



WASPS (HYMENOPTERA: VESPIDAE AND BRADYNOBAENIDAE) FROM QUETTA, BALOCHISTAN (PAKISTAN)

Saima Durrani*, Imtiaz Ali Khan**, Muhammad Ather Rafi***, Gul Makai*, Muhammad Qasim****, Fariha Mengal*, Muhammad Kamal Sheikh****, Ghulam Rasul****, Gulnaz Parveen***** and Quderat Ullah*****

*Department of Zoology, Sardar Bahadur Khan Women University, Quetta.

**University of Swabi, Khyber-Pakhtunkhwa

***Department of Zoology, Women University Swabi, Khyber-Pakhtunkhwa.

****Department of Entomology, Faculty of Agriculture, University of the Poonch, Rawalakot, Azad Jammu and Kashmir.

*****Planning and Development Division, Pakistan Agricultural Research Council, Islamabad.

*****Department of Botany, Women University, Swabi, Khyber-Pakhtunkhwa

*****Department of Zoology, University of Peshawar, Peshawar

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Author's contribution

S.D, G.M, I.A.K design the study S.D, collected the samples F.M, M.A.R, M.Q identified the specimens M.K.S, M.A.R helped review literature G.R designed the manuscript Q.U complied the whole data, G.P, M.A.R finalized the manuscript.

Key words:

Wasp, Bradynobaenidae, *Macroocula*, Vespidae, Quetta, Balochistan

ABSTRACT

This study revealed the wasps of family Bradynobaenidae and Vespidae, which were collected from different localities of Quetta and its vicinities and previously reported in literature. As a whole 28 species under 17 genera belonging to two families namely, Bradynobaenidae and Vespidae were identified. Family Bradynobaenidae along with its genus *Macroocula* and its two species, namely *Macroocula morawitzi* (Radoszkowski, 1888) and *Macroocula savignyi* (Klug, 1829) are reported first time from Balochistan. Family Vespidae represented 26 species under 16 genera. Out of 26 species, One species belonging to subfamily Masarinae, 21 species of subfamily Eumeninae, two species of subfamily Polistinae and two species of subfamily Vespinae. While two species *Polistes indicus* Stofla, 1934 and *Polistes wattii* Cameron, 1900 are recorded first time from Balochistan.

1. INTRODUCTION

Wasps have important role in ecosystem as a biological control agents, effective pests, scavengers and pollinators [5] [6]. For environmental conditions wasps are considered as bio-indicators [7]. Social wasps are mostly abundant in both temperate and tropic regions. They are highly active during spring to early fall. The number of stinging events reaches to its peak in August [8]. In this paper aculeatus wasps of two families under super family Vespoidea namely Bradynobaenidae de Saussure, 1892 and Vespidae Latreille, 1802 are reported from Quetta and its vicinity. Bradynobaenidae is a widespread family mostly tropical, absent from Australian region

and containing more than 188 species under 10 genera in four subfamilies: Apterogyninae, Bradynobaeninae, Chyphotinae and Typhoctinae [1] [4], while Vespidae is a largest, cosmopolitan and diverse family consists of more than 5000 species worldwide. This family is classified into six subfamilies, i.e. Eumeninae, Euparagiinae, Polistinae, Masarinae, Vespinae and Stenogastrinae [2] [3]. In this paper aculeatus wasps of family Bradynobaenidae and Vespidae are reported which were collected from Quetta and its vicinities.

2. MATERIALS AND METHODS

Wasps were collected from different localities of Quetta city and its vicinities namely, Shabaz Park,

Corresponding Author: a_rafiam@yahoo.com

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Agricultural Research Institute (ARI), Alama Iqbal Open University (AIU) Campus, Chiltan National Park, Balochistan Agriculture Research and Development Centre (BARDC), Eastern Bypass. Specimens were identified up to species level with the help of available literature and also compare with housed specimens at National Insect Museum (NIM), National Agriculture Research Center (NARC), and Islamabad. However, this paper is also assembled with available data in literature on both families.

3. RESULTS AND DISCUSSION

Order Hymenoptera

Suborder: Apocrita

Infraorder: Aculeata

Superfamily Vespoidea Latreille 1802

Family: Bradynobaenidae de Saussure, 1892

The wasps of family Bradynobaenidae are poorly known. Only two species of subfamily Apterogyninae namely, *Macroocula savignyi* (Klug, 1829) and *Macroocula morawitzi* (Radoszkowski, 1888) under genus *Macroocula* Panfilov 1954, have been reported from Pakistan [21]. Wasps of family Bradynobaenid are Afrotropical.

