THE TEREBRANTIAN THYSANOPTERA OF THE INDO-CEYLONESE REGION

by

T. N. ANANTHAKRISHNAN
Department of Zoology, Loyola College, Madras 34

Introduction

The Thysanoptera include an order of insects ranging from 0.4 - 10 mm in length and popularly called 'thrips' or 'fringe wings'. They have received better attention at the hands of entomologists in recent years particularly due to their importance as pests of agricultural plants and also because of their ability to act as vectors of some virus diseases of plants. In the nature of the wings with long fine fringes along their margin, in the possession of asymmetrical mouth parts, with the right mandible vestigeal and not fully developed as the left, in having a protrusible bladder-like structure at the end of the tarsus (Physapoda) and in the presence of a prepupal stage in between the larval and pupal stages, the Thysanoptera are unique among insects.

HALIDAY (1836) proposed the two suborders, the Terebrantia, with a distinct saw-like ovipositor in the females, forewings with a system of veins and sometimes cross veins, a distinct wing chaetotaxy and a 2-8 segmented maxillary palp and the Tubulifera, which lack an ovipositor in the females, abdominal segment X drawn out into a tube, forewings without veins, cross veins and setae and maxillary palp always two segmented.

The first report of a species of Terebrantian thrips from the Indian region, was by BAGNALL (1912) when he described the turmeric pest *Panchaetothrips indicus* from Madras. Of the 15 species recorded till 1915, only four were Terebrantia. WILLIAMS (1915) described *Thrips oryzae* as a pest of the rice plant, while HOOD (1919) added three more species from Indian material. Between the years 1915 - 1924, BAGNALL recorded several new and known species from India and Ceylon, and in subsequent years KARNY of Java and MOULTON of America also contributed a fair share to our understanding of Indo-Ceylonese thrips. To a consolidated

knowledge of the Terebrantia of this region, we owe a good deal the great pioneer entomologist, RAMAKRISHNA, who alone and in collaboration with MARGABANDHU, unearthed quite a mine of interesting species, for a period of over 15 years. They published a useful catalogue in 1940, of Indo-Ceylonese Thysanoptera, of which one hundred species spread over forty three genera were Terebrantia. SHUMSHER SINGH (1942-47) worked on the systematics of Indian Terebrantia and added about a dozen new species. Since 1948 the works of SESHADRI and ANANTHAKRISHNAN (1953), ANANTHAKRISHNAN (1949-63) and BHATTI (1960-63) have brought to light more genera and species. With the accumulation of more material, several synonymies overlooked by the previous workers and the addition of new and known species during the last fifteen years have necessitated the revision of our knowledge of Indian Terebrantia. About 145 species spread over 50 genera are recorded here and a consolidated key to the families, subfamilies, tribes, genera and species are provided. It is common knowledge among systematists that "new specimens and publications continually being received, make it necessary periodically to re-evaluate and modify concepts and relationships" (BAILEY, 1957). PRIESNER's (1957) classification into tribes and subtribes has been followed and the tabular columns below, give an indication of the synonymies and the shifts in the taxonomic status of the species we know today as compared with those recorded earlier.

Table of names used for the Indian species of Terebrantia with a list of the more important synonyms.

Serial number	Valid names as recognised today	RAMAKRISHNA & MARGABANDHU, 1940	SHUMSHER, 1945	Others
	Superfamily **Aeolothripoidea** HOOD.			
	Family **Aeolothripidae** UZEL			
	Subfamily **Aeolothripinae** BAGNALL			
	Genus *Erythrothrips* MOULTON.			
	Subgenus *Aduncothrips* nov.			
1.	*Aduncothrips asiaticus* (RAMK. & MARG.).	*Erythrothrips asiaticus* RAMK. & MARG.	*E. asiaticus* R. & M.	
	Genus *Aeolothrips* HALIDAY.			
2.	*Aeolothrips collaris* var. *fulvicollis* BAGN.	*A. fulvicollis* BAGN.	*A. fasciatus* (L)	*A. collaris var. fulvicollis* BAGNALL (PRIESNER, 1948)
3.	*Aeolothrips fasciatus* (LINN.).			
4.	*Aelothrips pandyani* R. & M.	*A. pandyani* R. & M.	*A. pandyani* R. & M.	
	Genus *Allelothrips* BAGNALL			
5.	*Allelothrips ananthakrishnani* STANNARD.			*A. ananthakrishnani* STANNARD (STANNARD, 1961)
	Genus *Orothrips* MOULTON			
6.	*Orothrips raoi* MOULTON	*O. raoi* MOULTON	*O. raoi* MOULTON	
	Subfamily *Mymarothripinae* BAGNALL			
	Genus *Mymarothrips* BAGN.			
7.	*Mymarothrips garuda* R & M.	*M. garuda* R. & M.	*M. garuda* R. & M.	
	Superfamily **Thripoidea** HOOD			

Serial number	Valid names as recognised today	RAMAKRISHNA & MARGABANDHU, 1940	SHUMSHER, 1945	Others
	Family **Heterothripidae** BAGNALL			
	Tribe Opadothripini PRIESNER			
	Genus *Adiheterothrips* RAMK.			
8.	*Adiheterothrips jambudvipae* RAMK.	*A. jambudvipae* RAMK.	*A. jambudvipae* RAMK.	
	Family Thripidae UZEL			
	Subfamily **Thripinae** KARNY			
	Tribe Chirothripini PRIESNER			
	Genus *Chirothrips* HALIDAY			
9.	*Chirothrips loyolae* ANANTHAK.			*C. loyolae* ANANTHAK. (ANANTHAKRISHNAN, 1959)
10.	*Chirothrips manicatus* HALIDAY			*C. manicatus* HALIDAY.
11.	*Chirothrips maximi* ANANTHAK.			*C. maximi* ANANTHAK. (ANANTHAKRISHNAN, 1957)
12.	*Chirothrips meridionalis* BAGN.			*C. meridionalis* BAGNALL. (BHATTI, 1961)
13.	*Chirothrips ramakrishnai* ANANTHAK.			*C. ramakrishnai* ANANTHAK. (ANANTHAKRISHNAN, 1957)
	Genus *Limothrips* HALIDAY			
14.	*Limothrips cerealium* HALIDAY.	*L. cerealium* HALIDAY	*L. cerealium* HALIDAY	
	Tribe Dendrothripini PRIESNER			
	Genus *Cerothrips* ANANTHAKRISHNAN			
15.	*Cerothrips minutus* ANANTHAK.			*C. minutus* ANANTHAK. (ANANTHAKRISHNAN, 1961)
	Genus *Dendrothrips* UZEL			
	Subgenus *Dendrothrips* s. str.			
	Dendrothrips indicus	*D. indicus* BAGN.	*D. indicus* BAGN.	

