



An updated checklist of Indian trichogrammatids (Hymenoptera: Chalcidoidea)

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Abstract

In this paper an updated check list of genera and species of Family Trichogrammatidae, reported and described from India is mentioned. This checklist contains 33 genera and 171 species reported from India till December, 2024.

Keywords: Checklist, Egg parasitoid, oophagus, Trichogrammatidae, India.

Introduction

Trichogrammatids are very tiny insects, measuring about 0.2-1.0 mm body length and are easily identified by their legs with 03 segmented tarsi and non-metallic body. They are exclusively oophagus, parasitizing the eggs of insects belonging to more than eight insect Orders such as Lepidoptera, Hymenoptera, Neuroptera, Diptera, Thysanoptera, Hemiptera, Coleoptera and Megaloptera (Nagarkatti & Nagaraja, 1977; Clausen, 1940). A checklist of Indian species of Family Trichogrammatidae was given earlier by Begum and Anis in 2014, which comprises of 31 genera and 151 species reported from India. Further taxonomic studies on trichogrammatids was carried out by various authors between the time period 2014 - 2024, and described a number of new species, some species are synonymised and some new records reported for the first time from various union territories and states of India.

This updated check list includes addition of new genera and species with new distributional records of trichogrammatids reported during the time period between 2014-2024, these includes two new genus *Ayaanella* Khan & Anis, 2017 and *Indogramma* Khan *et al.*, 2015 and 19 new species were described: *Aphelinoidea almoraensis*, *Aphelinoidea rudrapurensis*, *Aphelinoidea yousufi*, *Ayaanella globugaster*, *Haeckeliana singularis*, *Lathromeris nainitalensis*, *Lathromeris indica*, *Lathromeroidea deoriaensis*, *Lathromeroidea longiciliata*, *Lathromeroidea hisarensis*, *Lathromeroidea Indica*, *Mirufens kamalia*, *Oligosita ferozpurensis*, *Oligosita hyderansis*, *Probrachista turtukensis*, *Trichogramma hayati*, *Ufens garhwalensis*, *Ufens hapurensis*, and *Ufens meerutensis* were described by various authors in India. Khan & Anis 2015, described two new species of genus *Ufens* Girault i.e. *Ufens acuminatus* and *Ufens mezentius* from Indian. Three Indian species of

genus *Megaphragma* Timberlake viz. *M. aligarhensis* and *M. magniclava*, *M. shimalianum* were synonymised with *M. longiciliatum* by Polaszek *et al.* 2022.

Material and Methods:

A comprehensive survey was carried out across various geographical area within the territory of India. The collection of insect specimens was done by using various methods such as sweep Net, Yellow Pan Trap and Malaise Trap. After collection, trichogrammatids were sorted out under stereo zoom microscope. Slide mounts were prepared by using method given by Noyes, 1982. The slide mounted specimens were studied under compound microscope by examining various morphological characters of specimens and identification was done by using key to genera and species given by Yousuf and Shafee, 1988.

Result and Discussion:

In this paper an updated checklist is prepared based on our comprehensive survey and taxonomic studies as well as data obtained from available literature of Indian trichogrammatids. Here, data of only valid genera and species described from India and their geographical distribution among various union territories and states within India is given in Table 1. On the basis of our present taxonomical studies and literature reviewed from all sources the following checklist is prepared which contains 33 genera and 171 species reported from India till December, 2024. The genus *Trichogramma* is the most diverse group among Indian trichogrammatids, consist of 33 species and genus *Ayaanella*, *Burksiella*, *Chaetostrichella*, *Indogramma*, *Lathromeromyia*, *Megaphragma*, *Pseudobrachysticha* and *Xiphogramma* each comprises of only one species as shown in Fig 1.

Table 1: Genera and species of family Trichogrammatidae from India.