Subfamily: Apterogyninae

Genus: *Macroocula* Panfilov, 1954

Macroocula morawitzi (Radoszkowski, 1888)

Remarks: This species was reported by Invrea (1936) from Pakistan [22]. However, members of this family belong to Afrotropical region and it is assumed that this species is beloned to Balochistan: Quetta. However, during study specimen of this species was not found.

Macroocula savignyi (Klug, 1829)

Material examined: Pakistan: Balochistan: Quetta: BARDC, 17.viii.2015, Leg. S. Durrani (Ex. NIM).

Remarks: This species is reported first time from Balochistan: Quetta. Earlier this species reported from Pakistan without mentioned any locality [23]. .

Family: Vespidae Latreille, 1802

Wasps of sub-families Eumeninae, Polistinae and Vespinae under Vespidae have been well study by various authors from Pakistan except wasps of Balochistan which are poorly explored. Wasps of

reaming subfamilies other than Eumeninae, Polistinae of family Vespinae like Euparagiinae, Masarinae and Stenogastrinae do not contribute significance share in the fauna of Pakistan, however, reported species of these family are also included in this paper. Recently more than 105 species of family Vespidae have been reported throughout Pakistan [15] [24].

Subfamily: Eumeninae

Genus: *Allodynerus* Blüthgen, 1938

Allodynerus dignotus (Morawitz, 1895)

Remarks: Earlier reported from Balochistan: Quetta: Chiltan National Park [9]. However, during study specimen of this species was not found.

Genus: *Antepipona* de Saussure, 1855

Antepipona laevigata (Blüthgen, 1951)

Remarks: Already reported this species (as *Antepipona varentzowi*, a misidentification; see Gusenleitner 1986) from Balochistan: Quetta [28] [29]. However, during study specimen of this species was not found.

Antepipona vescovilis Giordani Soika, 1970

Remarks: Already reported this species from Balochistan: Quetta: Chiltan National Park [9]. However, during study specimen of this species was not found.

Genus: *Chlorodynerus* Blüthgen, 1951

Chlorodynerus loeffleri Giordani Soika 1958

Remarks: This species was already recorded from Balochistan: Quetta and Sindh: Karachi [28]. However, during study specimen of this species was not found.

Genus: *Cyrtolabulus* van der Vecht, 1969

Cyrtolabulus syriacus (Giordani Soika, 1968)

Remarks: Earlier reported this species from Balochistan: Quetta: Chiltan National Park and Sindh: Jamshoro: Kirthar National Park [9]. However, during study specimen of this species was not found.

Genus: *Delta* de Saussure, 1885

***Delta dimidiatipenne* de Saussure, 1852**

Material examined: Pakistan: Balochistan: Quetta: Eastern Bypass, 04.v.2016, 20.v.2016, Leg. S. Durrani; AIOU Campus, 20.iv.2015, Leg. S. Durrani; BARDC, 28.iv.2015, Leg. S. Durrani. (Ex. NIM).

Remarks: Earlier reported this species from Balochistan: Quetta, Noshkey, Chiltan National Park; Federal Capital area: Islamabad; Khyber-Pakhtunkhwa: Mingora, Mansehra, Abbottabad, Balakot, Battagram, Upper and Lower Dir, Peshawar; Punjab: Multan, Chakwal, Attock, Gujrat, Gujranwala, Jhelum, Murree, Jhang, Faisalabad; Azad Jammu and Kashmir: Bagh, Banjosa, Rawalakot; Gilgit-Baltistan: Ghizer, Astore, Sukkur, Doyan and Hunza [9] [10] [11] [12] [13] [14] [15] [25] [26].

***Delta esuriensesuriens* (Fabricius, 1787)**

Material examined: Pakistan: Balochistan: Quetta: Eastern Bypass, 04.v.2016, Leg. S. Durrani; AIOU Campus, 20.iv.2015, Leg. S. Durrani; Chiltan National Park Hazar Ghanji, 24.iv.2015, Leg. S. Durrani (Ex. NIM).

Remarks: This species was already reported from Balochistan: Quetta; Federal Capital area: Islamabad; Punjab: Rawalpindi, Attock, Bakhar, Muzafargarh, Layyah, Mianwali, Khanpur, and Head Fareed; Khyber-Pakhtunkhwa: Dir, Mansehra, Balakot, Abbottabad, Swat; Azad Jammu and Kashmir: Kotli and Kohala [9] [10] [11] [12] [13] [15].

