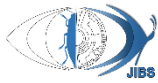


Original Article 

Hyboella rampuriana sp. nov. (Orthoptera: Tetrigidae: Criotettiginae), a new species from Nepal

Madan Subedi ¹  | Josip Skejo ² 

1 Agriculture Science Center, Directorate of Research and Extension, Agriculture and Forestry University, Ghyalchok, Gorkha 34000, Nepal.

2 Evolution Lab, Department of Biology, Faculty of Science, University of Zagreb, Horvatovac 102a, HR-10000 Zagreb, Croatia. Email: jskejo@biol.pmf.hr

Corresponding author: Madan Subedi | [✉ madansubedi13@gmail.com](mailto:madansubedi13@gmail.com)<https://zoobank.org/urn:lsid:zoobank.org:3951E19D-3971-427D-AD0A-7E466AE04FA4>**Academic Editor**

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ABSTRACT. A new groundhopper species (Orthoptera: Tetrigidae) belonging to the genus *Hyboella* Hancock, 1915 has been discovered in the plains of Chitwan, Nepal. The Rampur Swampfopper, *H. rampuriana* sp. nov., is described morphologically in detail, with photographs and illustrations. Like other species of *Hyboella*, this new species possesses a wide vertex with U-shaped carinae, an anteriorly humped pronotum with a rough texture, and anteriorly diverging prozonal carinae, but unlike most *Hyboella* species, the new species lacks lateral spines, has wings, and prozonal carinae elongated in comparison to congeners. One species is transferred from the genus *Criotettix* Bolívar, 1887 to *Hyboella*, and a new combination is proposed: *H. handschini* (Günther, 1937) **comb. nov.** *Euparatettix balteatus* (Walker, 1871) is found in the type locality of the new species and is recorded from Nepal for the first time.

KEYWORDS: Chitwan, *Coptotettix*, *Euparatettix balteatus*, Inner Terai, pygmy grasshoppers, robustness ratio

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INTRODUCTION

The Himalayo-Oriental groundhopper genus *Hyboella* Hancock, 1915 (Tetrigidae: Criotettiginae), currently comprising 30 species (Cigliano et al. 2026), is characterized by a robust, tuberculated body; a distinctly humped pronotum; and the absence of the lateral paranotal spines. Despite the distinct morphology, the taxonomy of this genus remains complex. Namely, most of the species have restricted ranges (Deng et al. 2009), and most records are based on century-old descriptions. Pygmy grasshoppers remain one of the most understudied orthopteran families in Nepal, a country with extreme altitudinal gradients and diverse ecosystems where the discovery of many new taxa is expected. Recent surveys have provided some new insights into the country's groundhopper diversity (Subedi 2022; Subedi & Kasalo 2023; Subedi 2023a, 2023b; Subedi et al. 2024), but the plains of the Terai have remained unexplored. Recently, expeditions were conducted in the subtropical swampy plains of Rampur, Chitwan, and the aim of this paper is to report a distinct population of *Hyboella* that was encountered, which could not be assigned to any of the known species. It is herewith named, described, and illustrated.

MATERIAL AND METHODS

Fieldwork in Rampur was conducted across several phases (spring to late monsoon season) between 2024 and 2025. The first specimen was discovered during a preliminary survey in July 2024. Despite intensive searches throughout the remainder of the monsoon season, the species proved to be elusive,

with only one additional individual located in September 2024. Surveys continued through October and the following winter months, but no individuals were found during this period. Fieldwork resumed in March 2025 (spring), during which a single male was located. The difficulty in locating these specimens is attributed to the habitat, a swampy wetland with a high water table, and the species' cryptic coloration, which allows them to blend into the muddy substrate of the habitat. The type locality (Fig. 2), locally known as Rampur Ghol, is a vital subtropical wetland located within the Agriculture and Forestry University in Chitwan, Nepal, serving as a critical biodiversity pocket in the inner Terai. This marshland is of high ecological importance as a significant biodiversity hotspot, supporting a diverse array of at least 34 plant species from 19 families within the Ghol area (SEN 2010), and serving as a crucial refuge for migratory birds and macro-invertebrates. The site is also rich in ichthyofaunal diversity, with 22 indigenous fish species belonging to 13 families and 5 orders recorded (Oli et al. 2013).

The specimens examined in this work were pinned using Phusis stainless steel insect pins (size #0) and deposited at the Annapurna Natural History Museum, Pokhara, Kaski, Nepal (ANHM) and the Insect Collection of the Agriculture Science Center, Ghyalchok, Gorkha, Nepal (ICAG). The images of the individuals were taken in situ and after collection by a Canon EOS 80D camera with a Canon EF 100mm f/2.8 USM macro lens. The images taken after the collection were processed with the software Adobe Photoshop CS6 version 13.0.1 x32 (Adobe Systems Incorporated 2012). Videos of individual tetrigids in situ and of their habitat were taken with a Nothing 1 phone camera and uploaded to the YouTube channel 'Nepali Grasshoppers'. The video links are provided in the appropriate parts of the text. The measurements of vertex and eye follow Subedi and Kasalo (2023), while other measurements follow Tumbrinck (2014), Tan and Artchawakom (2015), and were made with the software ImageJ v1.53k (Rueden et al. 2017) after calibrating the images with millimeter paper. Taxonomy follows the OSF (Cigliano et al. 2026). The newly described species was compared to all other *Hyboella* species (Table 1) (de Haan 1843; Hancock 1913, 1915; Günther 1935, 1937, 1939; Ichikawa 1994; Zheng & Jiang 1994; Liang & Zheng 1998; Liang 2002; Zheng & Jiang 2002; Zheng et al. 2002; Zheng 2005; Zheng & Deng 2006; Deng et al. 2007, 2009; Zheng 2014; Zha et al. 2017; Li et al. 2019; Storozhenko 2022). Morphological terminologies follow Devriese (1991) and Tumbrinck (2014). Nomenclature is in accordance with the 4th edition of the International Code of Zoological Nomenclature (ICZN 1999).

