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## Check-List and distributional records of Phlebotomine Sandflies from Balochistan Province, Pakistan (Diptera, Psychodidae)

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**Abstract:** A total number of 23 known species, representing genera *Phlebotomus*, *Sergentomyia* and *Grassomyia* and 5 undetermined species of the genera *Phlebotomus* and *Sergentomyia* were identified during the surveys conducted during 1996-2001 in the whole of the Balochistan Province, Pakistan. Out of this, 8 species namely *Phlebotomus bergeroti*, *Ph. andrejevi*, *Sergentomyia fallax*, *S. dentata arpaklensis*, *S. murghabiensis*, *S. mervynae*, *S. fretownensis* var. and *Grassomyia dreyfussi turkestanica* are new record from Pakistan whereas eight species viz., *Ph. alexandri*, *Ph. nuri*, *S. babu babu*, *S. palestinensis*, *S. grekovi*, *S. clydei*, *S. tibiriadis pakistanica* and *S. hodgsoni hodgsoni* are new record from Balochistan. Seven already reported species namely *Ph. papatasi*, *Ph. salehli*, *Ph. sergenti*, *S. punjabiensis*, *S. thoedori pashtunica*, *S. baghdadis* and *Grassomyia indica* were collected again, identified and determined. In addition, 5 undetermined species, four are of the genus *Phlebotomus*, subgenus *Phlebotomus* and 1 is of the genus *Sergentomyia*, subgenus *Parrotomyia* were also recorded (only females). These are not counted here in the total number of species of sandflies because more specimens are required for study. These five flies do not seem to belong other known species from Pakistan. Taxonomic position of 23 species and their distribution (see Map of Balochistan) are given in the present paper. After this study, the number of sandflies species known from Pakistan becomes 37.

**Key words:** Sandflies, *Phlebotomus*, *Sergentomyia*, *Grassomyia*

Taxonomic account and distribution of the 23 species of sandflies representing 3 genera, 6 subgenera, recorded by the author from the whole of the Balochistan Province during 1996-2001 (see Map of Balochistan) are given as under:

[A] Genus *Phlebotomus* Rondani and Berte in Rondani<sup>[1]</sup>  
a) Subgenus *Phlebotomus* Rondani and Berte in Rondani<sup>[1]</sup>

### 1. *Phlebotomus papatasi* Scopoli<sup>[2]</sup>

**New record, present survey:** Adampur, Awaran, Balichah (Makran), Barkhan, Barshore, Belpat, Bhag, Buleda, Chilgiri, Dalbandin, Dashte Kuddan, Dera Allahyar, Dera Murad Jamali, Dhadar, Duki, Hairdin, Hoshab (Makran), Jangal Pir Alizai, Jhal Jhao, Kahan, Kalatuk, Kharan, Khuzdar, Kuchlak, Kohlu, Mand, Mashkey, Mewand, Mithri, Nal, Nallaint, Nanasahab ziarat, Nasirabad (Makran), Nushki, Ornach, Panjgour, Parom, Pishin, Qilla Abdullah, Qilla Saifullah, Rakhni, Shahrag (Makran), Sohbatpur, Suntsar, Tump, Turbat, Usta Muhammad, Winder, Wadh, Ziarat.

Bela<sup>[3]</sup>, [present survey], Bostan<sup>[3]</sup>, Chaman<sup>[4]</sup>, [present survey], Dera Bugti<sup>[5]</sup>, [present survey], Kalat and Khuzdar<sup>[3]</sup>, (present survey), Lehri<sup>[5,6]</sup>, Mastung<sup>[3]</sup>, Quetta<sup>[7,8,4,9,3]</sup>, [present survey], Sangsila<sup>[5,6]</sup>, [present survey], Sibi<sup>[5,3,6]</sup>, [present survey], Talli<sup>[5,6]</sup>, [present survey], Uthal<sup>[5,10,6]</sup>, [present survey].

