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NOTE

ADDITIONS TO THE KNOWLEDGE OF DARKLING BEETLES (COLEOPTERA: TENEBRIONIDAE) FROM THE INDO-BURMA BIODIVERSITY HOTSPOT, MEGHALAYA, INDIA

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Tenebrionidae is the versatile group, found almost in all habitats throughout the world—in rotten wood, under bark, stones and logs, feeding on decaying vegetation, in dung, seeds, cereals, fungi, roots, and dead animal matter. They are varied in shape and size measuring 2–35 mm in length. These forms are very often apterous, or have vestigial wings, and the elytra are frequently immovable. Many of the wood feeding species have ample wings. The representatives of this family are hard to differentiate but can be identified by these characters (Hegde & Lal 2016). Body hard, antennal insertion hidden under frons, elytra usually completely covering abdomen, abdomen with five visible sternites and first three segments connate, front coxal cavities closed behind, heteromorous tarsi, tarsal segments and claws simple. Even though, there are some studies on the Tenebrionidae of West Bengal (Hegde & Vasanthakumar 2018) and some northeastern states like Manipur (Hegde & Lal 2016) Arunachal Pradesh (Hegde 2019), there is no comprehensive study on the Tenebrionidae fauna of Meghalaya state. As the various hills comprising the state of Meghalaya lies between the plains of Bangladesh and the Brahmaputra Valley of Assam, the topography is markedly different than the surrounding regions, which is why the fauna found in the State show richness in biodiversity and endemism. As the State lacks a detailed catalogue of Tenebrionidae, hence, an attempt has been made to prepare a systematic account of this group of Coleoptera.

Specimens present in the National Zoological Collection, collected by different survey parties of Zoological survey of India, Kolkata were identified and

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classified and distribution records were as per Bouchard et al. (2005), Becvar and Purchart (2008), Lobl & Smetana (2008), Masumoto et al. (2011), Merkl (1990, 1991), Schawaller (2003, 2005, 2012, 2016). The identification is mainly based on the differences in the morphological characters and the structure of the genitalia. The registration numbers are also given for the material examined. The specimens from the old collections were in fragile conditions and hence the images were not given. The species reported elsewhere (outside India) are also included in distribution.

1. Subfamily: Lagriinae Latreille, 1825 (1820)

Tribe: Lupronini Ardoin, 1958

***Luprops kaszabi* Schawaller, 1997**

1997. *Luprops kaszabi* Schawaller, Entomologische Zeitschrift 107: 295–298

Distribution: India [Uttarakhand, Assam and Meghalaya (Tura)], Nepal, West Malaysia.

***Spinolyprops himalayicus* Kaszab, 1965**

1965. *Spinolyprops himalayicus* Kaszab, Miscelania Zoologica 2: 107–130.

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Distribution: INDIA [Uttarakhand, West Bengal, Meghalaya (Tura), Maharashtra and Tamil Nadu], Myanmar, Nepal, Bhutan, Laos, Thailand, Vietnam and Indonesia (Java and Bali).

Tribe: Lagriini Latreille, 1825 (1820)

***Bothynogria meghalayana* Merkl, 1990**

1990. *Bothynogria meghalayana* Merkl, Acta Zoologica Hungarica 36(3–4): 284.

Distribution: India [Meghalaya (Cheerapunji)].

Remark: Endemic

***Xanthalia martensi* Merkl, 1991**

1991. *Xanthalia martensi* Merkl, Stuttgarter Beitr, Naturk. 470(18): 12.

Distribution: India [Meghalaya (Mawphlang)], Nepal.

2. Subfamily: Tenebrioninae Latreille, 1802

Tribe: Ulomini Blanchard, 1845

***Uloma prehimalayana* Kaszab, 1975**

1975. *Uloma prehimalayana* Kaszab, Entomologia Basiliensis 1: 325

Distribution: India [Assam and Meghalaya (Cheerapunji)].

***Uloma rubripes* (Hope, 1831)**

Uloma rubripes Hope, 1831, The Zoological Misc. 1: 31.

Distribution: INDIA [Uttarakhand, Sikkim, West Bengal, Assam and Meghalaya].

***Uloma scita* Walker, 1858**

1858. *Uloma scita* Walker, Ann. Mag. Nat. Hist. (3)2: 284.

1894. *Uloma scita* Fairmaire, Ann. Soc. Ent. Belg. 38: 37.

Distribution: INDIA [Kashmir, Himachal Pradesh, Uttarakhand, West Bengal and Meghalaya (Garo hills)], Pakistan, Nepal and Bhutan.