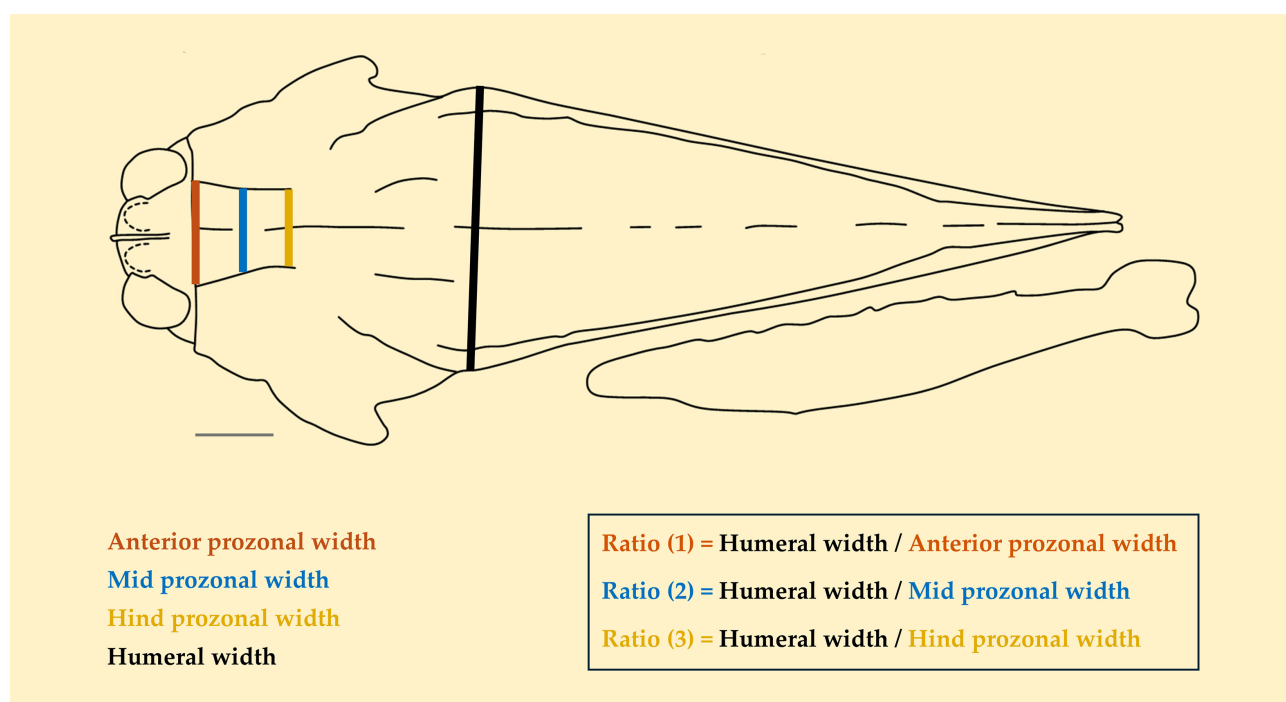


Figure 1. Measuring ratio between humeral width and prozonal width shown on example of *Hyboella rampuriana* sp. nov. Scale bar = 1 mm.



Figure 2. Type locality of *Hyboella rampuriana* sp. nov., Rampur, Chitwan. **A.** London Bridge; **B.** Swamp land; **C, D.** Map showing the position of the type locality in a broader (C) and narrower (D) context. The map was generated using GPS Visualizer, a tool developed by Adam Schneider (©2003–2025). The video showing the type locality is available on [YouTube](#).

RESULTS

Class Insecta Linnaeus, 1758

Order Orthoptera Latreille, 1793

Family Tetrigidae Rambur, 1838

Subfamily Criotettiginae Kevan, 1966

Genus *Hyboella* Hancock, 1915

Type species. *Hyboella tentata* Hancock, 1915, from NE India: Assam: Sibsagar.

Diagnosis [based on type species and its relatives]. Vertex wider than an eye; paranotal spines present or absent; head not raised above the pronotum in lateral view; pronotum with anterior half elevated and surface markedly tuberculated; prozonal carinae diverging anteriorly (rarely parallel or inwardly curved); interhumeral carina present; overall stature robust.

Table 1. List of all *Hyboella* species with type locality and information on the type material. HT - holotype; STs - syntypes.

Species	Type locality	Name-bearing type
<i>H. aberrans</i> Ichikawa, 1994	JAPAN: Ryuku: Yonaguni	HT♀ (Osaka Museum of Natural History)
<i>H. angulifrons</i> Hancock, 1915	MYANMAR: Kayin: Dawna Hills	HT♀ (Academy of Natural Sciences of Philadelphia)
<i>H. brevipennis</i> Deng, Zheng et Wei, 2007	PR CHINA: Yunnan: Gengma	HT♀ (Shaanxi Normal University)
<i>H. dilatata</i> (Haan, 1843)	INDONESIA: Java	HT♀ (Naturalis Biodiversity Center Leiden)
<i>H. guangxiensis</i> Zheng et Jiang, 1994	PR CHINA: Guangxi: Huanjiang	HT♀ (Shaanxi Normal University?)
<i>H. guizhouensis</i> Zheng, Li et Shi, 2002	PR CHINA: Guizhou: Chishui	HT♀ (Shaanxi Normal University)
<i>H. handschini</i> (Günther, 1937) comb. nov.	INDONESIA: Jawa Barat: Bogor	HT♂ (Naturhistorisches Museum Basel)
<i>H. heinrichi</i> Günther, 1939	MYANMAR: Chin: Mt. Victoria	HT♀ (Museum für Naturkunde Berlin)
<i>H. heteroptera</i> Zha, Wen, Kang et Hyde,	THAILAND: Chiang Rai	HT♀ (Mae Fah Luang University)
<i>H. interrupta</i> Zheng et Deng, 2006	PR CHINA: Guangxi: Yizhou	HT♀ (Shaanxi Normal University)
<i>H. jinxiensis</i> Deng, Zheng et Wei, 2007	PR CHINA: Guangxi: Jingxi	STs (Shaanxi Normal University)
<i>H. jiuwaoshanensis</i> Deng, Zheng et Wei,	PR CHINA: Guangxi: Huanjiang	HT♀ (Shaanxi Normal University)
<i>H. keyensis</i> Günther, 1935	INDONESIA: Maluku: Kai Isl.	HT♂ (Senckenberg Museum für Tierkunde)
<i>H. longinota</i> Zheng et Jiang, 2002	PR CHINA: Guangxi: Du'an	HT♀ (Shaanxi Normal University)
<i>H. longipennis</i> Zheng, 2005	PR CHINA: Tibet: Mêdog	HT♂ (Shaanxi Normal University)
<i>H. nigrimaculata</i> Li, Han et Mao, 2019	PR CHINA: Yunnan: Yingjiang	HT♀ (Dali University)
<i>H. nullipennis</i> (Hancock, 1913)	INDIA: Assam: Janakmukh	HT♀ (Academy of Natural Sciences of Philadelphia)
<i>H. obesa</i> Hancock, 1915	INDIA: Western Bengal: Darjeeling	HT♀ (Academy of Natural Sciences of Philadelphia)
<i>H. overbecki</i> Günther, 1939	INDONESIA: Jawa Barat: Depok	3STs♂♂ (Museum Zoologicum Bogoriense)
<i>H. perakensis</i> Günther, 1939	MALAYSIA: Between Perak and	HT♀ (Universitat Hamburg)
<i>H. puerensis</i> Zheng, 2014	PR CHINA: Yunnan: Puer	HT♀ (Shaanxi Normal University)
<i>H. rampuriana</i> Subedi et Skejo sp. nov.	NEPAL: Chitwan: Rampur	HT♂ (ICAG)
<i>H. similis</i> Günther, 1939	INDONESIA: Jawa Barat: Palabuan	HT♀ (Royal Belgian Institute of Natural Sciences)
<i>H. strictvertex</i> Liang, 2002	PR CHINA: Hainan: Jianfeng	HT♂ (Sun Yatsen University)
<i>H. sumatrensis</i> Storozhenko, 2022	INDONESIA: Sumatra: Bukit	HT♂ (Russian Academy of Sciences, St. Petersburg)
<i>H. tentata</i> Hancock, 1915	INDIA: Assam: Sibsagar	HT♀ (Academy of Natural Sciences of Philadelphia)
<i>H. tuberdoralis</i> Deng, Zheng et Wei, 2009	PR CHINA: Guangxi	HT♀ (Shaanxi Normal University)
<i>H. tumida</i> (Hancock, 1913)	INDIA: Assam: Dibrugarh	HT♀ (Academy of Natural Sciences of Philadelphia)
<i>H. undatifemura</i> Deng, Zheng et Wei, 2007	PR CHINA: Guangxi: Fengshan	HT♀ (Shaanxi Normal University)
<i>H. yumana</i> Zheng, 1998	PR CHINA: Yunnan: Jindong	HT♂ (Chinese Academy of Sciences, Beijing)