Genus: *Eumenes* Latreille, 1802

***Eumenes m.mediterraneus* Kriechbaumer, 1879**

Remarks: Previously reported this species from Balochistan: Quetta: Chiltan National Park [9]. However, during study specimen of this species was not found.

***Eumenes mediterraneusquettaensis* Cameron, 1907**

Remarks: This species was earlier described from Balochistan: Quetta [30]. However, during present study specimen of this species was not found.

Genus: *Euodynerus* Dalla Torre, 1904

***Euodynerus* (*Euodynerus*) *disconotatusulfuripes* (Morawitz, 1885)**

Remarks: Earlier this species have been reported from Balochistan: Quetta [9]. This species was also reported from Gilgit-Baltistan: Jaglot and Karakorum [19]. However, during present study specimen of this species was not found.

Genus: *Eustenancistrocerus* Bluthgen, 1938

***Eustenancistrocerus* (E.) *a.askhabadensis* (Radoszkowski, 1886)**

Synonyms: *Odynerusleucospilus* (Cameron, 1907); *Odynerusquettaensis* (Cameron, 1907)

Remarks: Earlier reported from Balochistan: Quetta, [30]. However, during present study specimen of this species was not found.

***Eustenancistrocerus* (E.) *inconstans* (de Saussure, 1863)**

Remarks: Previously, this species was reported from Balochistan: Quetta [9]. However, during present study specimen of this species was not found.

***Eustenancistrocerus* (*Parastenancistrocerus*) *a. amadanensis* (de Saussure, 1855)**

Remarks: Previously, this species was reported from Balochistan: Quetta (Chiltan National Park) [9]. However, during present study specimen of this species was not found.

***Eustenancistrocerus* (P.) *baluchistanensis* (Cameron, 1907)**

Remarks: This species was already reported from Balochistan: Quetta [30]. However, during present study specimen of this species was not found.

Genus: *Katamenes* Meade-Waldo, 1910

***Katamenes d.dimidiatus* (Brullé, 1932)**

Remarks: Already this species was reported from Balochistan: Quetta: Hazarganji, Chiltan National Park [9]. However, during present study specimen of this species was not found.

Subfamily: Polistinae

Genus: *Polistes* Latreille, 1802

***Katamenes dimidiatusmontanus* (Nurse, 1904)**

Remarks: This species was earlier reported from Balochistan: Quetta [31]. However, during present study specimen of this species was not found.

Genus: *Knemodynerus* Blüthgen, 1940

***Knemodynerus excellens* (Pérez, 1907)**

Remarks: Earlier reported this species from Balochistan: Quetta and Punjab: Multan [9]. However, during present study specimen of this species was not found.

Genus: *Leptochilus* de Saussure, 1853

***Leptochilus (Neoleptochilus) hina* (Dover, 1925)**

Remarks: This species was already reported from Balochistan: Quetta and Peshin [27]. However, during present study specimen of this species was not found.

***Leptochilus (Neoleptochilus) umerolatus* Gusenleitner, 2006**

Remarks: Earlier this species was reported from Balochistan: Quetta: Chiltan National Park [9]. However, during present study specimen of this species was not found.

Genus: *Stenodynerus* de Saussure, 1863

***Stenodynerus a.aequisculptus* (Kostylev, 1940)**

Remarks: Already reported this species from Balochistan: Quetta: Chiltan National Park [9]. However, during present study specimen of this species was not found.

***Stenodynerus trotzinai* (Morawitz, 1895)**

Species was not found. **Remarks:** Earlier reported from Balochistan: Quetta and Peshin [28] [9]. However, during present study specimen of this

Subfamily: Masarinae

Genus: *Celonites* Latreille, 1802

***Celonites nursei* Dover, 1925**

Remarks: This species was already reported from Balochistan: Quetta [27]. However, during present study specimen of this species was not found.

***Polistes indicus* Stolfa, 1934**

Material examined: Pakistan: Balochistan: Quetta: ARI, 19.v.2016, Leg. S. Durrani, 2♀; Chiltan National Park Hazar Ghanji, 27.vi.2015, Leg. S. Durrani; BARDC, 14.v.2015, Leg. S. Durrani (Ex. NIM).