	BAGNALL.			
19.	*Dendrothrips stannardi* (ANAN.) Subgenus *Projectothripoides* SHUMSHER			*Dendrothripiella stannardi* ANAN. (ANANTHAKRISHNAN, '58)
20.	*Dendrothrips pandai* (SHUMSHER) Genus *Pseudodendrothrips* SCHUMTZ		*Dendrothripiella (Projectothripoides) pandai* SHUMSHER	*Dendrothrips pandai* (SHUMSHER) (FAURE, 1960)
21.	*Pseudodendrothrips dwivarna* (R. & M.)	*Dendrothrips dwivarna* R. & M.	*Pseudodendrothrips dwivarna* (R. & M).	*Pseudodendrothrips dwivarna* (R. & M.) ANANTHAKRISHNAN, 1955.
22.	*Pseudodendrothrips ornatissimus* SCHMUTZ. Tribe Sericothripini PRIESNER Subtribe Sericothripina PRIESNER Genus *Sericothrips* HALIDAY	*P. ornatissimus* SCHM.	*P. ornatissimus* SCHM.	
23.	*Sericothrips boerhaaviae* SESHADRI & ANANTHAKRISHNAN.			*S. (Hydatothrips) boerhaaviae* S & A. (SESHADRI & ANANTHAKRISHNAN, 1954)
24.	*? Sericothrips cingulatus* HINDS.			
25.	*Sericothrips graminis* ANANTHAK.			*S. graminis* ANANTHAK. (ANANTHAKRISHNAN, 1956)
26.	*Sericothrips lineatus* (SCHMUTZ)	*Rhamphothrips lineata* (SCHMUTZ)	*Deuterobrachythrips lineata* SCHMUTZ	*Sericothrips lineatus* (SCHMUTZ) (PRIESNER, 1949)
27.	*Sericothrips occipitalis* HOOD			*S. occipitalis* HOOD (ANANTHAKRISHNAN, 1960)
28.	*Sericothrips ramaswamiahi* (KARNY)	*Hydatothrips ramaswamiahi* K.	*H. ramaswamiahi* KARNY	*S. ramaswamiahi* (KARNY) HARTWIG, 1952

Serial number	Valid names as recognised today	RAMAKRISHNA & MARGABANDHU, 1940	SHUMSHER, 1945	Others
29.	*Sericothrips solanifolii* (SHUMSHER)		*Hydatothrips solanifolii* SHUMSHER	*S. solanifolii* (SHUMSHER) (HARTWIG, 1952)
30.	*Sericothrips tricinctus* HOOD			*S. tricinctus* HOOD (ANANTHAKRISHNAN, 1961)
	Subtribe *Scirtothripina* PRIESNER			
	Genus *Anascirtothrips* BHATTI			
31.	*Anascirtothrips arorai* BHATTI			*A. arorai* BHATTI. (BHATTI, 1961)
	Genus *Scirtothrips* SHULL			
32.	*Scirtothrips dorsalis* HOOD	*S. dorsalis* HOOD	*Anaphothrips (Scirtothrips) dorsalis* (HOOD)	
33.	*Scirtothrips fulleri* FAURE			*S. fulleri* FAURE (SESHADRI & ANANTHAKRISHNAN, 1954)
34.	*Scirtothrips oligochaetus* (KARNY)	*Anaphothrips oligochaetus* KARNY		*S. oligochaetus* (KARNY) (BHATTI, 1962a)
	Genus *Sericothripoides* BAGNALL			
35.	*Sericothripoides bispinosus* BAGNALL	*Dendrothrips bispinosus* BAGNALL	*D. (Monochaetella) bispinosus* BAGNALL	*Sericothripoides bispinosus* (BAGN.) (BAGNALL, 1929; see also HOOD, 1935; also ANANTHAKRISHNAN, 1962).
	Tribe Thripini PRIESNER			
	Subtribe Anaphothripina PRIESNER			
	Genus *Anaphothrips* UZEL			
	Subgenus *Neophysopus* SCHMUTZ			
36.	*Anaphothrips flavicinctus* (KARNY)	*Anaphothrips flavicinctus* (KARNY), *A. citricinctus* (BAGNALL).	*A. flavicinctus* (KARNY)	*Anaphothrips (Neophysopus) flavicinctus* KARNY (ANANTHAKRISHNAN, 1959-1960)

	Subgenus *Dantabahuthrips* SHUMSHER			
37.	*Anaphothrips sacchari* SHUMSHER		*A. (D). sacchari* SHUMSHER	*Neophysopus sacchari* (SHUMSHER) (BHATTI, 1962b)
	Genus *Aptinothrips* HALIDAY			
38.	*Aptinothrips rufus* (GMELIN)	*A. rufus var. connaticornis* UZEL	*A. rufus* var. *connaticornis* UZEL	
	Genus *Caprithrips* FAURE			
39.	*Caprithrips analis* FAURE			*Caprithrips analis* FAURE (ANANTHAKRISHNAN, 1961)
	Genus *Chaetanophothrips* PRIESNER			
40.	*Chaetanaphothrips signipennis* (BAGNALL)	*Scirtothrips signipennis* BAGNALL	*Anaphothrips (Scirtothrips) signipennis* BAGNALL	*C. signipennis* (BAGNALL) (HOOD, 1954; STANNARD, 1955)
	Genus *Dendrothripoides* BAGNALL			
41.	*Dendrothripoides ipomeae* BAGNL.	*D. ipomeae* BAGNL.		
		Achaetothrips mundus (KARNY)		
	Genus *Exothrips* PRIESNER			
42.	*Exothrips hemavarna* (R. & M.)	*Oxythrips hemavarna* (R. & M.)	*Anaphothrips (Chaetanaphothrips) hemavarna* (R. & M.)	*Exothrips hemavarna* (R. & M.) (SAKIMURA & ANANTHAKRISHNAN, 1962); *Exothrips madrasensis* ANAN. (ANANTHAKRISHNAN, 1956).
	Genus *Hemianaphothrips* PRIESNER			
43.	*Hemianaphothrips palmae* RAMAK.	*H. palmae* RAMK.	*Anaphothrips (Hemianaphothrips) palmae* (RAMK.)	
	Genus *Indusiothrips* PRIESNER			
44.	*Indusiothrips seshadrii* PRIESNER			*I. seshadrii* PRIESNER (PRIESNER, 1952)