Generic assignment and distribution. The new species is assigned to the genus *Hyboella* based on its similarity to the type species of the genus, *H. tentata*. Specifically, the new species, like the majority of *Hyboella* species, exhibits (i) a U-shaped carina of vertex; (ii) a wide vertex; (iii) an anteriorly humped pronotum with a rough texture; (iv) anteriorly diverging prozonal carinae; and (v) lack of paranotal spines, a character observed in many Criotettiginae genera. Currently, the genus *Hyboella* comprises 30 species inhabiting Nepal, India, Japan, Myanmar, Thailand, PR China, Malaysia, and western Indonesia (Sumatra, Java) (Cigliano et al. 2026).

Hyboella rampuriana Subedi & Skejo, sp. nov.

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[Figs 3, 4, 5, 6]

Common name. Rampur Swampopper, referring to the type locality (Rampur), and its swamp habitat.

Type material. **Holotype** ♂ (Fig. 3) (left mid-leg missing tarsus), NEPAL: Bagmati Province: Chitwan district: Bharatpur Metropolitan City: Rampur: Agriculture and Forestry University: London Bridge: Swamp Land; 27°39'23.76"N, 84°21'9.36"E; ca 260 m; 24.iii.2025; M. Subedi leg.; collected by an aerial net; ICAG (ICAG-ORT-TETR212). **Paratypes:** 1♀ (Figs 4, 5A–C, 6), Same locality data as for the holotype; 11.ix.2024; M. Subedi leg.; collected by an aerial net; ICAG (ICAG-ORT-TETR213). 1♂ (Fig. 5D–F) (Partially damaged head, with a hole that occurred post-collection. The photographs were taken before the damage.), Same locality data as for the holotype; 01.vii.2024; M. Subedi leg.; collected by an aerial net; ANHM.

Etymology. The specific epithet *rampuriana* is derived from the place name "Rampur," where the species was discovered. The epithet is a Latin adjective (*rampurianus*, *rampuriana*, *rampurianum*) and agrees in gender with the genus *Hyboella*.

Diagnosis. *Hyboella rampuriana* **sp. nov.** is a winged brachypronotal species with a wide vertex and lacking lateral paranotal spines. The anterior part of the median carina is weakly arched, and the posterior part more or less flat, but with evident tubercles. *Hyboella rampuriana* **sp. nov.** is easily distinguished (1) from *H. keyensis* and *H. nullipennis* by the presence of tegmina; (2) from most of the *Hyboella* species (namely *H. brevipennis*, *H. dilatata*, *H. heinrichi*, *H. keyensis*, *H. nullipennis*, *H. overbecki*, *H. perakensis*, *H. similis*, *H. tentata*, and *H. tumida*) by the presence of hind wings that reach nearly to the tip of the pronotum, whereas in these other species, the wings are either entirely absent or significantly abbreviated; and (3) from *H. handschini* **comb. nov.**, *H. interrupta*, *H. sumatrensis*, and *H. tentata* by the lack of paranotal spines. *Criotettix handschini* exhibits the typical characters of the genus *Hyboella* (see the Diagnosis section of the genus) and is hereby transferred to the genus *Hyboella*, as *Hyboella handschini* **comb. nov.** Comparison with winged species without lateral spines is presented in Table 2.

Hyboella rampuriana **sp. nov.** is most similar to *H. brevipennis* and *H. sumatrensis* in terms of robustness of body, while *H. handschini* **comb. nov.**, is similar to *H. perakensis* and *H. guangxiensis*. In species with parallel prozonal carinae, all robustness ratios are nearly identical, as seen in *H. interrupta* and *H. strictovertex*. Most species, however, exhibit convergent carinae where the ratios progressively increase toward the posterior; typical examples include *H. aberrans*, *H. obesa*, and the extreme convergence seen in *H. nigrimaculata*. Some species, such as *H. guizhouensis*, exhibit a concave or "inwardly curved" shape where the midpoint ratio is greater than the others. No strictly divergent species, where ratios would decrease from anterior to posterior, were observed in this dataset. This indicates that the shape of the prozonal carinae in the genus *Hyboella* ranges strictly from parallel to posteriorly converging. The robustness ratios for all species of *Hyboella* are presented in Table 3.

Hyboella rampuriana **sp. nov.** is clearly differentiated from most of the *Coptotettix* Bolívar, 1887 species from the region (namely *C. annandalei* Hancock, 1915; *C. coniopticus* (Hancock, 1915); *C. fossulatus* Bolívar, 1887; *C. hancockus* Shishodia et Varshney, 1987; *C. indicus* Hancock, 1912; *C. korbensis* Gupta et Chandra, 2017; *C. lohitisensis* Shishodia, 1991; *C. retractus* Hancock, 1915; *C. testaceus* Bolívar, 1887; *C. tricarinatus* Shishodia, 1991; and *C. tuberculatus* Bolívar, 1887) by vertex wider than an eye.

Table 2. Diagnostic comparison of the new *Hyboella* species with its winged congeners that lack lateral paranotal spines.