S. No.	Genus and Species	Distribution (States & Union Territories)
1	Genus <i>Aphelinoidea</i> Girault, 1911	
	<i>Aphelinoidea almoraensis</i> Ikram and Khan, 2020	UK
	<i>Aphelinoidea gwaliorensis</i> Yousuf and Shafee 1985.	AP, HP, Haryana, J&K, Punjab, Odisha, UP, Arunachal Pradesh, MP, WB.
	<i>Aphelinoidea longiclavata</i> Yousuf and Shafee, 1988	Karnataka, UP.
	<i>Aphelinoidea rudrapurensis</i> Ikram and Khan, 2020	UK
	<i>Aphelinoidea yousufi</i> Khan and Anis, 2015	UP.
2	Genus <i>Ayaanella</i> Khan & Anis, 2017	
	<i>Ayaanella globugaster</i> Khan & Anis, 2017	UP.
3	Genus <i>Brachygrammatella</i> Girault, 1915	

	<i>Brachygrammatella indica</i> Viggiani and Hayat 1974.	Punjab, Rajasthan, Maharashtra, Haryana, TN, UP.
	<i>Brachygrammatella jaipurensis</i> Yousuf and Shafee, 1988	Rajasthan
4	Genus <i>Burksiella</i> De Santis 1957.	
	<i>Burksiella singularis</i> (Yousuf and Shafee), 1988	Haryana, Orissa, UP.
5	Genus <i>Chaetogramma</i> Doutt 1974.	
	<i>Chaetogramma borealis</i> Hayat, 2008	AP, Karnataka, UP.
	<i>Chaetogramma hisarensis</i> Yousuf and Shafee, 1993.	Haryana, AP, UP.
	<i>Chaetogramma maculata</i> Hayat 1981.	UP
6	Genus <i>Chaetostricha</i> Walker, 1851	
	<i>Chaetostricha fumipennis</i> (Yousuf and Shafee), 1988	UP
	<i>Chaetostricha magniclavata</i> Yousuf and Shafee 1988.	UP
	<i>Chaetostricha terebrata</i> (Yousuf and Shafee) 1984	AP, UP, Orissa.
7	Genus <i>Chaetostrichella</i> Girault, 1914	
	<i>Chaetostrichella Indica</i> Hayat 2009.	Assam
8	Genus <i>Epoligosita</i> Girault 1915.	
	<i>Epoligosita albiscutellum</i> Yousuf and Shafee, 1988	Haryana, UP
	<i>Epoligosita clara</i> Hayat and Viggiani, 1981.	UP
	<i>Epoligosita bicolor</i> Hayat and Viggiani 1981.	J&K, UP
	<i>Epoligosita dulinia</i> Livingstone & Yacoob 1983	Kerala, TN
9	Genus <i>Haeckeliana</i> Girault 1912.	
	<i>Haeckeliana magniclavata</i> Yousuf and Shafee 1984.	UP
	<i>Haeckeliana orissaina</i> Hayat, 2009.	Orissa
	<i>Haeckeliana singularis</i> Yousuf, Rajwar and Ikram, 2020	Haryana
10	Genus <i>Hayatia</i> Viggiani, 1982	
	<i>Hayatia indica</i> Viggiani 1982.	Maharashtra, WB UP
	<i>Hayatia utara</i> Hayat 2009	UP
	<i>Hayatia triclada</i> Hayat 2008	UP
11	Genus <i>Indogramma</i> Khan et. al. 2015	
	<i>Indogramma farmani</i> Khan et. al. 2015	Kerala
12	Genus <i>Lathromeris</i> Foerster, 1856	