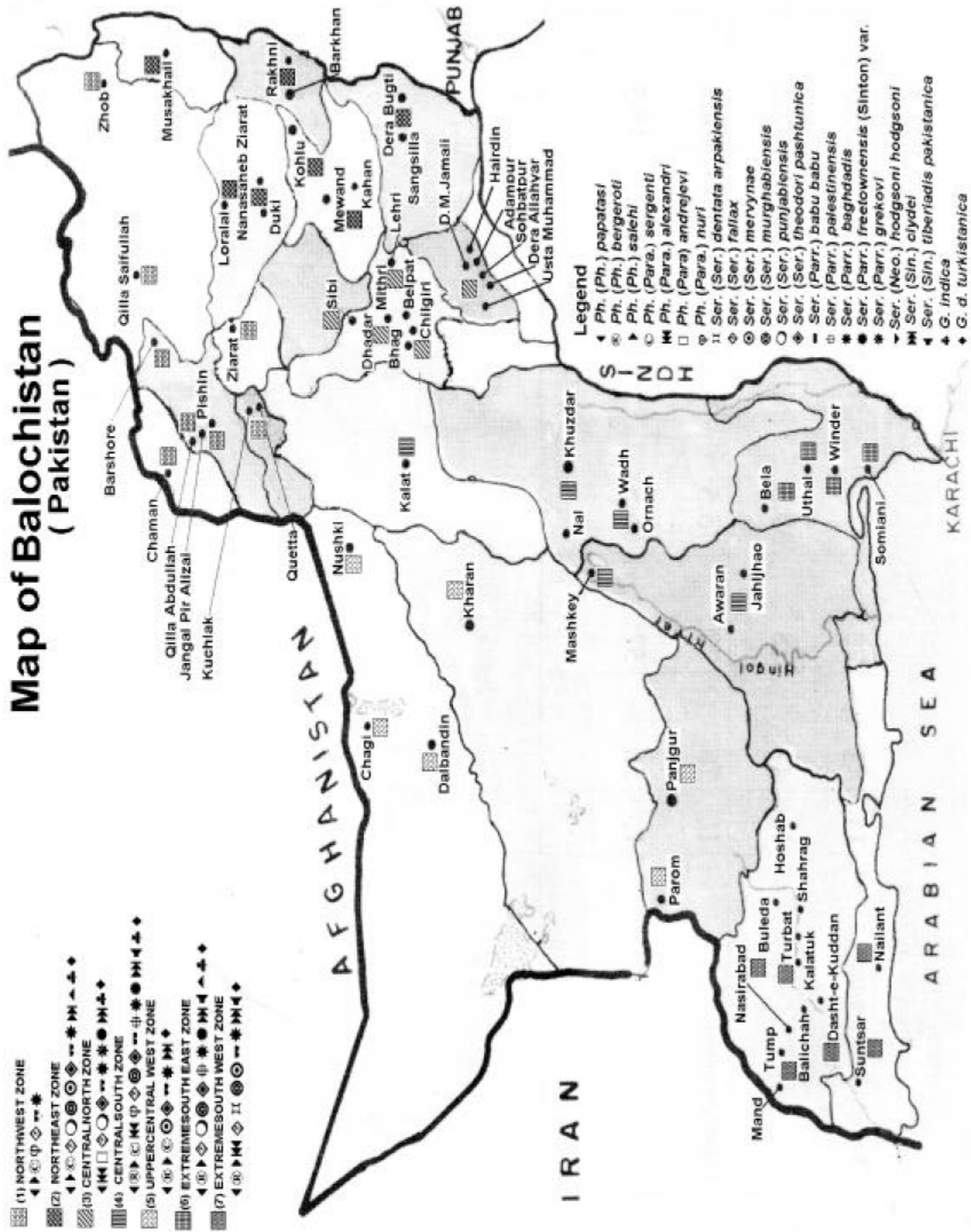
### 2. *Ph. bergeroti* Parrot (1934)

**New record, present survey:** Bela, Khuzdar, Panjgour, Trubat, Uthal.

### 3. *Ph. salehi* Mesghali<sup>[11]</sup>

**New record, present survey:** Bela, Chaman, DashteKuddan, Khuzdar, Kohlu, Nanasahab ziarat, Panjgour, Turbat. Kahan<sup>[6]</sup>, (present survey), Uthal<sup>[10]</sup>, [present survey].

- i) *Phlebotomus (Phlebotomus)* Sp. A. A single ♀ was collected from Mand.
- ii) *Phlebotomus (Phlebotomus)* Sp. B. A single ♀ was caught from Parom.



Map of Balochistan

- iii) *Phlebotomus (Phlebotomus)* Sp. C. A single ♀ was collected from Kahan.
- iv) *Phlebotomus (Phlebotomus)* Sp. D. A single ♀ was caught from Lehri.
- v) Sub genus *Paraphlebotomus* Theodor<sup>[13]</sup>

4. *Ph. sergenti* Parrot<sup>[14]</sup>

**New record, present survey:** Barshore, Chaman, Kohlu, Kuchlak, Muslim Bagh, Ornach, Panjgour, Pishin, Qilla Abdulla, Qilla Saifullah, Ziarat. Barkhan and Bibertek<sup>[6]</sup>, Kahan<sup>[6]</sup>, Lehri<sup>[5,6]</sup>, Mastung<sup>[3]</sup>, [present survey], Quetta<sup>[4,3]</sup>, [present survey], Sangsilla<sup>[6]</sup>, Sibi<sup>[5,3,6]</sup>, Talli<sup>[6]</sup>, Zhob<sup>[3]</sup>.