Serial number	Valid names as recognised today	RAMAKRISHNA & MARGABANDHU, 1940	SHUMSHER, 1945	Others
	Genus *Perissothrips* HOOD			
45.	*Perissothrips aureus* ANANTHAK.			*P. aureus* ANANTHAK. (ANANTHAKRISHNAN, 1954)
46.	*Perissothrips parviceps* HOOD	*P. parviceps* HOOD	*P. parviceps* HOOD	
	Subtribe Thripina PRIESNER			
	Genus *Aroidothrips* ANANTHAK.			
47.	*Aroidothrips longistylus* ANAN.			*A. longistylus* ANANTHAK. (ANANTHAKRISHNAN, 1960)
	Genus *Ayyaria* KARNY			
48.	*Ayyaria chaetophora* KARNY	*A. chaetophora* KARNY	*A. chaetophora* KARNY	
	Genus *Bathrips* BHATTI			
49.	*Bathrips melanicornis* (SHUMSHER)		*Taeniothrips melanicornis* SHUMSHER	*Bathrips melanicornis* (SHUM.) (BHATTI, 1962a)
	Genus *Bolacidothrips* PRIESNER			
50.	*Bolacidothrips oryzae* MOULTON			*B. oryzae* MOULTON (BHATTI, 1962b)
	Genus *Bolacothrips* UZEL			
51.	*Bolacothrips bicolor* ANANTHAK.			*B. bicolor* ANANTHAK. (ANANTHAKRISHNAN, 1960)
	Genus *Chloethrips* PRIESNER			
52.	*Chloethrips bambusae* (SHUM.)		*Thrips bambusae* SHUM.	*Chloethrips bambusae* (SHUM.) (BHATTI, 1962b) *Thrips (Oxyrrhinothrips) bambusae* PATEL & PATEL. (PATEL & PATEL, 1955)
53.	*Chloethrips faurei* BHATTI			*Chloethrips faurei* BHATTI (BHATTI, 1962b)
54.	*Chloethrips indicus* (R. & M.)	*Fulmekiola indica* (R. & M.)	*Fulmekiola indica* (R. & M.)	*Chloethrips indicus* (R. & M.) (BHATTI, 1962b) *Thrips indicus* (R. & M.)

56.	*Chloethrips saccharicidus* (R. & M.)	*Fulmekiola saccharicida* R. & M.	*Fulmekiola saccharicida* R. & M.	(R. & M.) (BHATTI, 1962b) *Thrips saccharicida* (R. & M.) (ANANTHAKRISHNAN, 1957)
	Genus *Ctenidothrips* PRIESNER			
57.	*Ctenidothrips bambusae* PRIESNER			*C. bambusae* PRIESNER (PRIESNER, 1952)
	Genus *Dorcadothrips* PRIESNER			
58.	*Dorcadothrips nilgiricus* R. & M.	*D. nilgiricus* R. & M.	*D. nilgiricus* R. & M.	
	Genus *Euphysothrips* BAGNALL			
	Subgenus *Euphysothrips* s. str.			
59.	*Euphysothrips minozzii* BAGNALL	*E. minozzii* BAGNALL	*E. minozzii*	
60.	*Euphysothrips fungivora* (RAMK.)	*Anaphothrips fungivora* RAMK.	*A. (Chaetanaphothrips) fungivora* RAMK.	*Euphysothrips fungivora* (RAMK.) (SAKIMURA & ANANTHAKRISHNAN, 1962)
	Subgenus *Megaphysothrips* R. & M.			
61.	*Euphysothrips (M.) subramanii* (R. & M.)	*Megaphysothrips subramanii* R. & M.	*E. subramanii* (R. & M.)	*E. (M.) subramanii* (R. & M.) (ANANTHAKRISHNAN, 1959)
	Genus *Frankliniella* KARNY			
62.	*? Frankliniella insularis* (FRANKLIN)			
63.	*Frankliniella intonsa* (TRYBOM)		*F. intonsa* (TRYBOM)	
64.	*Frankliniella paucispinosa* MOULTON			*F. paucispinosa* MOULTON (ANANTHAKRISHNAN, 1961)
65.	*Frankliniella schultzei* (TRYBOM.)			*F. schultzei* (TRYBOM) (ANANTHAKRISHNAN, 1957)
65.	*Frankliniella sulphurea* SCHMUTZ	*F. sulphurea* SCHM.	*F. sulphurea* SCHM.	