Tribe: Amarygmmini Gistel, 1856

***Amarygmus speciosus* Dalmann, 1823**

1823. *Amarygmus speciosus* Dalmann, Analecta Entomologica: 61.

Distribution: India [Meghalaya (Tura)], China (Yunnan), Myanmar, Nepal and Thailand.

Tribe: Opatrini Brulle, 1832

***Gonocephalum depressum* (Fabricius, 1801)**

1801. *Opatrum depressum* Fabricius: 117. – Steven 1829: 95.

1801. *Hopatrum depressum* Fabricius – Gemminger 1870: 1931; Fairmaire 1893: 20, 1894: 17.

1801. *Gonocephalum depressum* (Fabricius). – Gebien

1906: 213.

1858. *Opatrum contrahens* Walker, 284. – Blair 1921: 269.

1858. *Hopatrum contrahens* Walker – Gemminger 1870: 1931.

1858. *Gonocephalum contrahens* (Walker). – Gebien 1910b: 322, 1939: 447; Kaszab 1952a: 681.

Material examined: Reg. No. 3873-3880/H4A, 08 ex., 13.ii.1961, Shillong, Meghalaya [25.569 N; 91.884 E; 1503m], coll. S.N. Prashad.

Distribution: India [Kashmir, Himachal Pradesh, Arunachal Pradesh, Sikkim, West Bengal, Meghalaya (Shillong), China (Yunnan), Taiwan, the Philippines, Afghanistan, Pakistan, Nepal, Myanmar, Bhutan, Vietnam, Laos, Indonesia, Sri Lanka and New Guinea].

3. Sub Family: Diaperinae Latreille, 1802

Tribe Scaphidemini Reitter, 1922

***Basanus flaviventris* Blair, 1937**

1937. *Basanus flaviventris* Blair, The Entomologist Monthly Magazine 73: 35-37

Distribution: India [Sikkim, West Bengal and Meghalaya (Nokrek-Daribokgiri)], Vietnam; Laos.

***Ceropria induta* induta Wiedemann, 1819**

1819. *Helops indutus* Wiedemann, Zool. Mag., 1(3): 164.

1831. *Ceropria subocellata* Castelnau et Brulle, Anns. Soc. nat. Paris, 23: 398.

1982. *Ceropria kinugasai* Masumoto, Ent. Rev. Japan, 36: 151.

Material examined: Reg. No. 3881-3882 /H4A, 02 ex., 11.i.1962, Shillong, Meghalaya [25.569N; 91.884E; 1503m], coll. C. B. S.

Distribution: India [Arunachal Pradesh, West Bengal, Assam, Meghalaya (Shillong), Chhattisgarh and Andaman Islands]; Japan (Ryuku Is.); Korea, China, Taiwan, the Philippines (Engano Is.), Myanmar, Vietnam, Thailand, Malaya Peninsula, Indonesia (Borneo, Java, Halmahera, Nia Is., Simalur Is., Sulawesi, Sunda Is. and Sumatra).

Tribe: Leiochrinini Lewis, 1894

***Crypsis bimaculatus* Kaszab, 1946**

1946. *Crypsis bimaculatus* Kaszab, Ungarisches Naturwissenschaftliches Museum, 221: 191.

Distribution: India [Arunachal Pradesh, Sikkim and Meghalaya (Tura)], Nepal.

***Crypsis violaceipennis* Waterhouse, 1877**

1877. *Crypsis violaceipennis* Waterhouse, The Entomologist Monthly Magazine 14: 72-75.

Distribution: India [Uttarakhand, Sikkim, West Bengal

and Meghalaya (Tura)], Nepal and Laos.

***Platydema aurimaculatum* Gravely, 1915**

1915. *Platydema aurimaculatum* Gravely, Rec. Ind. Mus. 8: 523.

Distribution: India [Arunachal Pradesh (Hegde, 2019) and Meghalaya (Rongrengiri in East Garo Hills), Myanmar, Laos and Thailand].

***Platydema capreolum* Chevrolat, 1877**

1877. *Platydema capreolum* Chevrolat, Petites Nouvelles Entomologiques 2: 170.

Distribution: India [Meghalaya (Garo Hills), Tamil Nadu, Nepal, Myanmar, Vietnam, Laos, Thailand and Sri Lanka].

***Platydema chalceum* Gebien, 1925**

1925. *Platydema chalceum* Gebien, The Philippine J. Science 27: 539-595.

Distribution: India [Meghalaya (Mawphlang in East Khasi Hills)], Myanmar, Thailand and Indonesia (Java and Borneo).

