pastures. The effect of this threat to silvicolous coprophagous scarabs is not yet understood.



**Figure 3.** One of the collecting areas in Nepal, 28 km E - 34 km SE Simikot, 22.vi.2022. The discussed specimens were collected from warm dung (some minutes old) deposited by mules on the stony road at about +25°C and at full sun exposure. Image courtesy: K. Greķe.



**Figure 4.** Collecting area in Nepal, 35 km N Jumla, 26.vi.2022. Image courtesy: K. Greķe.



**Figure 5.** Collecting area in Nepal, ~ 9 km NNW to Jumla airport, 2.vii.2022. Image courtesy: K. Greke.

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