Serial number	Valid names as recognised today	RAMAKRISHNA & MARGABANDHU, 1940	SHUMSHER, 1945	Others
66.	*Frankliniella unicolor* MORGAN			*F. unicolor* MORGAN (ANANTHAKRISHNAN, 1954)
67.	*Frankliniella paucispinosa* MOULTON			*F. paucispinosa* MOULTON (ANANTHAKRISHNAN, 1962)
	Genus *Gnomonothrips* R. & M.			
68.	*Gnomonothrips coimbatorensis*	*G. coimbatorensis* R. & M.	*G. coimbatorensis* R. & M.	*Gnomonothrips coimbatorensis* R. & M. (ANANTHAKRISHNAN, 1962)
	Genus *Microcephalothrips* BAGNALL			
69.	*Microcephalothrips abdominalis* (CRAWFORD)	*Stylothrips brevipalpis* KARNY	*Microcephalothrips brevipalpis* (KARNY)	*Microcephalothrips abdominalis* (CRAWFORD) (BAILEY, 1937; JAGOTA, 1961).
	Genus *Monilothrips* MOULTON			
70.	*Monilothrips kempi* MOULTON	*M. kempi* MOULTON	*M. kempi* MOULTON	*M. kempi* MOULTON (HOODS & JACOT-GUILLARMOD, 1961)
	Genus *Mycterothrips* TRYBOM			
71.	*Mycterothrips setiprivus* KARNY	*M. setiprivus* KARNY	*M. setiprivus* KARNY	
72.	*Mycterothrips pseudosetiprivus* R. & M.	*M. pseudosetiprivus* R. & M.	*M. pseudosetiprivus* R. & M.	
	Genus *Neocorynothrips* R. & M.			
73.	*Neocorynothrips asiaticus* R. & M.	*N. asiaticus* R. & M.	*N. asiaticus* R. & M.	*N. asiaticus* R. & M. (ANANTHAKRISHNAN, 1962)
	Genus *Neolimothrips* SHUMSHER			
74.	*Neolimothrips binervis* (KOBUS)	*Bregmatothrips binervis (Kobus), B. ramakrishnae* BAGNALL	*Limothrips (Neolimothrips) saccharivorus* SHUMSHER, *B. binervis* (KOBUS)	
75.	*Neolimothrips brachycephalus* SHUMSHER		*Limothrips (Neolimothrips) brachycephalus* SHUMSHER.	

77.	*Physothrips setiventris* BAGNALL	*Physothrips setiventris* BAGNALL	*Taeniothrips setiventris* (BAGNALL)	*Physothrips setiventris* BAGNALL (BHATTI, 1962a)
	Genus *Projectothrips* MOULTON			
78.	*Projectothrips pandani* ANANTHAK.			*P. pandani* ANANTHAK. (ANANTHAKRISHNAN, 1953, '62)
79.	*Projectothrips pruthi* MOULTON	*P. pruthi* MOULTON	*P. pruthi* MOULTON	
	Genus *Ramakrishnothrips* SHUMSHER			
80.	*Ramakrishnothrips cardamomi* (RAMK.)	*Taeniothrips cardamomi* RAMK.	*Neocorynothrips (Ramakrishnothrips) cardamomi* (RAMK.)	
81.	*Ramakrishnothrips jonnaphilus* (RAMK.)	*Physothrips jonnaphila* (RAMK.)	*Neocorynothrips (Ramakrishnothrips) jonnaphila* (RAMK.)	
	Genus *Ramaswamiahiella* KARNY			
82.	*Ramaswamiahiella subnudula* KARNY	*Thrips subnudula* (KARNY)	*Thrips (Ramaswamiahiella) subnudula* (KARNY)	
	Genus *Rhopalandrothrips* PRIESNER			
83.	*Rhopalandrothrips nilgiriensis* ANANTHAK.			*R. nilgiriensis* ANANTHAK. (ANANTHAKRISHNAN, 1960)
84.	*Rhopalandrothrips orchidii* ANANTHAK.			*R. orchidii* ANANTHAK. (ANANTHAKRISHNAN, 1961)
85.	*Rhopalandrothrips ricini* SHUMSHER		*Taeniothrips (Rhopalandrothrips) ricini* SHUMSHER	
	Genus *Scolothrips* HINDS			
86.	*Scolothrips asura* R. & M.	*S. asura* R. & M.	*S. asura* R. & M.	
87.	*Scolothrips indicus* PRIESNER	*S. sexmaculatus* PERGANDE	*S. sexmaculatus* PERGANDE	*S. indicus* PRIESNER. (PRIESNER, 1950; ANANTHAKRISHNAN, 1957).

Serial number	Valid names as recognised today	RAMAKRISHNA & MARGABANDHU, 1940	SHUMSHER, 1945	Others
	Genus *Taeniothrips* AMYOT & SERVILLE Subgenus *Taeniothrips* s. str.			
88.	*Taeniothrips andrewsi* (BAGNALL)	*Physothrips andrewsi* BAGNALL	*T. andrewsi* (BAGNALL)	
89.	*Taeniothrips chaetogastra* RAMK.	*T. chaetogastra* RAMK.	*T. chaetogastra* RAMK.	
90.	*Taeniothrips claratris* SHUMSHER		*T. claratris* SHUMSHER	*Mycterothrips moultoni* S & A (BHATTI, in press)
91.	*Taeniothrips distalis* KARNY	*T. distalis* KARNY, *T. brunneicornis* (BAGNALL)	*T. distalis* KARNY, *T. brunneicornis* (BAGNALL)	*T. distalis* KARNY (PRIESNER, 1938)
92.	*Taeniothrips flavidulus* (BAGNALL)	*Physothrips flavidulus* BAGNALL	*T. flavidulus* (BAGNALL)	
93.	*Taeniothrips frici* (UZEL)		*T. frici* (UZEL)	
94.	*Taeniothrips ghoshi* BHATTI			*T. ghoshi* BHATTI (BHATTI, 1962a)
95.	*Taeniothrips immsi* (BAGNALL)	*Physothrips immsi* BAGNALL	*T. immsi* (BAGNALL)	
96.	*Taeniothrips longiceps* (BAGNALL)	*Physothrips longiceps* BAGNALL	*T. longiceps* (BAGNALL)	
97.	*Taeniothrips major* BAGNALL	*T. major* BAGNALL	*T. major* BAGNALL	
98.	*Taeniothrips minor* (BAGNALL)	*T. balsaminae* PRIESNER, *Physothrips minor* BAGNALL	*T. minor* (BAGNALL)	
99.	*Taeniothrips morosus* PRIESNER			*T. morosus* PRIESNER (PRIESNER, 1938)
100.	*Taeniothrips moultoni* (SESHADRI &			*Mycterothrips moultoni* S. & A. (SESHADRI & ANANTHAKRISHNAN,

