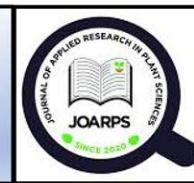




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Records of Orthoptera in Fauna of British India within present boundaries of Pakistan.

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Abstract

The current study aimed to compile comprehensive records of Orthoptera fauna with a focus on British India. For the first time, efforts were made to represent a record in a specific order for the areas falling under Pakistani jurisdiction. The British Indian fauna consists of 28 records from 12 different sub-families that are widely distributed in Pakistan. In addition, the current status of the species in these areas is described in this paper.

Keywords: *Orthoptera, Fauna of British India, Species*

Introduction

Insects belonging to the order Orthoptera include grasshoppers, locusts, and crickets, as well as insects that are closely related to these groups, such as katydids and bush crickets. Insects that belong to the suborder Caelifera include grasshoppers, locusts, and other closely related species. Insects that belong to the suborder Ensifera include crickets and other closely related species (Panhwar, 2018).

The bodies of orthopterans are typically cylindrical in shape, and their hind legs and musculature are lengthened and specialised for jumping. They have large compound eyes and mandibulate mouthparts that allow them to bite and chew their food. Depending on the species, they may or may not have ocelli in their eyes. The antennae are of a filiform kind, contain many joints, and vary in terms of their overall length (Rentz, 1978; Whitman, 2008).

The first and third segments of the thorax are significantly larger than the second section, which is somewhat more diminutive. They have two sets of wings, each of which, while at rest, are folded over and held overlapping the abdomen (Soomro & Wagan, 2005). The forewings, also known as tegmina, are more thin than the hindwings and are strengthened towards the base. In contrast, the hindwing is membranous and has both straight veins and a large number of cross-veins. When at rest, the hind wings are stored in a fan-like position underneath the forewings. The final two to three segments of the abdomen are reduced in size and feature cerci that only have one segment (Suhail *et al.*, 2001; Ali & Panhwar, 2017).

Any nation can benefit from maintaining an accurate inventory of its insect population since doing so raises awareness of the beneficial and dangerous species of insects that coexist in a given ecosystem and enables better management of these organisms. It was necessary to separate the material belonging to what is now Pakistan because it had never been mentioned as a separate list. As a result, this is the first attempt to provide an elucidated checklist based on the series Fauna of British India, which was published during an era of British rule in India during the 18th century and till mid of 19th Century. Since the series consisted of material belonging to what is now Pakistan, it was necessary to separate the material in order to determine what insects lived in what is now Pakistan.

Materials and methods

For present studies Kirby (1914) Fauna of British India was studied. Several techniques, including google maps and others, were utilised to divide the current Pakistani localities (Map 1). The inventory is organised, and each species is listed under the genera that are described in the British Indian Fauna. The Orthoptera Species File online (OSF) provides the current status of each listed species. The world's Orthoptera (grasshoppers, katydids, crickets, and allied insects) are catalogued in the Orthoptera Species File, a taxonomic database. It includes 48,110 scientific names, 236,700 citations to 15,800 references, 110,000 photos, 2000 sound recordings, and 109,300 specimen records in addition to full taxonomic and synonymic information for over 29,400 legitimate species uptodate (Cigliano *et al.*, 2023).



Map.1 Showing current boundaries of Pakistan

Results

There were a total of 28 records found within 12 different subfamilies for the order Orthoptera in the

fauna of British India. These records pertain to the area that is now Pakistan. The list is given as below

| Current Subfamily | Species in Fauna of British India | Locality | Current name in OSF |
|---|---|---------------------|---|
| Subfamily Oxyinae Brunner von Wattenwyl, 1893 | <i>Oxya vicina</i> Brunner von Wattenwyl, 1893 | Himalayas. | <i>Oxya vicina</i> Brunner von Wattenwyl, 1893 |
| | <i>Oxya velox</i> (Fabricius, 1787) | Kashmir : Baltistan | <i>Oxya velox</i> (Fabricius, 1787) |
| Subfamily Acridinae MacLeay, 1821 | <i>Acrida lugubris</i> Burr, 1902 | Kashmir : Hunza | <i>Acrida exaltata</i> (Walker, 1859) |
| Subfamily Hemicridinae Dirsh, 1956 | <i>Hieroglyphus citrinolimbatus</i> Brunner von Wattenwyl, 1893 | Himalayas. | <i>Hieroglyphus concolor</i> (Walker, 1870) |
| | <i>Leptacris maxima</i> (Karny, 1907) | Himalayas. | <i>Leptacris maxima</i> (Karny, 1907) |
| Subfamily Oedipodinae Walker, 1871 | <i>Gastrimargus transversus</i> Thunberg, 1815 | Kashmir : Baltistan | <i>Gastrimargus marmoratus</i> (Thunberg, 1815) |
| | <i>Sphingonotus caeruleus</i> (Linnaeus, 1767) | Himalayas. | <i>Sphingonotus (Sphingonotus) caeruleus</i> (Linnaeus, 1767) |
| | <i>Sphingonotus indus</i> Saussure, 1884 | Himalayas. | <i>Sphingonotus (Sphingonotus) indus</i> Saussure, 1884 |