Species	Vertex width vs. eye	Pronotum length	Anterior half of median carina	Posterior half median carina	Prozonal carinae	Hind wings
<i>H. aberrans</i>	wider	brachy	weakly arched	flat and tuberculated	weakly converging	slightly abbreviated
<i>H. angulifrons</i>	wider	pauro	weakly arched	flat and tuberculated	converging	developed
<i>H. brevipennis</i>	equal	brachy	arched and undulated	flat and tuberculated	converging	abbreviated
<i>H. guangxiensis</i>	wider	brachy	arched and undulated	flat and tuberculated	weakly converging	developed
<i>H. guizhouensis</i>	equal	brachy	weakly arched	weakly arched and then flat	subparallel	slightly abbreviated
<i>H. heteroptera</i>	wider	brachy	flat to weakly arched	flat	weakly converging	slightly abbreviated
<i>H. interrupta</i>	equal	brachy	slightly arched and slightly undulated	flat and tuberculated	parallel	slightly abbreviated
<i>H. jinxiensis</i>	equal	brachy	weakly arched	flat	converging	slightly abbreviated
<i>H. jiuwanshanensis</i>	equal	macro	weakly arched and slightly undulated	flat and tuberculated	converging	developed
<i>H. longinota</i>	wider	pauro	weakly arched and undulated	flat and tuberculated	weakly converging	developed
<i>H. longipennis</i>	wider	macro	weakly arched	flat	converging	developed
<i>H. nigrimaculata</i>	wider	brachy	arched	flat	converging	abbreviated
<i>H. obesa</i>	wider	brachy	arched	flat	converging	developed
<i>H. puerensis</i>	slightly wider	brachy	flat	flat	converging	slightly abbreviated
<i>H. rampuriana</i> sp. nov.	wider	brachy	weakly arched	flat and tuberculated	weakly converging	slightly abbreviated
<i>H. strictovertex</i>	slightly narrower	brachy	arched and slightly undulated	weakly undulated and then flat	subparallel	developed
<i>H. tuberdoralis</i>	narrower	brachy	arched	flat and tuberculated	converging	abbreviated
<i>H. undatifemura</i>	equal	brachy	arched	flat and tuberculated	converging	slightly abbreviated
<i>H. yunnana</i>	wider	brachy	arched and slightly undulated	flat and tuberculated	converging	slightly abbreviated

Table 3. Robustness ratios calculated for all *Hyboella* species. First is the ratio of humeral width and anterior width of prozonal carinae; second is the ratio of humeral width and mid width between the prozonal carinae; and third ratio represents ratio between humeral width and the posterior prozonal width. (see Fig. 1 for visual representation of measurements).

Species	Ratio 1	Ratio 2	Ratio 3
<i>H. aberrans</i>	2.95	3.63	3.75
<i>H. angulifrons</i>	3.05	3.53	4.72
<i>H. brevipennis</i>	2.76	3.40	5.06
<i>H. dilatata</i>	2.97	3.49	4.20
<i>H. guangxiensis</i>	2.66	3.49	5.08
<i>H. guizhouensis</i>	2.88	2.95	2.88
<i>H. handschini</i> comb. nov.	2.87	3.57	4.98
<i>H. heinrichi</i>	2.16	2.37	3.33
<i>H. heteroptera</i>	2.31	2.55	3.33
<i>H. interrupta</i>	2.89	2.89	2.89
<i>H. jinxiensis</i>	2.42	2.69	7.80
<i>H. jiuwanshanensis</i>	3.05	3.49	4.59
<i>H. keyensis</i>	2.67	3.06	3.82
<i>H. longinota</i>	3.40	4.02	3.95
<i>H. longipennis</i>	2.87	3.21	4.15
<i>H. nigrimaculata</i>	2.04	3.31	10.63
<i>H. nullipennis</i>	2.68	2.76	3.64
<i>H. obesa</i>	3.25	3.89	4.52
<i>H. overbecki</i>	2.46	2.85	4.43
<i>H. perakensis</i>	2.94	3.63	4.84
<i>H. puerensis</i>	2.17	2.50	3.01
<i>H. rampuriana</i> sp. nov.	2.72	3.42	3.67
<i>H. similis</i>	?	?	?
<i>H. strictvertex</i>	2.77	2.88	2.91
<i>H. sumatrensis</i>	2.81	3.36	4.27
<i>H. tentata</i>	3.39	3.84	5.07
<i>H. tuberdoralis</i>	2.48	2.71	4.00
<i>H. tumida</i>	2.71	3.29	4.43
<i>H. undatifemura</i>	2.63	3.05	5.26
<i>H. yunnana</i>	2.91	3.48	6.26

The only species in the region with much wider vertex is *C. latifrons* Brunner von Wattenwyl, 1893 from Myanmar, which is wrongly placed in the genus *Coptotettix* and is likely a member of *Epitettix* Hancock, 1907 or *Yunnantettix* Zheng, 1995. *Hyboella rampuriana* **sp. nov.** is easily distinguished from *C. latifrons* by many traits, but at first already by the presence of the wings (absent in *C. latifrons*). *Hyboella rampuriana* **sp. nov.** is clearly differentiated from *C. conspersus* Hancock, 1915; *C. diyalensis* Ingrisch et Garai, 2001, and *C. problematicus* Bolívar, 1909 by lower placement of the antennal grooves. *Hyboella rampuriana* **sp. nov.** can be separated from *C. magedhensis* Gupta & Chandra, 2017 by (i) interrupted median carina (continuous in *C. magedhensis*); and (ii) wider lateral and infrascapular areas.

Description. — **Male** (Holotype, Fig. 3). Body length: 10.57 mm.

Head. *In the dorsal view.* Surface of the vertex rough and tuberculated. Vertex 1.45× wider than a compound eye between the eyes. Vertex at the base of the eyes more than twice the width of an eye; narrowing anteriorly; wider than the width of an eye at its apex. Anterior margin of the fastigium rounded, not projected before the compound eyes. Medial carina slightly protruding in front of the anterior margins of eyes. Medial carina evident in more than half of the vertex length. Transverse and lateral carinae of the vertex forming a U-shape. Fossula deep, oval, and present in the anterior half of the vertex. Eyes oval in shape. Occipital area narrow.