		sothrips vitata (SCHM.)		
102.	*Taeniothrips rhopalantennalis* SHUM.		*T. rhopalantennalis* SHUM.	
103.	*Taeniothrips simplex* (MORISON)	*T. gladioli* M. & S.	*T. gladioli* M. & S.	*T. gladiolii* M. & S. (ANANTHAKRISHNAN, 1960)
104.	*Taeniothrips sulfuratus* PRIESNER			*T. sulfuratus* PRIESNER (ARORA & BHATTI, 1961)
105.	*Taeniothrips traegardhi* (TRYBOM)	*T. niloticus* PRIESNER, *Anaphothrips ramakrishnai* KARNY.	*T. niloticus* PRIESNER, *Anaphothrips (Chaetanaphothrips) ramakrishnai* KARNY	*T. traegardhi* (TRYBOM) (PRIESNER, 1938; SAKIMURA & ANANTHAKRISHNAN, 1962)
	Subgenus *Lefroyothrips* PRIESNER			
106.	*Taeniothrips (Lefroyothrips) cuscutae* PRIESNER			*T. (L.) cuscutae* PRIESNER (PRIESNER, 1938) *T. devii* ARORA & BHATTI (ARORA & BHATTI, 1960)
107.	*Taeniothrips (Lefroyothrips) lefroyi* (BAGNALL)	*Physothrips lefroyi* BAGNALL	*T. lefroyi* (BAGNALL)	*T. (Lefroyothrips) lefroyi* (BAGNALL) (PRIESNER, 1938)
	Subgenus *Pongamiothrips* ANANTHAK.			
108.	*Taeniothrips (Pongamiothrips) peculiaris* (BAGNALL)	*Physothrips peculiaris* BAGNALL *Physothrips pingala* (RAMK.)	*T. pingala* RAMK.	*T. (Pongamiothrips) peculiaris* (BAGNALL) (ANANTHAKRISHNAN, 1962)
	Genus *Thrips* LINNAEUS Subgenus *Thrips* s. str.			
109.	*Thrips apicatus* PRIESNER	*T. apicatus* PRIESNER	*T. apicatus* PRIESNER	
110.	*Thrips carthami* SHUMSHER		*T. carthami* SHUMSHER	
111.	*Thrips coloratus* SCHMUTZ	*T. florum* SCHMUTZ		*T. coloratus* SCHMUTZ (PRIESNER, 1934)
112.	*Thrips florum* SCHMUTZ	*T. florum* SCHM.	*T. florum* SCHM.	

Serial number	Valid names as recognised today	RAMAKRISHNA & MARGABANDHU, 1940	SHUMSHER, 1945	Others
114.	*Thrips hawaiiensis* (MORGAN)	*T. albipes* BAGNALL	*T. albipes* BAGNALL	
115.	*Thrips immsi* BAGNALL	*T. immsi* BAGNALL	*T. immsi* BAGNALL	
116.	*Thrips kallarensis* (ANANTHAK.)			*Ramaswamiahiella Kallarensis* ANANTHAK. (ANANTHAKRISHNAN, 1960)
117.	*Thrips melaneurus* BAGNALL	*T. melaneurus* BAGN.	*T. melaneurus* BAGN.	
118.	*Thrips flavus* SCHR.	*T. nilgiriensis* RAMK.	*T. nilgiriensis* RAMK.	
119.	*Thrips pallidulus* BAGNALL	*T. pallidulus* BAGN.	*T. pallidulus* BAGN.	
120.	*Thrips palmi* KARNY	*T. palmi* KARNY	*T. palmi* KARNY	*T. palmi* KARNY (ANANTHAKRISHNAN, 1954)
121	*Thrips parvus* SCHMUTZ	*T. parvus* SCHMUTZ	*T. parvus* SCHMUTZ	
122	*Thrips tabaci* LIND.	*T. tabaci* LIND.	*T. tabaci* LIND.	
123	*Thrips temporatus* BAILEY	*T. setosus* MLT.	*T. (Ramaswamiahiella) setosus* MOULTON	
	Subgenus *Oxyrrhinothrips* PRIESNER			
124	*Thrips (O.) beharensis* R. & M.	*O. beharensis* R. & M., *O. rostrata* R. & M.	*T. (O.) beharensis* R. & M.	
125	*Thrips (O.) schousteriana* PATEL & PATEL			*Thrips (Oxyrrhinothrips) schousteriana* PATEL & PATEL (PATEL & PATEL, 1955)
	Subgenus *Isothrips* PRIESNER			
126	*Thrips (Isothrips orientalis)* (BAGNALL)	*Isoneurothrips orientalis* BAGNALL	*Thrips (Isoneurothrips) orientalis* (BAGNALL)	*Thrips (Isothrips) orientalis.* (PRIESNER, 1940)
	Subfamily **Heliothripinae**			

128	*Astrothrips octarticulata* (SCHMUTZ)	*Trypnactothrips octarticulata* SCHMUTZ	*Trypnactothrips octarticulata* SCHMUTZ	
	Genus *Caliothrips* DANIEL			
129	*Caliothrips graminicola* (BAGNALL & CAMERON)			*C. graminicola* (BAGN. & CAM.) (ANANTHAKRISHNAN, 1961)
130	*Caliothrips indicus* (BAGNALL)	*Heliothrips indicus* BAGNALL	*Hercothrips indicus* (BAGNALL)	
131	*Caliothrips minutissimus* (BAGNALL)	*Heliothrips minutissimus* BAGNALL	*Hercothrips minutissimus* (BAGNALL)	
	Genus *Helionothrips* BAGNALL			
132	*Helionothrips brunnei pennis* (BAGNALL)	*Heliothrips brunneipennis* BAGNALL	*Hercothrips brunneipennis* (BAGNALL)	
133	*Helionothrips kadaliphilus* (R. & M.)	*Heliothrips kadaliphilus* R. & M.	*Hercothrips kadaliphilus* (R. & M.)	*Helionothrips kadaliphilus* (R. & M.) (PRIESNER, 1936)
	Genus *Heliothrips* HALIDAY			
134	*Heliothrips haemorrhoidalis* (BOUCHE)	*H. haemorrhoidalis* (BOUCHE)	*H. haemorrhoidalis* (BOUCHE)	
	Genus *Hercinothrips* BAGNALL			
135	*Hercinothrips bicinctus* (BAGNALL)			*H. bicinctus* (BAGNALL) (ANANTHAKRISHNAN, 1961)
	Genus *Panchaetothrips* BAGNALL			
136	*Panchaetothrips indicus* BAGNALL	*P. indicus* BAGNALL	*P. indicus* BAGNALL	
	Genus *Parthenothrips* UZEL			
137	*Parthenothrips dracaenae* (HEEGER)	*P. dracaenae* (HEEGER)	*P. dracaenae* (HEEGER)	
	Genus *Phibalothrips* HOOD			
138	*Phibalothrips perigueyi* (FAURE)	*Reticulothrips peringueyi* FAURE	*P. peringueyi* (FAURE)	
	Genus *Retithrips* MARCHAL			
139	*Retithrips syriacus* (Mayet)			*R. syriacus* (MAYET) (SESHADRI & ANANTHAKRISHNAN, 1954)