	<i>Lathromeris indica</i> Yousuf, Ikram and Rajwar, 2019	Haryana
	<i>Lathromeris nainitalensis</i> Khan and Anis, 2017	UK
	<i>Lathromeris viggianii</i> Yousuf and Shafee, 1988	AP, UP
	<i>Lathromeris yousufi</i> Hayat 2009.	Meghalaya.
13	Genus <i>Lathromeroidea</i> Girault 1912.	
	<i>Lathromeroidea ajmerensis</i> Yousuf and Shafee, 1988	Rajasthan.
	<i>Lathromeroidea nigrella</i> Girault 1912	UP
	<i>Lathromeroidea indica</i> Yousuf, Rajwar and Ikram, 2020	UP
	<i>Lathromeroidea deoriaensis</i> Yousuf, Rajwar and Ikram, 2020	UP
	<i>Lathromeroidea longiciliata</i> Ikram and Yousuf, 2017	Punjab.
	<i>Lathromeroidea hisarensis</i> Ikram and Yousuf, 2016	Haryana.
	<i>Lathromeroidea angustipennis</i> (Yousuf and Shafee) 1985.	UP
14	Genus <i>Lathromeromina</i> Livingstone and Yacoob 1983.	
	<i>Lathromeromina tingiphaga</i> (Livingstone and Yacoob), 1983.	TN, Kerala, Karnataka, Orissa.
	<i>Lathromeromina transiseptata</i> (Lin) 1994.	Orissa.
15	Genus <i>Lathromeromyia</i> Girault, 1914	
	<i>Lathromeromyia dimorpha</i> Hayat 1981.	Haryana, Orissa, UP
16	Genus <i>Megaphragma</i> Timberlake 1923.	
	<i>Megaphragma longiciliatum</i> Subba Rao 1969.	Karnataka.
17	Genus <i>Mirufens</i> Girault, 1915	
	<i>Mirufens afrangiata</i> Viggiani and Hayat 1974.	Rajasthan, Punjab, UP
	<i>Mirufens brevifuniculata</i> Khan and Shafee 1977	UP, Rajasthan.
	<i>Mirufens kamalia</i> , Zaidi and Anis, 2023.	
	<i>Mirufens longifuniculata</i> Viggiani and Hayat 1974.	Punjab, Karnataka, UP, Gujarat.
	<i>Mirufens mangiferae</i> Viggiani and Hayat 1974	TN, UP
18	Genus <i>Neocentrobiella</i> Girault 1915.	
	<i>Neocentrobiella terebrator</i> Yousuf and Shafee, 1985	UP
	<i>Neocentrobiella viggianii</i> Hayat 1980.	UP
19	Genus <i>Oligosita</i> (Haliday) 1851.	
	<i>Oligosita angustipennis</i> Yousuf and Shafee, 1922.	UP
	<i>Oligosita breviclavata</i> Yousuf and Shafee, 1988.	UP
	<i>Oligosita ferozepurensis</i> Ikram and Yousuf, 2016.	Punjab.
	<i>Oligosita longipennis</i> Yousuf and Shafee, 1992	UP
	<i>Oligosita gilvus</i> Yousuf and Shafee, 1984	Haryana, UP
	<i>Oligosita hyderansis</i> Manhas, Anis and Zaidi, 2022	Telangana.
	<i>Oligosita longiflagellata</i> Yousuf and Joshi, 2003	Haryana, MP
	<i>Oligosita debaiensis</i> Yousuf and Shafee, 1988	UP
	<i>Oligosita longirhinaria</i> Yousuf and Shafee, 1988	Haryana, UP