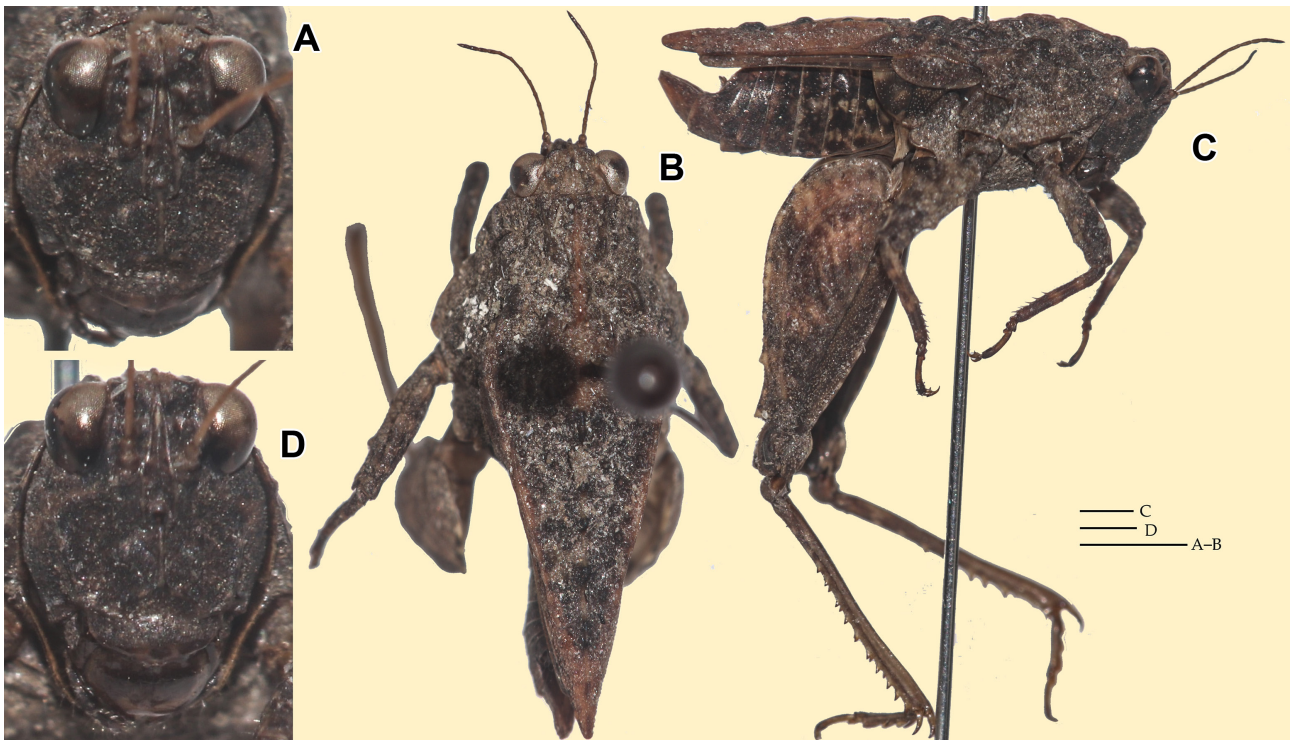


Figure 3. *Hyboella rampuriana* sp. nov. from Rampur, Nepal, male holotype. **A, D.** Head in frontal view; **B.** Habitus in dorsal view; **C.** Habitus in lateral view. Scale bar = 1 mm.

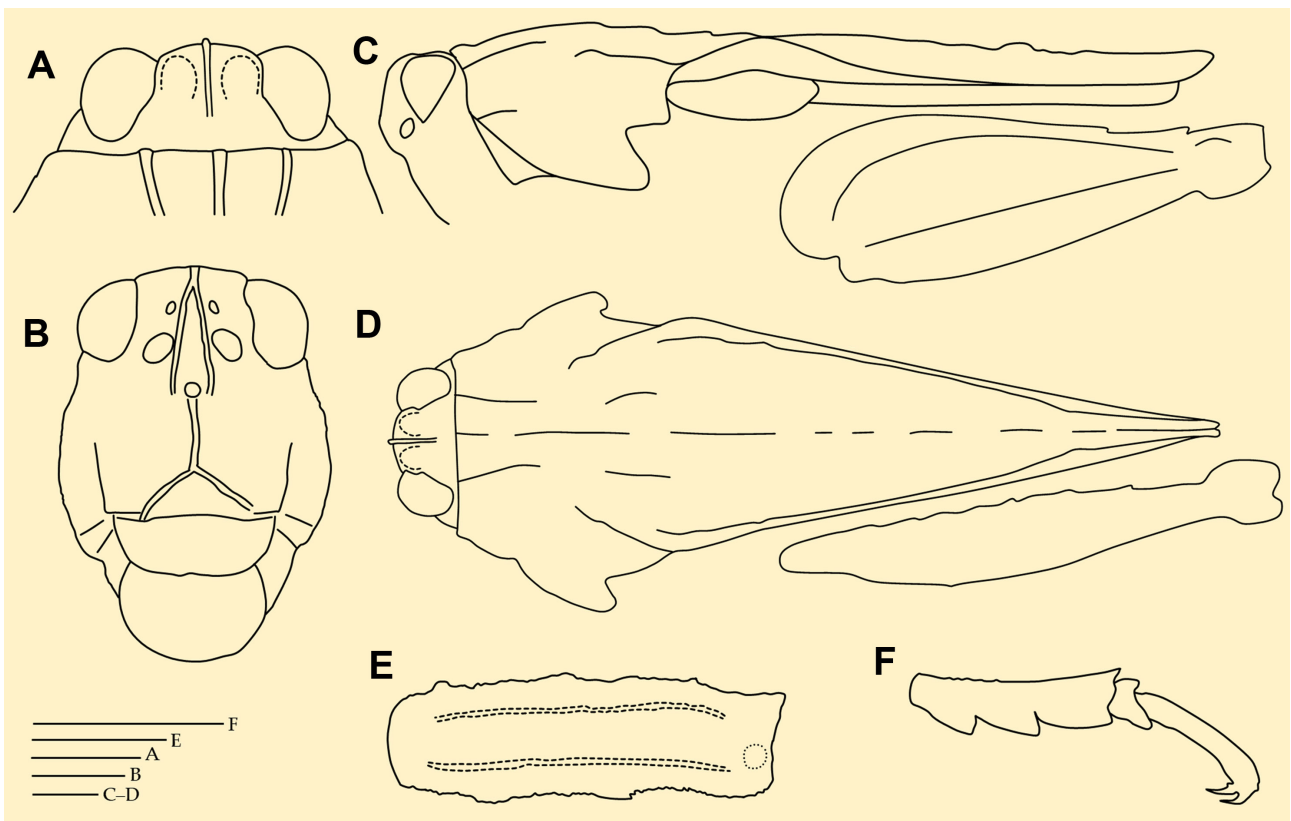


Figure 4. *Hyboella rampuriana* sp. nov. female paratype. **A.** Head in dorsal view; **B.** Head in frontal view; **C.** Habitus in lateral view; **D.** Habitus in dorsal view; **E.** Mid femur in lateral view; **F.** Hind tarsus in lateral view. Scale bar = 1 mm.