Serial number	Valid names as recognised today	RAMAKRISHNA & MARGABANDHU, 1940	SHUMSHER, 1945	Others
140	Genus *Rhipiphorothrips* HOOD			
141	*Rhipiphorothrips bicolor* (BAGNALL)	*R. bicolor* (BAGNALL)		
142	*Rhipiphorothrips cruentatus* HOOD	*R. cruentatus* HOOD	*R. cruentatus* HOOD	*R. karna* RAMAKRISHNA (1928)
	Genus *Selenothrips* KARNY			
143	*Selenothrips indicus* (BAGNALL)	*Brachyurothrips indicus* (BAGNALL)	*S. indicus* (BAGNALL)	
144	*Selenothrips mendax* (SCHMUTZ)	*S. rubrocinctus* (GIARD).	*S. mendax* (SCHMUTZ)	
145	*Selenothrips rubrocinctus* (GIARD)	*S. rubrocinctus* (GIARD).	*S. rubrocinctus* (GIARD).	

Systematics of the suborder Terebrantia

Several useful and reliable characters such as the number and nature of the antennal segments and sense cones, the nature of the mouthcone, chaetotaxy of the head, pronotum, abdominal segments, the type of wing and its chaetotaxy, the presence or absence of foretibial tooth, the nature of the ovipositor and others have been taken as criteria to establish genera and species. The shape and size of the meso- and metasternal furca and the presence or absence of the needle-like median projection called the 'spinula' have also been found to be of considerable importance in the taxonomy of Terebrantia (PRIESNER, 1957). PRIESNER distinguishes four main types:

a) Metasternal furca long, forked and directed forwards;
b) Both meso- and metasterna with the spinula;
c) Only the mesosternum with the spinula;
d) Both meso- and metasterna without the spinula.

PRIESNER's recent classification involving the tribes and subtribes of the order are as follows:

Suborder	**Terebrantia** HALIDAY
Superfamily	**Aeolothripoidea** HOOD
Family	**Aeolothripidae** HOOD
Subfamily	**Erotidothripinae** * PRIESNER
	Melanothripinae * BAGNALL
	Mymarothripinae PRIESNER
	Aeolothripinae BAGNALL
Tribe	**Orothripini** PRIESNER
	Franklinothripini * PRIESNER
	Aeolothripini PRIESNER
Superfamily	**Merothripoidea** HOOD
Family	**Merothripidae** * HOOD
Superfamily	**Thripoidea** HOOD
Family	**Heterothripidae** BAGNALL
Tribe	**Heterothripini** * PRIESNER
	Hemithripini * PRIESNER
	Opadothripini PRIESNER
	Faurielliini * PRIESNER

*) Representatives of these groups have not been so far reported from the Indo-Ceylon region.

Family	**Thripidae** UZEL
Subfamily	**Thripinae** KARNY
Tribe	**Chirothripini** PRIESNER
	Dendrothripini PRIESNER
	Sericothripini PRIESNER
Subtribe	**Sericothripina** PRIESNER
	Scirtothripina PRIESNER
	Thripini PRIESNER
Subtribe	**Anaphothripina** PRIESNER
	Thripina PRIESNER
Subfamily	**Heliothripinae** KARNY

Key to the Superfamilies, families and subfamilies of Indian Terebrantia.

1. Ovipositor curved upwards; forewings usually broad and rounded at apex, with two longitudinal veins, front margin without the fringe of long hairs. Antennae 9-segmented. (Superfamily **Aeolothripoidea** HOOD, Family **Aeolothripidae** UZEL) 2
   Ovipositor curved downwards. Wings more or less pointed at apex; foremargin with the fringe of hairs present. Antennae 6-9 segmented. (Superfamily **Thripoidea** HOOD) 5
2. Antennae stout, with conspicuous rigid bristles, on intermediate segments 3
   Antennae more or less slender, with segments 3 and 4 long, without raised bristles. 4
3. Wings distinctly widened towards apex, racket-shaped. Head not produced in front of eyes, with a pair of long interocellar setae. Prothorax not reduced. . . . . Subfamily **Mymarothripinae** BAGNALL
4. Wings about parallel-sided, sometimes slightly narrowed in basal half, but never distinctly racket-like . . Subfamily **Aeolothripinae** BAGNALL
5. Antennae without sense cones or with short triangular ones. Antennae 9-10 segmented. Foretarsus usually with a claw-like appendage at base of second segment . . . . . Family **Heterothripidae** BAGNALL
   Antennae with slender sense cones, which are simple or forked. Antennae 6-9 segmented. Foretarsus sometimes with a claw-like appendage . . . . . **Family Thripidae** UZEL
   Dorsum of body not polygonally reticulate, atmost with transverse striae. Antennae 7 or 8 segmented, rarely 9; terminal antennal segments not long and thin . . . . . Subfamily **Thripinae** KARNY

Dorsum of body deeply reticulate, with polygonal areas; terminal antennal segments long and thin — needle-like . . . . . Subfamily **Heliothripinae** KARNY