***Platydema flavopictum* Gebien, 1913**

1913. *Platydema flavopictum* Gebien, Archiv. fur Naturgeschichte (1914) A 79 (9): 17.

Distribution: India [Meghalaya (Tura in West Garo Hills)], Taiwan, Myanmar, Laos and Thailand.

***Platydema haemorroidale* Gebien, 1913**

1913. *Platydema haemorroidale* Gebien, Archiv. fur Naturgeschichte (1914) A 79 (9): 16.

Distribution: India [West Bengal and Meghalaya (Songsak in East Garo Hills)], China, Taiwan, Nepal and Vietnam.

***Platydema shiva* Schwaller, 2003**

2003. *Platydema shiva* Schwaller: p. 263.

Distribution: INDIA [Meghalaya (Norkek National Park in Garo Hills)].

***Platydema vishnu* Schwaller, 2003**

2003. *Platydema vishnu* Schwaller, : p. 263.

Distribution: India [Meghalaya (Ronrengiri in East Garo Hills)].

***Derispia indica* Kaszab, 1946**

1946. *Derispia indica* Kaszab, Ungarischs Naturwissenschaftliches Museum, 221: 79.

Distribution: India [West Bengal and Meghalaya (Cherrapunjee in East Khasi Hills)], Nepal, Myanmar and Bhutan.

***Derispia shillonga* Schwaller, 2016**

2016. *Derispia shillonga* Schwaller, Stuttgarter Beitragezur Naturkunde A Neue series, 9: 199.

Distribution: India [Meghalaya (Khasi Hills)].

***Derisiola assamensis* Kaszab, 1946**

1946. *Derisiola assamensis* Kaszab, Ungarischs Naturwissenschaftliches Museum, 221: 116.

Material examined: Reg. No. 10648 /H4A, 01 ex. 07. iv.1927, Khasi Hills, Meghalaya, coll. Gopi Ram.

Distribution: India [Assam and Meghalaya (Khasi Hills)].

***Derisiola darjeelingiana* Kaszab, 1946**

1946. *Derisiola darjeelingiana* Kaszab, Ungarischs Naturwissenschaftliches Museum, 221: 117.

Distribution: India: Sikkim, West Bengal and Meghalaya (Tura in West Garo Hills)], Nepal.

***Derisiola fruhstorferi* Kaszab, 1946**

1946. *Derisiola fruhstorferi* Kaszab, Ungarischs Naturwissenschaftliches Museum, 221: 118.

Distribution: India [Meghalaya (Khasi Hills)], China (Sichuan), Vietnam and Thailand.

***Leiochrinus metallicus* Schwaller, 2016**

2016. *Leiochrinus metallicus* Schwaller, Stuttgarter Beitragezur Naturkunde A Neue series, 9: 202.

Distribution: India [Sikkim and Meghalaya (Tura in West Garo Hills)].

4. Subfamily: Stenochiinae, Kirby, 1837

Tribe Cnadalonini Oken, 1843

***Andocamaria malgorzatae* Masumoto et al. 2011**

2011. *Andocamaria malgorzatae* Masumoto et al., Annales Zoologici (Warszawa) 61(2): 237-239.

Distribution: India [Meghalaya (Jaintia Hills)].

***Danodema subcalvum* Gebien, 1925**

1925. *Danodema subcalvum* Gebien, The Philippine J. Science 27: 355.

Distribution: India [West Bengal, Meghalaya (Tura in West Garo Hills), Tamil Nadu].

***Derosphaerus exularis* (Gebien, 1913)**

1913. *Derosphaerus exularis* (Gebien), Archiv. fur Naturgeschichte (1914) A 79 (9): 17.

Distribution: India [Assam, West Bengal, Meghalaya (Tura in West Garo Hills)].

***Derosphaerus rugosus* Gravely, 1915**

1915. *Derosphaerus rugosus* Gravely, Rec. Indian Mus., Calcutta, 8: 528.

Distribution: India [Uttar Pradesh, Arunachal Pradesh, Sikkim, Assam, West Bengal, Meghalaya (Tura in West Garo Hills)], Nepal.

***Foochounus assamicus* Kaszab, 1965**

1965. *Anobiomaia assamicus* Kaszab, Miscelanea Zoologica 2: 127.

Material examined: Reg. No. 10712/H4A, 01 ex., 30.viii.1917, Tura, West Garo Hills, coll. S. Kemp.

Distribution: India [Arunachal Pradesh (Hegde, 2019) and Meghalaya (Tura in West Garo Hills)], Nepal.