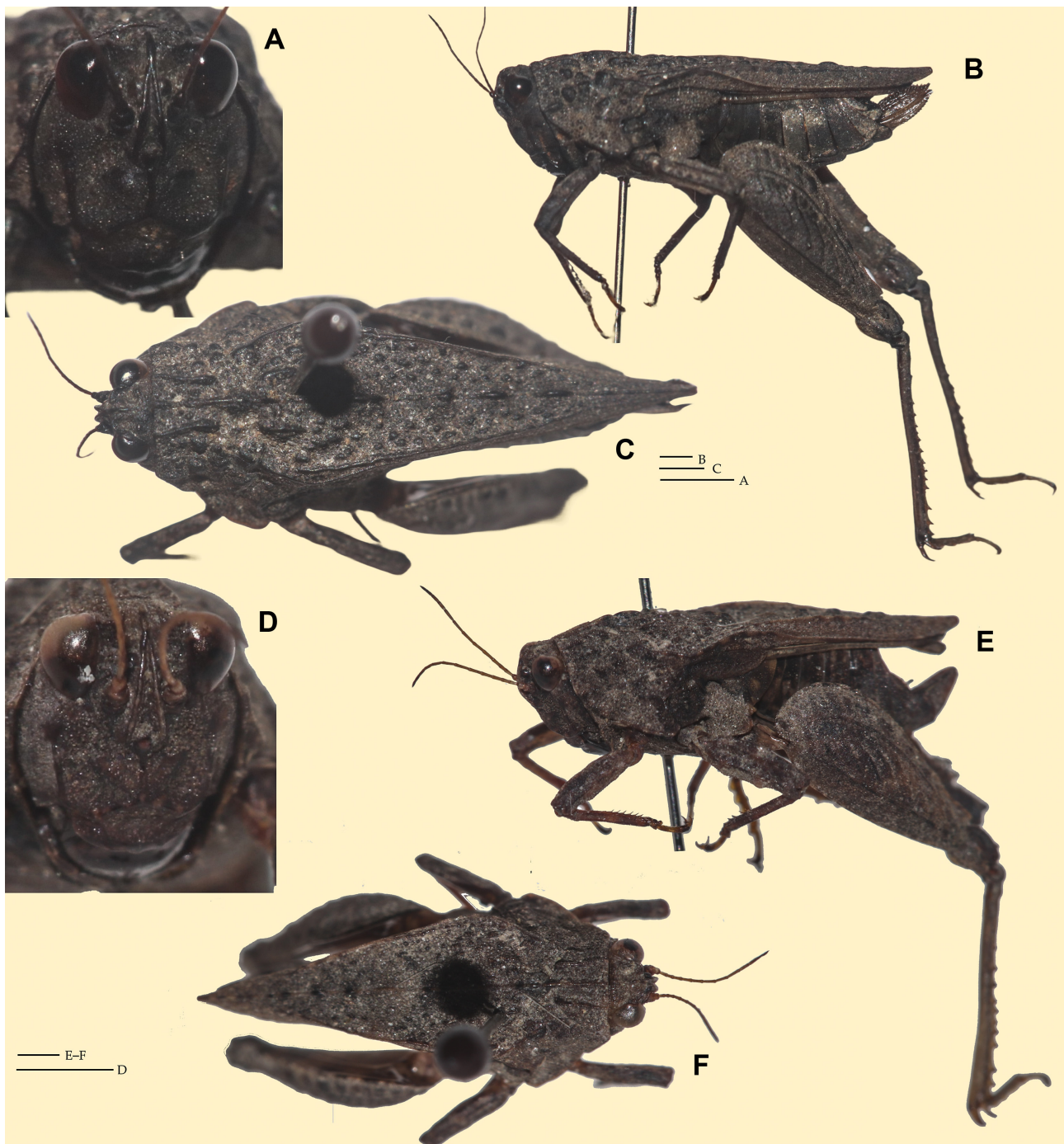


Figure 5. *Hyboella rampuriana* sp. nov. from Rampur, Nepal. (A–C) paratype female; (D–F) paratype male. **A.** Head in frontal view; **B.** Habitus in lateral view; **C.** Habitus in dorsal view; **D.** Habitus in frontal view; **E.** Habitus in lateral view; **F.** Habitus in dorsal view. Scale bar = 1 mm.

In the frontal view. Vertex slightly projected above the eyes, with the part where medial and frontal carinae meet being the highest and areas close to eyes are lowest. Frontal costa bifurcates in the upper quarter of a compound eye height. Facial carinae progressively widen up to the medial ocellus. Scutellum slightly wider than scape in its widest part. Superior (lateral or paired) ocelli placed just between the compound eyes. Upper margins of antennal grooves placed above the ventral margins of eyes, lower margins of antennal grooves below the ventral margins of eyes. *In the lateral view.* Vertex visible above eyes. Medial carina and frontal costa forming rounded-right angle. Facial carinae protrude convexly in front of eyes. Head not protruding above the surface of the pronotum. Caudal margins of eyes slightly shy of the anterior margin of pronotum. Lateral carinae slightly elevated.

Antenna. Filiform. Composed of 13 antennomeres (scape, pedicel and 11 flagellar antennomeres). Mid antennomeres around 6× as long as wide. One antenna as long as the length between the anterior margin of head and the tip of the lateral lobe of the pronotum.