Key to the Genera of Indian Terebrantia
Family **Aeolothripidae** UZEL

1. Forewings parallel sided, atmost very little widened at apex. . . . 2
   Forewings narrowed medially and little enlarged at apex. . . . 3
   Forewings not parallel sided, little to very much widened at apex. 4
2. Forewings with cross-bars; sensory areas on antennal segments 3 & 4 linear; segments 6-9 closely united to form a unit. Maxillary palp 4-jointed. . . . . *Aeolothrips* HALIDAY
   Forewings without cross bars, but, with a dark, longitudinal band along posterior margin. Antennal segments freely movable, the last three appearing to form a unit. Sensory areas on 3 & 4 clearly sinuate, confining to the entire length of the segments and incompletely encircling the apex of each segment like a hook, sensory areas on 5, 6, 7 and 8 clearly elongate. Segments 5-8 clearly shorter than 4 & 5. Maxillary palp 5-segmented . . . . . *Erythrothrips* MOULTON.
   Subgen. *Aduncothrips* nov. *A. asiaticus* (R. & M.)
4. Forewings with cross bars; antennal segments 6-9 united to form a unit. Segments 3 & 4 with elongate straight to sinuate sensory areas, each confined to the apical half of the segments. Maxillary palp 2-3 segmented; labial palp 3-4 segmented . . . . . *Allelothrips* BAGNALL (*A. ananthakrishnani* STANNARD)
5. Forewings slightly, but clearly widened at apex; maxillary palp with 7-8 joints; labial palp 3-5 segmented. Antennal segments 3 & 4 each, with two elongate sensory areas. . . . . *Orothrips* MOULTON (*O. raoi* MOULTON)
   Forewings very much widened at apex, racket-like. Antenna stout, with conspicuous rigid bristles. Maxillary palp 8-segmented; labial palp 4-segmented. . . . *Mymarothrips* BAGNALL (*M. garuda* R & M)

Superfamily **Thripoidea**
Family **Heterothripidae**

Antenna 9-segmented; segments 3 & 4 with a triangular, 2-segmented cones. Foretarsus with a claw-like appendage at the base of the second segment. . . . . *Adiheterothrips* RAMK. (*A. jambudvipae* RAMK.)

Family **Thripidae**
Subfamily **Thripinae**

1. Head distinctly produced in front of eyes into a projection, on which is inserted the antenna. 2
   Head little or not produced. 9
2. Antenna stout, eyes flat; forefemora enlarged. Males apterous, brachypterous or macropterous. 3
   Antenna normal; forefemora enlarged. 4
3. Antennal segment 2 usually produced exteriorly at apex; sense cones simple or forked. Forefemora often at apex of exterior angle, with a hook-like process. Abdominal tergites and sternites with long, nearly parallel transverse lines; hind margin of tergites II-VIII usually with a series of short, broad lobes; sternites usually with scallops. (*Chirothripini*). . . . . *Chirothrips* HALIDAY
4. Posterior angles of prothorax with two pairs of bristles. 5
   Posterior angles of prothorax with only one pair of bristles. . . . 8
5. Antennal segments 3 and 4 with forked sense cones. 6
   Antennal segments 3 and 4 with simple sense cones. 7
6. Mouth cone broadly rounded. Abdominal segments I-VII without fringes. . . . . *Ramakrishnothrips* SHUMSHER
7. Mouth cone long and narrow. Abdominal segments I-VII with complete, but sparse fringe of teeth at hind border . . . . . *Gnomonothrips* RAMK. & MARG. (*G. coimbatorensis* R & M)
   Comb plates on hind margin of abdominal tergites absent. Maxillary palp 2-segmented. . . . . *Neolimothrips* SHUMSHER *)
8. Abdominal segments VIII & IX or VIII-X in the female with 1-2 pairs of extra stout bristles. Segment VIII without comb. Maxillary palp 2-segmented. Sense cones simple. . . . . *Limothrips* HALIDAY (*L. ceralium* HALIDAY)
   Abdominal segments without the extra pairs of stout bristles; apex of abdomen suddenly pointed. Sense cones forked. Maxillary palp 3-segmented. . . . . *Neocorynothrips* RAMK. & MARG. (*N. asiaticus* R & M)
9. Antenna 7 to apparently 9-jointed. Body flat and broad; head strongly transverse; wings dendrothripoid, i.e., hind margin straight and outer margin curved at apex. Upper surface of head and sides of

*) In the opinion of the author, the genus *Neolimothrips* though close to *Bregmatothrips* HOOD, has to be retained, particularly in view of the absence of scallops or comb-plates on the posterior margin of abdominal tergites II - VIII. Therefore a true *Bregmatothrips* as typified by *B. venustus* HOOD does not occur.

abdominal segments with conspicuous polygonal reticulation. Furca of metasternum long, forked, directed forwards. (*Dendrothripini*) . . 10
Wings not dendrothripoid. Body with no polygonal reticulation, at most with transverse striae. Antenna 7 or 8-segmented. Body flattened. Abdomen with dense microtrichia (*Sericothripini*) . . . 13
Wings not dendrothripoid. Body without conspicuous polygonal reticulation, at most with transverse anastomosing striae; sometimes part of head and pronotum reticulate. Antennae 7-8 segmented. Abdomen without rows of microtrichia. (*Thripini*) 16

10. Maxillary palp 2-segmented. 11
Maxillary palp 3-segmented. 12

11. Antenna apparently 9-segmented. Forewings with only a faint upper vein; apex of abdomen with very short setae; body not strongly sculptured. . . . . *Pseudodendrothrips* SCHMUTZ
Antenna 7 or 8 segmented; forewings with both upper and lower veins; body strongly sculptured. (to include Bagnall's *Dendrothripiella*). . . . . *Dendrothrips* UZEL

12. Antenna 7-segmented; forewings with two longitudinal veins; abdominal tergites VII & VIII with a complete ciliary fringe arranged closely, the rest with fringes wanting only at middle third of each segment. . . . . *Projectothripoides* SHUMSHER
Antenna 8-segmented; forewings with only a submarginal vein, the lower vein absent. Mouth cone long and narrow extending much beyond prosternum. . . . . *Cerothrips* ANANTHAKRISHNAN *)

13. Forewings with one longitudinal vein regularly set with bristles; posterior angles of pronotum with one bristle at each angle. Abdominal tergites I-V with a pair of closely set bristles; segment IX with more than 4 pairs of long bristles, the secondary bristles also well developed. Posterior margins of abdominal segments with a partial or complete comb. (*Sericothripina*) . . *Sericothrips* HALIDAY
Abdominal tergites without a pair of closely set bristles. Abdominal segment IX with only the usual pair of median dorsal bristles. Forewings with 1 or 2 longitudinal veins. (*Scirtothripina*) 14

14. Antenna 7-segmented. Prominent pronotal bristles absent. . . . . *Anascirtothrips* BHATTI (*A. arorai* BHATTI)
Antenna 8-segmented. At least one pair of prominent bristles on hind margin of pronotum. 15

*) The genus *Cerothrips* though close to *Dendrothrips* has to be retained particularly in view of the absence of the lower vein and the nature of the mouth cone.