	<i>Oligosita meerutensis</i> Yousuf and Shafee, 1984	Rajasthan, Jharkhand, Bihar, UP,
	<i>Oligosita niais</i> Girault 1938.	AP, Karnataka, Orissa, TN
	<i>Oligosita novisanguinea</i> Girault 1912.	HP, Haryana, J&K, UK, Rajasthan, UP,
	<i>Oligosita younusi</i> Yousuf and Shafee, 1988.	UP
	<i>Oligosita similiana</i> Hayat 2009.	Orissa.
	<i>Oligosita sanguinea</i> (Girault) 1911.	UP
20	Genus <i>Paracentrobia</i> Howard 1897.	
	<i>Paracentrobia bharpurensis</i> Yousuf and Shafee 1988.	Rajasthan.
	<i>Paracentrobia andoi</i> (Ishii) 1938.	AP.
	<i>Paracentrobia ajmerensis</i> Yousuf and Shafee, 1988.	Rajasthan.
	<i>Paracentrobia brevifringiata</i> Yousuf and Shafee, 1988.	Haryana, MP, Punjab, UP
	<i>Paracentrobia longiclavata</i> Yousuf and Shafee, 1985.	UP, MP
	<i>Paracentrobia longipedicelata</i> Yousuf and Shafee, 1988.	UP
	<i>Paracentrobia longipennis</i> Yousuf and Shafee, 1988.	MP, UK, UP
	<i>Paracentrobia maduraiensis</i> Yousuf and Shafee, 1988.	TN
	<i>Paracentrobia magniclavata</i> Yousuf and Shafee, 1985.	Haryana, UP
	<i>Paracentrobia neoflava</i> Yousuf and Shafee, 1988.	Rajasthan, UP
	<i>Paracentrobia nephoteticum</i> (Mani), 1939.	Orissa
	<i>Paracentrobia parflava</i> Yousuf and Shafee, 1988.	Rajasthan.
	<i>Paracentrobia pubipennis</i> Yousuf and Shafee, 1988.	Kerala.
21	Genus <i>Paratrachogramma</i> Girault 1912.	
	<i>Paratrachogramma giraulti</i> Hayat and Shujauddin, 1980.	UK, UP
	<i>Paratrachogramma nigricorpa</i> Yousuf and Shafee, 1991.	TN, UP
	<i>Paratrachogramma quilonensis</i> Yousuf and Shafee, 1988.	Kerala, TN.
22	Genus <i>Poropoea</i> Foerster 1851.	
	<i>Poropoea baleena</i> Narendran and Hayat, 2007.	Punjab, UP
	<i>Poropoea bella</i> Hayat and Poorani, 2013.	Karnataka.
	<i>Poropoea indica</i> Subba Rao 1970.	New Delhi.
23	Genus <i>Prestwichia</i> Lubbock 1864.	
	<i>Prestwichia indica</i> Jonathan and Julka, 1975.	WB, Orissa
	<i>Prestwichia nympa</i> Hayat 2009.	Meghalaya, Orissa, WB.
24	Genus <i>Probrachista</i> Viggiani 1968.	
	<i>Probrachista bharpurensis</i> Hayat 2008.	HP.
	<i>Probrachista turtukensis</i> Manhas, Anis and Khan 2023	Ladakh
25	Genus <i>Prosoligosita</i> Hayat and Husain, 1981.	
	<i>Prosoligosita aseta</i> Hayat, 2009.	WB.
	<i>Prosoligosita longicauda</i> Hayat, 2009.	Orissa
	<i>Prosoligosita perplexa</i> Hayat and Husain, 1981.	MP, Haryana, Orissa, UP
	<i>Prosoligosita proxima</i> Hayat, 2009.	WB.
26	Genus <i>Pseudobrachysticha</i> Girault, 1915	
	<i>Pseudobrachysticha semiaurea</i> Girault, 1915.	Bihar.
27	Genus <i>Pseudoligosita</i> Girault, 1913	
	<i>Pseudoligosita aesopi</i> (Girault) 1929.	Gujarat, UP, Orissa.
	<i>Pseudoligosita brevicilia</i> Girault, 1915.	TN, Orissa, UP
	<i>Pseudoligosita brevifringiata</i> (Yousuf and Shafee) 1988.	Gujarat, Orissa, UP
	<i>Pseudoligosita latipennis</i> (Yousuf and Shafee) 1984.	UP, Jharkhand
	<i>Pseudoligosita longicilia</i> (Yousuf and Shafee) 1984.	Bihar, Jharkhand, UP
	<i>Pseudoligosita nephoteticum</i> (Mani) 1939.	Rajasthan, UP, Haryana, Bihar, Jharkhand.
	<i>Pseudoligosita sakara</i> (Hayat) 2009.	UP, Orissa.
	<i>Pseudoligosita singularis</i> (Yousuf and Shafee) 1984	UP, Jharkhand.
	<i>Pseudoligosita tachikawai</i> (Yashiro) 1979	AP
	<i>Pseudoligosita yasumatsui</i> (Viggiani and Subba Rao) 1978.	UP
28	Genus <i>Trichogramma</i> Westwood 1833.	
	<i>Trichogramma agriae</i> Nagaraja 1973	Karnataka
	<i>Trichogramma achaeae</i> Nagaraja and Nagarkatti, 1969.	Gujarat, Punjab, WB, Karnataka.
	<i>Trichogramma australicum</i> Girault 1912	Karnataka, AP, UP, Gujarat, Punjab, TN, Maharashtra, WB
	<i>Trichogramma brevifringiata</i> Yousuf and Shafee, 1988.	UP
	<i>Trichogramma breviciliata</i> Yousuf and Hassan, 2007.	MP
	<i>Trichogramma californicum</i> Nagaraja and Nagarkatti 1973.	TN, Karnataka.
	<i>Trichogramma chilonis</i> Ishii, 1941.	AP, New Delhi, Bihar, Gujarat, Rajasthan, Haryana, HP, J&K, Kerala, MP, Maharashtra, Punjab, Orissa, TN, UP, WB.
	<i>Trichogramma chilotraeae</i> Nagaraja and Nagarkatti 1969.	J&K, Punjab, WB.
	<i>Trichogramma danausica</i> Nagaraja 2008	Karnataka
	<i>Trichogramma convolvuli</i> Nagaraja, 2008.	Karnataka.
	<i>Trichogramma dendrolini</i> Matsumura, 1926.	J&K
	<i>Trichogramma embryophagum</i> (Hartig), 1838	J&K
	<i>Trichogramma cuttackensis</i> Nagaraja 2008	Orissa
	<i>Trichogramma hebbalensis</i> Nagaraja 2008.	Karnataka, HP.