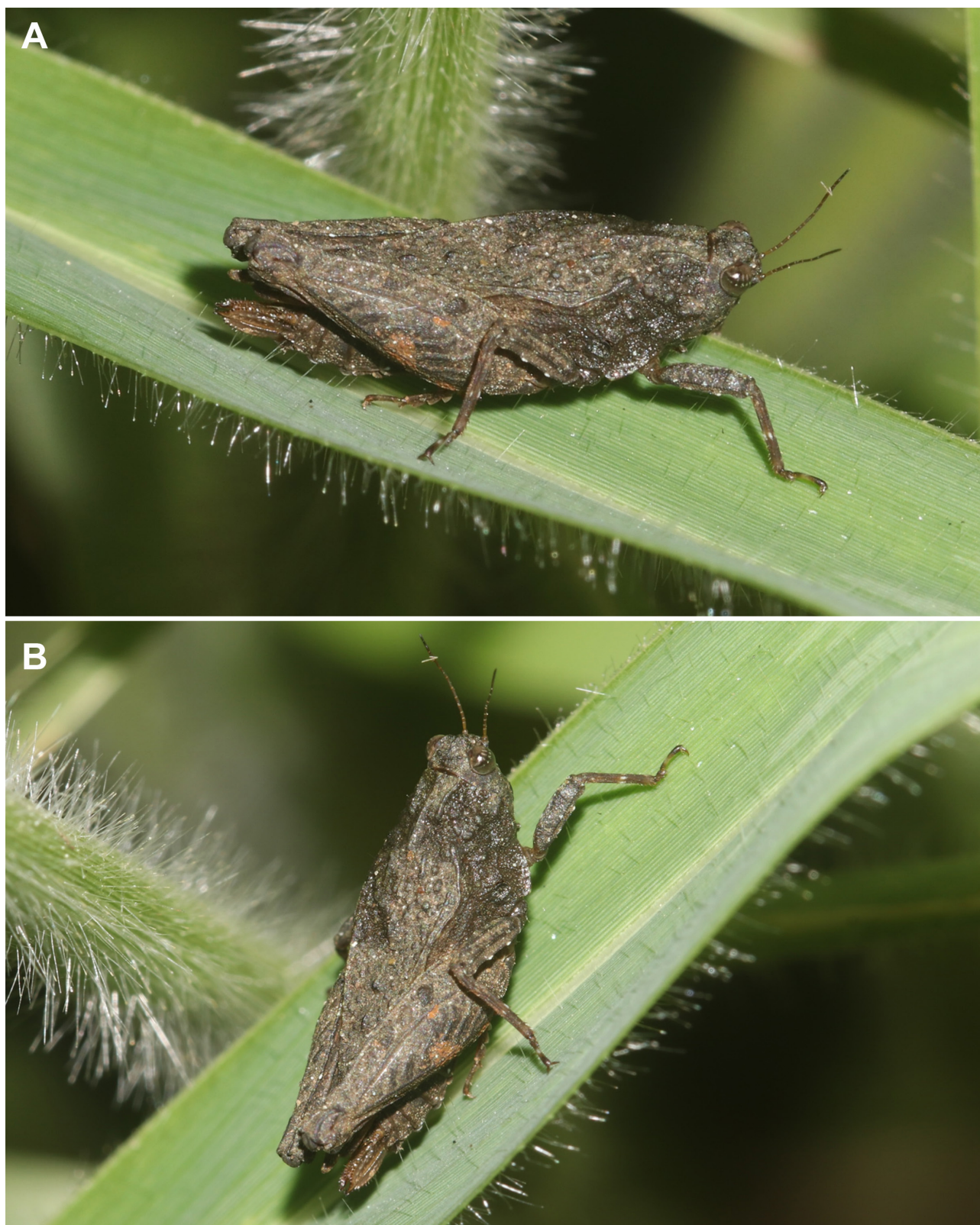


Figure 6. *Hyboella rampuriana* sp. nov., paratype female, standing on grass in its natural habitat at the type locality (Rampur, Nepal).

Pronotum. Stout and brachypronotal species with tuberculated pronotum, tip of the pronotum not exceeding hind knees. *In the dorsal view.* Anterior margin of pronotum truncated. Median carina interrupted in intervals, reaching the apex of the pronotum. Surface rough; covered with small nodules and larger tubercles and nodules. Prozonal carinae sub-parallel to slightly convergent caudad, distinctly elevated. Humero-apical carina distinctly visible, forming with external lateral carina weakly projected rounded humeral angles (shoulders). Interhumeral carina visible and as long as an eye. Pronotum widest at humeral angles, progressively converging caudad. Lateral lobes bluntly rounded, directed downwards, and contiguous to the body. Spines on the lateral lobes absent. Lateral area of the pronotum narrow and moderately convergent. Apex of pronotum blunt. *In the lateral view.* Median carina elevated up to transition between prozona and metazona, briefly decreasing before elevating halfway and progressively decreasing caudad; flat at the posterior end. Prozona strongly tuberculated. Prozonal carina clearly visible, long. Extralateral carina visible, short. Lateral area progressively widening caudally. Apex of lateral lobe subrectangular. Infrascapular area subrectangular, widest at the middle. Ventral and tegminal sinus evident, right-angled. *In the frontal view.* Pronotum with flat discus, with a visibly elevated anterior part around the median carina. Shoulders and paranota forming right-rounded angle. Lateral lobes of paranota directed sidewards.

Wings. Wings present. Tegmina (forewings) oval, entirely visible. Alae (hindwings) terminate proximal to the apex of the pronotum.

Legs. *Forelegs:* Femur robust. Dorsal margin of femur slightly convex; anterior fourth of ventral margin concave, posterior fourth widened, with blunt serrations. Tibiae smooth, ventral margin with numerous spines. *Mid legs:* Femur robust, widest at the middle. Dorsal margin of femur slightly convex; ventral margin undulating. Tibiae smooth, with spines along the ventral margins. *Hind legs:* Femur smooth. Median external area with a series of parallel transversal ridges. Antegenicular teeth moderately sized, triangular with blunt tip. Genicular teeth moderately sized, subtriangular. Tibiae smooth with several small spines. First tarsal segment longer than the third. Pulvilli triangular, acute; the distal pulvillus longer than the two similarly sized proximal pulvilli.

Measurements. See Table 4.

Table 4. Measurements of the holotype (HT) and the two paratypes (PT) of *Hyboella rampuriana* sp. nov. All measurements are in millimeters.

Body parts	HT (♂)	PT1 (♀)	PT2 (♂)
Body length	10.57	13.27	10.64
Vertex width	0.83	1.12	0.87
Eye width	0.56	0.74	0.59
Scutellum width	0.27	0.36	0.27
Pronotum length	8.71	10.69	10.18
Pronotum lobe width	4.05	5.02	4.81
Pronotum height	2.36	3.40	3.19
Tegmen length	1.68	2.38	2.14
Tegmen width	0.62	0.88	0.64
Alae length	5.15	8.20	6.25
Fore femur length	2.20	2.69	2.45
Fore femur width	0.62	0.75	0.68
Mid femur length	2.63	2.79	2.93
Mid femur width	0.67	0.77	1.01
Hind femur length	6.29	8.27	6.58
Hind femur width	2.44	2.86	2.57
Hind tibia length (without apical spur)	5.39	6.29	6.00
Hind basal tarsal segment length	0.99	1.24	1.02
Hind apical tarsal segment length (without claws)	0.61	0.92	0.70
Subgenital plate length	1.13	–	1.30
Subgenital plate width	0.41	–	0.46
Ovipositor dorsal valve length	–	1.70	–
Ovipositor dorsal valve width	–	0.54	–
Ovipositor ventral valve length	–	1.87	–
Ovipositor ventral valve width	–	0.27	–

Sexual dimorphism. Females larger than males (see measurements). Mid femur more robust in male; Female: ovipositor valves widened and serrated, with pointed apex. Male: subgenital plate widened; curving upwards, with blunt apex.

Distribution. Known only from the type locality (Fig. 2).

Habitat description. The habitat is a swamp dominated by subtropical grasses with scarce trees (Fig. 2). The region is completely flooded during the monsoon season. A paratype female in its natural habitat is shown in Fig. 6 and can also be viewed on YouTube.

Groundhoppers' assemblage in Rampur. Altogether, seven groundhopper species have been recorded at *H. rampuriana* sp. nov., type locality (Table 5).

Table 5. Checklist of Tetrigidae recorded in Rampur, with recorded abundance (1 means up to 10 specimens, and 2 means more than 10 specimens). *Euparatettix balteatus* (Walker, 1871) has been recorded in Nepal for the first time (iNaturalist observation).