Remarks: This is the first record of this species from Balochistan: Quetta. Earlier this species have been reported from Khyber-Pakhtunkhwa: Peshawar, Kohat, Abbottabad, Havelian, Mansehra, Baffa, Abad Khel, Oghi, Battagram, Dir, Barawal, Balakot, Alia and Ayubia; Gilgit-Baltistan: Thiee, Jaglot, Ghizar valley, Gilgit, Astore, Gasdas, Hunza and Chilas; Punjab: Jhelum, Chakwal, Rawalpindi, Attock, Bahawalpur, Chak 28 BC; Sindh: Sukkur, Ghotki, Allahyar Pinhwar, Taj Mohammad Ruk [11] [12] [13] [14] [15] [16] [18] [19] [26].

***Polistes wattii* Cameron, 1900**

Material examined: Pakistan: Balochistan: Quetta: Eastern Bypass, 13.iv.2016, Leg. S. Durrani; Shabaz Park, 16.iii.2015, Leg. S. Durrani; AIOU Campus, Leg. S. Durrani; Chiltan National Park Hazar Ghanji, 24.iii.2015, Leg. S. Durrani, BARDC, 27.v.2015, Leg. S. Durrani (Ex. NIM).

Remarks: This is the first record of this species from Balochistan: Quetta. Already this species was reported from Federal Capital area: Islamabad; Sindh: Karachi; Punjab: Murree, Rawalpindi, Multan, Khewra, Attock, Habib Massan, Taxila, Abbaspur, Bahawalpur (Chak 28 BC); Sindh: Ghotki, Sukkur, Rajab Ali Bharo, Drago, Allahyar Pinhwar; Khyber-Pakhtunkhwa: Dir, Warsak, Peshawar, Kohat, Mansehra, Abbottabad, Mardan; Gilgit-Baltistan: Hunza, Dassu, Chillas, Ghizer, Diamer, Gilgit, Basha, Skardu, Sukkur; Azad Jammu and Kashmir: Rawalakot and Mandhol [11] [12] [13] [14] [15] [16] [17] [19] [25] [26].

Subfamily: Vespinae

Genus: *Vespa* Linnaeus, 1758

***Vespa orientalis* Linnaeus, 1771**

Material examined: Pakistan: Balochistan: Quetta: Eastern Bypass, 27.iv.2016, 27.iv.2016, Leg. S. Durrani; Shabaz Park, 1.iv.2015, Leg. S. Durrani;

AIOU Campus, 20.iii.2015, Leg. S. Durrani; Chiltan National Park Hazar Ghanji, 24.vii.2015, Leg. S. Durrani; BARDC, 28.vi.2015, Leg. S. Durrani (Ex. NIM).

Remarks: Earlier reported from Balochistan: Quetta; Federal Capital area: Islamabad; Punjab: Murree, Chakwal, Rawalpindi, Attock, Multan, Fort Abbas; Khyber-Pakhtunkhwa: Bannu, Jamrud, Chitral, Peshawar, Chilas, Dir, Timergara, Barawal, Charsada, Havelian, Mansehra, Bamboret valley, Kohat, Warsak, Alai, Brun, Mardan, Abbottabad, Battagram, Balakot; Gilgit-Baltistan: Gilgit, Nomal, Jaglot, Chillas, Ghizar, Dassu, Astore; Azad Jammu and Kashmir: Rawalakot and Thorar [11] [12] [13] [14] [15] [16] [17] [18] [19] [25] [26].

Genus: *Vespula* Thomson, 1869

***Vespula ermanica* (Fabricius, 1793)**

Material examined: Pakistan: Balochistan: Quetta: Shabaz Park, 18.ix.2015, Leg. S. Durrani; University Campus, 16.v.2016, Leg. S. Durrani; BARDC, 28.iii.2015, Leg. S. Durrani (Ex. NIM).

Remarks: This species was already reported from Balochistan: Ziarat, Kalat; Khyber-Pakhtunkhwa: Ayubia, Mansehra, Balakot, Abbottabad, Baffa, Chitral, Dir, Swat and Kalam; Hunza, Gilgit-Baltistan: Daimer, Khuramabad, Chillas, Shish kot, Passu, Gulmit, Gulkin, Denor, Sost, Nagar, Skardu, Aliabad, Misger, Ghizer, Gilgit and Phander Lake [11] [12] [14] [15] [18] [20] [26].

4. CONCLUSION

During the study, 28 different species of wasps under 17 genera belong to 2 different wasps family: Bradynobaenidae and Vespidae were identified. Family Bradynobaenidae only represented the area of Baluchistan however, other species belong to the family of Vespidae found throughout the Pakistan. This result showed that the area of Baluchistan has rich fauna of different waspsfamilies. Further study are recommended to explore the new species in the area of Baluchistan.

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