	<i>Trichogramma flandersi</i> Nagaraja and Nagarkatti, 1969.	Karnataka.
	<i>Trichogramma hayati</i> Yousuf <i>et al.</i>	UK.
	<i>Trichogramma exiguum</i> Pinto and Platner, 1978.	Karnataka.
	<i>Trichogramma hesperidis</i> Nagaraja 1973.	Karnataka.
	<i>Trichogramma japonicum</i> Ashmead 1904.	AP, J&K, TN, Uttra Pradesh, Karnataka, Maharashtra, Orissa, Punjab, Bihar, Haryana, Rajasthan, WB
	<i>Trichogramma sankarani</i> Nagaraja 2008.	Karnataka.
	<i>Trichogramma kashmiricum</i> Nagaraja, Ahmad and Gupta, 2007.	J&K
	<i>Trichogramma pallidiventris</i> Nagaraja 1973.	Karnataka, MP.
	<i>Trichogramma minutum</i> Riley 1871.	HP, TN, Assam.
	<i>Trichogramma manii</i> Nagaraja and Gupta, 2007	Karnataka.
	<i>Trichogramma perkinsi</i> Girault, 1910.	WB.
	<i>Trichogramma plasseyense</i> Nagaraja, 1973.	AP, WB
	<i>Trichogramma poliae</i> Nagaraja 1973.	Haryana, J&K, Uttra Pradesh, WB
	<i>Trichogramma pretiosum</i> Riley 1879.	Bihar, Haryana, HP, J&K, Karnataka, Maharashtra, Rajasthan, TN
	<i>Trichogramma pintoii</i> Voegelé 1982.	Karnataka
	<i>Trichogramma kankerensis</i> Yousuf and Hassan 2008.	Chhattisgarh.
	<i>Trichogramma raoi</i> Nagaraja 1973.	UP
	<i>Trichogramma semifumatum</i> (Perkins) 1910.	Karnataka.
	<i>Trichogramma semblidis</i> Aurivillius, 1897.	Karnataka.
29	Genus <i>Trichogrammatoidea</i> Girault, 1911.	
	<i>Trichogrammatoidea armigera</i> Manjunath 1972.	WB, UK, Karnataka
	<i>Trichogrammatoidea brasiliensis</i> (Ashmead) 1904.	Punjab, Bihar, HP, Haryana, Karnataka, Maharashtra, TN.
	<i>Trichogrammatoidea bactrae</i> Nagaraja 1979.	Karnataka, Bihar, TN, WB.
	<i>Trichogrammatoidea fumata</i> Nagaraja 1978.	UP
	<i>Trichogrammatoidea fulva</i> Nagaraja, 1978.	Assam, Karnataka.
	<i>Trichogrammatoidea eldanae</i> Viggiani, 1979.	Punjab.
	<i>Trichogrammatoidea nana</i> Zehntner, 1896.	Bihar, UP, Kerala, HP, WB, TN.
	<i>Trichogrammatoidea robusta</i> Nagaraja 1978.	WB
	<i>Trichogrammatoidea prabhakeri</i> Nagaraja, 1978.	Karnataka
	<i>Trichogrammatoidea ruficarpa</i> Yousuf and Hassan, 2006.	MP
30	Genus <i>Tumidiclava</i> Girault 1911.	
	<i>Tumidiclava agraensis</i> Yousuf and Shafee 1988.	UP
	<i>Tumidiclava longiclavata</i> Yousuf and Shafee, 1988.	UK, UP
	<i>Tumidiclava gilvus</i> Yousuf, Kumar and Chauhan, 1998.	Rajasthan.
	<i>Tumidiclava magnicarpa</i> Yousuf and Shafee, 1988.	UP
	<i>Tumidiclava sasniensis</i> Yousuf and Shafee, 1988.	UP
	<i>Tumidiclava tenkasiensis</i> Yousuf and Shafee, 1988.	Haryana, Kerala, TN, Rajasthan.
31	Genus <i>Ufens</i> Girault 1911.	
	<i>Ufens acuminatus</i> Lin 1993.	UP
	<i>Ufens breviclavata</i> Yousuf and Shafee, 1991.	UP
	<i>Ufens garhwalensis</i> Ikram and Yousuf, 2024	Punjab, UK
	<i>Ufens gurgaonensis</i> Yousuf and Shafee, 1988.	AP, HP, Punjab, UK, Bihar, New Delhi, Haryana, UP
	<i>Ufens hapurensis</i> Ikram and Yousuf, 2024	UP
	<i>Ufens khamai</i> Owen, 2011.	Karnataka.
	<i>Ufens jaipurensis</i> Yousuf and Shafee, 1988.	Rajasthan, UP
	<i>Ufens latipennis</i> Yousuf and Shafee, 1988.	Karnataka, UK, UP
	<i>Ufens meerutensis</i> Ikram and Yousuf 2024	UP
	<i>Ufens mezentius</i> Owen 2011.	UP
	<i>Ufens similis</i> (Kryger) 1932.	Karnataka, UP
32	Genus <i>Uscana</i> Girault, 1911	
	<i>Uscana meerutensis</i> (Yousuf and Shafee) 1993.	UP
	<i>Uscana bruchidiusi</i> Pajni and Tewari, 2004.	Punjab
	<i>Uscana corythaumaii</i> (Livingstone and Yacoob), 1990.	TN
	<i>Uscana femoralis</i> Pajni and Sood, 1999.	Punjab
	<i>Uscana indica</i> Pajni and Tewari, 2002.	HP
	<i>Uscana latipennis</i> (Yousuf and Shafee), 1985.	UP
	<i>Uscana mukerjii</i> (Mani), 1935.	Punjab, New Delhi, Haryana, WB.
	<i>Uscana alami</i> Yousuf and Shafee, 1988.	UP
33	Genus <i>Xiphogramma</i> Nowicki, 1940.	
	<i>Xiphogramma indicum</i> Hayat 1980	MP, Assam, UP