Species	Abundance
Subfamily Criotettiginae	
<i>Acanthalobus curticornis</i> Hancock, 1915	1
<i>Acanthalobus inornatus</i> (Walker, 1871)	2
<i>Hyboella rampuriana</i> sp. nov.	1
<i>Thoradonta</i> sp.	2
Subfamily Tetriginae	
<i>Euparatettix balteatus</i> (Walker, 1871)	1
<i>Paratettix histricus</i> (Stål, 1861)	2
<i>Skejotettix muglingi</i> (Ingrisch, 2001)	1

DISCUSSION

The genus *Hyboella* currently comprises 30 species, including *H. rampuriana* sp. nov. (Cigliano et al. 2026, this study) and *H. handschini* comb. nov. This Himalayo-Oriental genus has no widely distributed species, but all appear to be endemic to relatively small geographical areas (Blackith 1992, Storozhenko 2022, Cigliano et al. 2026). Many additional species are expected to be discovered in the future. It is, however, not completely clear which characters, apart from the generally robust shape, separate *Hyboella* from *Acanthalobus* Hancock, 1904, and whether also some of the species currently assigned to *Coptotettix* Bolívar, 1887 may instead belong to *Hyboella*. Some *Hyboella* species from PR China may prove to be synonymous, but we refrain from taking any formal taxonomic action until additional material is examined and molecular phylogenetic analyses are conducted. A comprehensive revision of these genera, incorporating both morphological and genetic data, will be necessary to ensure a classification that reflects their evolutionary relationships. Genus *Coptotettix* is without subfamily placement, while *Acanthalobus* and *Hyboella* belong to Criotettiginae, indicating that similarities between the two might not be due to convergent evolution, but rather due to common ancestry. The genus *Coptotettix* is proven to be polyphyletic (Neo et al. 2025) and requires a comprehensive revision. Current evidence suggests the genus is a mixed group, where some species probably belong to Criotettiginae (Devriese et al. 2023) and some to Tetriginae (Zheng et al. 2012; Jiang et al. 2014; Subedi 2022). The fact that members of this genus belong to both subfamilies was already assumed, by frequently moving certain species between *Hyboella* and *Coptotettix* (Tumbrinck 2015; Subedi et al. 2024) and from *Coptotettix* to *Hyboella* (Hancock 1915; Günther 1939).

In Tetrigidae taxonomy, "robustness" is a standard diagnostic term used to differentiate taxa (e.g., Rehn & Grant 1955; Perez-Gelabert 2009) but has rarely been numerically illustrated. Traditionally, this is calculated as the ratio of the pronotal width between the lateral lobes to the total pronotal length (e.g., Shishodia & Hazra 1984; Tumbrinck 2018). However, this method often fails to accurately represent the insect's build because lateral spines or the highly variable shape of the anterior margin,

which ranges from concave to significantly protruded (Subedi et al. 2025), can skew the data. In the Thoradontini, for instance, the degree of outward curvature and spine development can vary significantly (Muhammad et al. 2018)—as exemplified by the morphological variability of the lateral lobes in *Thoradonta varispina* (Zha et al. 2016) and *Aryalidonta rochaki* (Subedi et al. 2024). To provide a more stable metric, we introduce robustness as the ratio of the humeral width to the width of the prozonal carinae, which occupy a fixed and reliable position across species. By measuring the prozonal carinae at three points, the anterior margin, the midpoint, and the posterior end (Fig. 1), we can also explicitly define their shape: converging (anterior > mid > posterior), diverging (anterior < mid < posterior), or parallel (anterior = mid = posterior). In some species, such as *H. guizhouensis* (Table 3), the carinae are concave or inwardly curved when the midpoint is narrower than the ends. This measurement system will be particularly useful for future revisions of the Criotettiginae, where variable lateral spines and anterior slopes often complicate traditional measurements, such as the diagnostic separation between the robust pronotum of *Acanthalobus* Hancock, 1904, and the slender pronotum of *Criotettix* Bolívar, 1887 (Subedi et al. 2025).

AUTHOR'S CONTRIBUTION

The authors confirm their contribution to the paper as follows: The authors confirm their contribution to the paper as follows: MS: Fieldwork, Formal Analysis, Investigation, Methodology, Validation, Visualization, Writing – Original Draft, and Writing – Review & Editing; JS: Formal Analysis, Investigation, Methodology, Validation, Visualization, Writing – Original Draft, and Writing – Review & Editing. The authors read and approved the final version of the manuscript. The authors read and approved the final version of the manuscript.

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AVAILABILITY OF DATA AND MATERIAL

The specimens listed in this study are deposited at the Annapurna Natural History Museum, Pokhara, Kaski, Nepal (ANHM) and the Insect Collection of the Agriculture Science Center, Ghyalchok, Gorkha, Nepal (ICAG) and are available from the curator upon request.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

This study only included arthropod material, and all required ethical guidelines for the treatment and use of animals were strictly adhered to in accordance with international, national, and institutional regulations. No human participants were involved in any studies conducted by the authors for this article.

CONSENT FOR PUBLICATION

Not applicable.

CONFLICT OF INTERESTS

The authors declare that there is no conflict of interest regarding the publication of this paper.

GENERATIVE AI STATEMENT

ChatGPT was used for grammar and syntax corrections.

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گونه جدید ملخ‌های کوتوله، به نام *Hyboella rampuriana* sp. nov. (Orthoptera: Tetrigidae) از نپال (Criotettiginae)

مدان سویدی^۱، جوزف اسکيجو^۲

۱ مرکز علوم کشاورزی، مدیریت تحقیقات و توسعه، دانشگاه کشاورزی و جنگلداری، غیالچوک، گورخا، نپال.
۲ آزمایشگاه مطالعات فرگشتی، گروه زیست‌شناسی، دانشکده علوم، دانشگاه زاگرب، کرواسی

نویسنده مسئول: مدان سویدی | [✉ madansubedi13@gmail.com](mailto:madansubedi13@gmail.com)

چکیده: یک گونه جدید از ملخ‌های کوتوله (Orthoptera: Tetrigidae) متعلق به جنس *Hyboella* Hancock, 1915 در دشت‌های چیتوان، نپال کشف شد. ملخ کوتوله رامپور، *H. rampuriana* sp. nov.، به طور دقیق بر اساس خصوصیات ریخت‌شناسی توصیف و تصاویر آن ارائه شد. مانند سایر گونه‌های جنس *Hyboella*، این گونه جدید دارای فرق سر عریض، با کاریناهای U شکل، پیش‌گرده با برآمدگی در بخش جلویی و با بافت زبر، و کاریناهای پروزونا که به جلو واگرا شده‌اند، است، اما برخلاف اکثر دیگر گونه‌های این جنس، فاقد خارهای جانبی است، بالدار بوده و کاریناهای پروزونا در مقایسه با خویشاوندانش کشیده‌تر هستند. یک گونه از جنس *Criotettix* Bolívar, 1887 به جنس *Hyboella* منتقل شده و ترکیب جدید به نام *H. handschini* (Günther, 1937) **comb. nov.** پیشنهاد شد. گونه *Euparatettix balteatus* (Walker, 1871) نیز در همان محل جمع‌آوری گونه جدید یافت شده و برای اولین بار از نپال ثبت می‌شود.

ویراستار علمی

Sergey Yu Storozhenko

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واژگان کلیدی: چیتوان، *Coptotettix*، *Euparatettix balteatus*، تری داخلی، ملخ‌های کوتوله، نسبت استحکام،