- 5. *Ph. alexandri* Sinton<sup>[15]</sup> New record, present survey: Khuzdar, Nal, Sibi, Turbat, Wadh
- 6. *Ph. andrejevi* Shakirzyanova<sup>[16]</sup> New record, present survey: Dhadar (♂ 12.7.1996).
- 7. *Ph. muri* Lewis<sup>[9]</sup> New record, present survey: Khuzdar, Quetta.

[B] Genus *Sergentomyia* Franca and Parrot<sup>[17]</sup>

a) Subgenus *Sergentomyia* Franca and Parrot<sup>[18]</sup>

- 8. *S. fallax* Parrot<sup>[19]</sup> New record, present survey: Bela, Chaman, Duki, Dahste Kuddan, Khuzdar, Kohlu, Mewand, Nanasaheb ziarat, Tump, Turbat.
- 9. *S. punjabiensis* Sinton<sup>[20]</sup> New record, present survey: Belpat, Dhadar, Lehri, Uthal, Dera Bugti<sup>[6]</sup>, Kahan<sup>[6]</sup>, [present survey], Quetta<sup>[9,6]</sup>, Sibi<sup>[5,6]</sup>, [present survey], Talli<sup>[6]</sup>.
- 10. *S. murghabiensis* Perfiliev<sup>[21]</sup> New record, present survey: Bela, Kahan, Khuzdar, Nanasaheb ziarat, Tump, Turbat.
- 11. *S. mervynae* Pringle<sup>[22]</sup> New record, present survey: Khuzdar, Nanasaheb ziarat, Panjgour, Turbat.
- 12. *S. dentata arpaklensis* Perfiliev<sup>[23]</sup> New record, present survey: Mand, (1 ♂, 1 ♀, 7.10.1998).
- 13. *S. theodori pashtunica*, Artemiev [24] New record, present survey: Bela, Dhadar, Duki, Khuzdar, Nanasaheb ziarat, Panjgour, Parom, Sibi, Tump. Dera Bugti<sup>[6]</sup>.

b) Sub genus *Parrotomyia* Theodor<sup>[13]</sup>

- 14. *S. babu babu* Annadale<sup>[25]</sup> New record, present survey: Adampur, Barkhan, Chaman, Dashte Kuddan, Dera Allahyar, Dhadar, Hairdin, Kahan, Kohlu, Khuzdar, Nal, Nanasaheb ziarat, Panjgour, Sibi, Usta Muhammad, Wadh.
- 15. *S. palestinensis* Adler and Theodor<sup>[26]</sup> New record, present survey: Bela, Khuzdar, Uthal.
- 16. *S. baghdadis* Adler and Theodor<sup>[27]</sup> New record, present survey: Bela, Chaman, Dashte Kuddan, Dera Allahyar, Dhadar, Duki, Kahan, Kohlu, Khuzdar, Nal, Panjgour, Sibi, Turbat, Usta Muhammad, Wadh. Dera Bugti<sup>[5]</sup>, Lehri<sup>[5]</sup>, Sangsila<sup>[6]</sup>.

- 17. *S. grekovi* Khodukin<sup>[28]</sup> New record, present survey: Sibi, (1 ♀, on 15. 3.1997).

- 18. *S. freetownensis* Sinton<sup>[29]</sup> var. New record, present survey: Bela, Khuzdar, Sibi, Uthal, Winder.

c) Sub genus *Sintonius* Nitzulescu<sup>[30]</sup>

- 19. *S. clydei* Sinton<sup>[31]</sup> New record, present survey: Bela, Dashte kuddan, Dera Bugti, Dhadar, Kahan, Khuzdar, Kohlu, Mand, Mewand, Nal, Panjgour, Parom, Sibi, Tump, Turbat. Uthal<sup>[10]</sup>, [present survey].
- 20. *S. tiberiadis pakistanica* Artemiev and Safayanova<sup>[32]</sup> New record, present survey: Bela, Khuzdar, Turbat.

d) Sub genus *Neophlebotomus* Franca and Parrot<sup>[18]</sup>

- 21. *S. hodgsoni hodgsoni* Sinton [33] New record, present survey: Bela, Kahan, Nana saheb ziarat.

[C] Genus *Grassomyia* Lewis<sup>[34]</sup> {Previously, *Grassomyia* was designated as a subgenus by Theodor<sup>[35]</sup>}

- 22. *G. indica* Theodor<sup>[36]</sup> New record, present survey: Adampur, Bela, Dera Allah Yar, Dhadar, Duki, Hairdin, Khuzdar, Kohlu, Nal, Nanasaheb ziarat, Panjgour, Sibi.
- 23. *G. dreyfussi turkestanica* Theodor and Mesghali<sup>[37]</sup> New record, present survey: Adampur, Bela, Dera Allahyar, Dhadar, Duki, Hairdin, Kahan, Khuzdar, Nanasaheb ziarat, Parom, Sibi, Turbat, Usta Muhammad.

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