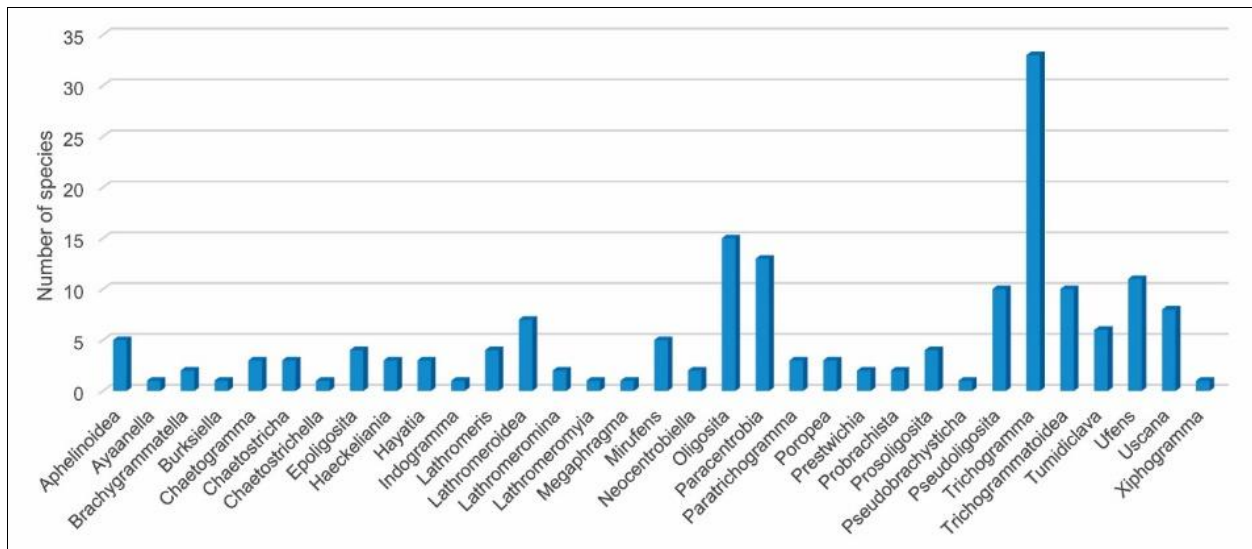


Fig 1: showing number of species of family Trichogrammatidae from India.

The acronym used for states name are: UP (Uttar Pradesh), AP (Andhra Pradesh), HP (Himachal Pradesh), TN (Tamil Nadu), J&K (Jammu and Kashmir), MP (Madhya Pradesh), UK (Uttarakhand), WB (West Bengal).

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