***Hexarhopalus jendeki* Bacvar and Purchart, 2008**

2008. *Hexarhopalus jendeki* Bacvar and Purchart, Annales Zoologici (Warszawa), 58(1): 57.

Distribution: India: Meghalaya

Tribe: Stenochiini Kirby, 1837***Strongylium aratum* Fairmaire, 1896**

1896. *Strongylium aratum* Fairmaire, Ann. Soc. Ent. Belg. XL: p. 35.

Distribution: India [Uttarakhand, Uttar Pradesh, Sikkim, West Bengal, Assam and Meghalaya], China (Yunnan), Nepal.

***Strongylium angusticolle* Maklin, 1864**

1864. *Strongylium angusticolle* Maklin, Monographie: 333

Distribution: India [Uttarakhand, Sikkim, West Bengal, Assam, Meghalaya], China (Yunnan), Nepal.

***Strongylium angustissimum* Pic. 1922**

1922. *Strongylium angustissimum* Pic., Mel. exo. ent. 37:27

Distribution: India [Uttar Pradesh, Sikkim, West Bengal, Assam and Meghalaya], China (Yunnan), Nepal.

***Strongylium cultellatum* Maklin, 1864**

1864. *Strongylium cultellatum* Maklin, Monographie: 345.

Distribution: India [West Bengal, Assam and Meghalaya], Japan, South Korea and China (Hongkong), Nepal.

***Strongylium stevensi* Gravely, 1915**

1915. *Strongylium stevensi* Gravely, Rec. Indian Mus., Calcutta, 8: 534

Distribution: India [Arunachal Pradesh (Hegde 2019), Assam and Meghalaya].

The northeastern states of India are sandwiched between the eastern Himalaya and Indo-Burma biodiversity hotspots. A few works on the Tenebrionidae fauna were reported from this region. Hegde (2019) has compiled the Tenebrionidae of Sikkim and Arunachal Pradesh from the Eastern Himalaya Biodiversity hotspots, while from the Indo-Burma biodiversity hotspot, Hegde & Lal (2018) worked on the fauna of this group from Manipur. In this paper, efforts are made to document the Tenebrionidae fauna of another state coming under Indo-Burma biodiversity hotspot, Meghalaya, where a total of 37 species of 20 genera belonging to nine tribes of four major sub families are found.

While the Eastern Himalaya region represents a large number of Tenebrionidae species (106 species from Sikkim and 63 species from Arunachal Pradesh), the diversity of the same is markedly less in the Indo-Burma region (13 species from Manipur and 37 species from Meghalaya) (Hegde 2019; Hegde & Lal 2016). The genus like *Laena*, currently known from high altitude areas of the Himalaya in the country, are very much present in Sikkim and Arunachal Pradesh, while there has been no report of the same from the relatively low altitude Indo-Burma region. Another genus, *Gonocephalaum*, which is widely adapted to a number of habitats, generally dry conditions and have a large population comprising of numerous species in India (Hegde 2018), is represented by only five species from the relatively wet climatic conditions of the Indo-Burma region (Hegde & Lal 2016). However, the current paper is adding three species (*Ceropria induta* *induta*, *Derispiola assamensis* and *Foochounus assamicus*) under three genera, two tribes and one sub-family as new record to the Indo-Burma region, while along with these, one more species (*Gonocephalum depressum*) is added to the state fauna of Meghalaya.

The reports of Tenebrionidae from Manipur and Meghalaya represent a small geographic area under the Indo-Burma regions; further studies from Nagaland, Mizoram, Tripura and the southern banks of river Brahmaputra in Assam in India may reveal further additions to the knowledge of this group of Coleoptera. Comprehensive work on this group across the border in Myanmar and beyond that form the part of Indo-Burma region is still lacking.

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Corrigenda

Tanshi, I., A.E. Ogbeibu & P.J.J. Bates (2019). Complementary bat (Mammalia: Chiroptera) survey techniques uncover two new country records for Nigeria. *Journal of Threatened Taxa* 11(14): 14788–14801. <https://doi.org/10.11609/jott.5294.11.14.14788-14801>

Page 14797: Under *Glauconycteris beatrix*, read ‘New records: Okomu National Park’ as ‘New records: Okomu National Park (Image 9)’.

Page 14797: Under *Mimetillus moloneyi*, read ‘New record: Emu (Image 9)’ as ‘New record: Emu’.

Page 14798: In Image 9 caption, read ‘*Mimetillus moloneyi* (Thomas, 1891)’ as ‘*Glauconycteris beatrix* Thomas, 1901’.

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Peer Commentary

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