| | | | |
|--|--|---------------------------------------|--|
| | <i>Sphingonotus savignyi</i> Saussure, 1884 | Sindh: Karachi, Kashmir: Ladak | <i>Sphingonotus (Sphingonotus) savignyi</i> Saussure, 1884 |
| | <i>Chloebora grossa</i> Saussure, 1884 | Himalayas. | <i>Chloebora grossa</i> Saussure, 1884 |
| Subfamily Catantopinae Brunner von Wattenwyl, 1893 | <i>Heteracris capensis</i> | Himalayas | <i>Ch oroedocus capensis</i> (Thunberg, 1815) |
| | <i>Heteracris illustris</i> (Walker, 1870) | South India | <i>Choroedocus illustris</i> (Walker, 1870) |
| Subfamily Thrinchinae Stål, 1876 | <i>Sphingonotus gigas</i> (Kirby, 1914) | Baluchistan : Quetta | <i>Eremopeza gigas</i> (Kirby, 1914) |
| | <i>Eremopeza granulosa</i> (Walker, 1871) | Baluchistan | <i>Eremocharis granulosa granulosa</i> (Walker, 1871) |
| Subfamily Calliptaminae Jacobson, 1905 | <i>Caloptenus liturifer</i> Walker, 1870 | Kashmir : Bnlstistan | <i>Acorypha glaucopsis</i> (Walker, 1870) |
| | <i>Brachy xenia scutifera</i> (Walker, 1870) | South India | <i>Brachy xenia scutifera</i> (Walker, 1870) |
| | <i>Kripa undulata</i> (Kirby, 1914) | Punjab : Campbellpur (Attock) | <i>Sphodromerus undulatus undulatus</i> (Kirby, 1914) |
| Subfamily Gomphomastacinae Burr, 1899 | <i>Gomphomastax antennatus</i> Brunner von Wattenwyl, 1898 | Kashmir | <i>Gomphomastax antennata</i> Brunner von Wattenwyl, 1898 |
| Subfamily Mastacideinae Rehn, 1948 | <i>Mastacides pupaeformis</i> Bolívar, 1899 | South India | <i>Mastacides pupaeformis</i> Bolívar, 1899 |
| Subfamily Cyrtacanthacridinae Kirby, 1910 | <i>Orthacanthacris aegyptia</i> (Linnaeus, 1764) | Quetta, | <i>Anacridium aegyptium</i> (Linnaeus, 1764) |
| Subfamily Pyrgomorphae Brunner von Wattenwyl, 1874 | <i>Chrotogonus concavus</i> Kirby, 1914 | Baluchistan : Quetta | <i>Chrotogonus (Chrotogonus) homalodemus</i> (Blanchard, 1836) |
| | <i>Chrotogonus robertsi</i> Kirby, 1914 | Baluchistan : Quetta | <i>Chrotogonus (Chrotogonus) trachypterus robertsi</i> Kirby, 1914 |
| | <i>Chrotogonus brevis</i> Bolívar, 1904 | Sind: Karachi | <i>Chrotogonus (Chrotogonus) trachypterus</i> (Blanchard, 1836) |
| | <i>Atractomorpha blanchardi</i> Kirby, 1914 | Sind;Karachi | <i>Atractomorpha acutipennis blanchardi</i> Bolívar, 1905 |
| | <i>Poekilocerus pictus</i> (Fabricius, 1775) | Baluchistan : Quetta ; Sindh: Karachi | <i>Poekilocerus pictus</i> (Fabricius, 1775) |
| No confirmed status (Described in Subfamily Batracotetrigenae | <i>Eremopeza brachycera</i> Kirby 1914 | Baluchistan:Quetta | No status found |
| No confirmed status (Described in subfamily Catantopinae) | <i>Ischnacrida convergens</i> Walker 1870 | Sind : Karachi | No status found Genus synonymized <i>Leptacris</i> Walker, 1870 |
| Subfamily Coptacrinae Brunner von Wattenwyl, 1893 | <i>Acridium punctarium</i> | South India | <i>Coptacra punctaria</i> (Walker, 1870) |

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