15. Forewings with only one longitudinal vein. . . . . *Sericothripoides* BAGNALL (*S. bispinosus* BAGNALL)
Forewings with two longitudinal veins . . . . *Scirtothrips* SHULL
16. Pronotum without any strong bristles 17
Pronotum with at least one conspicuous bristle at hind angles . . 20
Pronotum with two well developed bristles at hind angles . . . 23
17. Wings and ocelli lacking in both sexes 18
Wings and ocelli present in both sexes. 19
18. Body elongate. Antenna 6- to 8-segmented. Interocular setae inconspicuous. Dorsal bristles of IX abdominal segment fine. . . . . *Aptinothrips* HALIDAY (*A. rufus* GMELIN)
Body depressed. Antenna 8-segmented. One pair of stout, dorsal bristles on IX segment. . . . *Caprithrips* FAURE (*C. analis* FAURE)
19. Head distinctly reticulate. Wings unicolorous, opaque. Bristles of apical abdominal segments dilate and fringed. Microtrichia of abdomen vestigial . . . *Indusiothrips* PRIESNER (*I. seshadrii* PRIESNER)
Head not clearly reticulate. Wings not opaque. Bristles of abdomen pointed, microtrichia well developed . . . . . *Dendrothripoides* BAGNALL (*D. ipomeae* BAGNALL)
20. Wings and ocelli always present in females, present or absent in males. Antenna 8 or 9 segmented. 21
21. Antenna 8 segmented; segments 4 or 5 in males clearly asymmetrical, sometimes segment one, much enlarged. Foretibia in the males with a distinct tooth at apex. . . . . *Exothrips* PRIESNER
Antennal segments 4 or 5 normal. Males often with a stout, dark, thorn-like setae on abdominal segment IX. . . *Anaphothrips* UZEL *
Antenna clearly 9 segmented, style with three clearly separate segments . . . . . , 22
Foretibia in both sexes without tooth. Males macropterous, brachypterous, or apterous. Setae at posterior angles of pronotum not very strong. . . . . Subgenus *Neophysopus* SCHMUTZ
Wings broad with conspicuous veins and distinctly undulated fringe. Antennal style long, intermediate abdominal tergites without pairs of bristles at middle. Posterior angles of pronotum with two small hyaline setae. . . . . Subgenus *Hyalopterothrips* PRIESNER

*) The genus *Anaphothrips* has invariably a line of cleavage on antennal segment 6, resulting in a 3-segmented style, but segment one of style is not as clearly separated as it is in *Hemianaphothrips*. *Neophysopus* lacks the line of cleavage and as such treated as a subgenus. Opinions differ as to the subgeneric status of *Neophysopus*, *Dantabahuthrips* and *Hyalopterothrips* and other Anaphothripine forms.

Foretibia in both sexes with a clear tooth at apex. Males apterous. One small, but conspicuous seta at each hind angle of pronotum . . . . . Subgenus *Dantabahuthrips* SHUMSHER

22. Upper vein series of bristles of forewing interrupted . . . . . Subgenus *Hemianaphothrips* PRIESNER (*H. palmae* RAMK. & MARG.)

23. Antenna 8 segmented; style 2-segmented 24
Antenna 7-segmented, style 1-segmented 39

24. Head small; prothorax very long. Mouth cone very long, reaching much beyond prosternum 25
Head and prothorax normal. Mouth cone short and blunt, not reaching beyond the base of prosternum 26

25. Small forms. Foretibia at apex with tooth. Wings narrow, longitudinal vein with a few bristles . . . . . *Perissothrips* HOOD

26. Pronotum with prominent antero-angular bristles 27
Pronotum without prominent antero-angular bristles 32

27. Maxillary palp 2-segmented 28
Maxillary palp 3-segmented 31

28. Head with a short process. VIII abdominal segment of males with a horn-like process . . . . . . *Dorcadothrips* PRIESNER (*D. nilgiricus* RAMK. & MARG.)
Head without process. VIII abdominal segment of male, not produced 20

29. Antenna slender, style thin; segment 2 not very much longer than 1; wings banded, narrow, with stout bristles. Anteroangulars shorter than anteromarginals. Head and pronotum partly with a polygonal reticulation . . . . . *Ayyaria* KARNY (*A. chaetophora* KARNY)
Antenna slender; segment 2 of style, 2½ - 3 times as long as 1; antero-angulars shorter than anteromarginals; outer postangulars much longer than inner. No reticulation on head and pronotum . . . . . *Aroidothrips* ANANTHAKRISHNAN (*A. longistylus* ANANTHAKRISHNAN)
Antenna not slender and segment 2 of style not very long. Anteroangulars not shorter than anteromarginals. No reticulations on head and pronotum 30

30. Pronotum always with six long bristles on each side — one anteroangulars, one midlateral, two posteroangulars and one postero-marginal. Forewings with two brown spots, sometimes taking the form of bands . . . . . *Scolothrips* HINDS.
Pronotum usually with 4 strong bristles on each side — one anteroangular, one anteromarginal and two postangulars. Midlateral bristles

not strongly developed; both veins of forewings with a regular row of bristles throughout their length . . . . *Frankliniella* SCHMUTZ

31. Body without polygonal reticulation. Segment 6 enlarged; segment 2 of style very long. Abdominal segment II-VII with an incomplete 'comb' and segment VIII with a well developed comb . . . . . *Projectothrips* MOULTON

At most abdomen VIII with a comb which may be complete or incomplete 32

32. Lower vein with a regular series of setae 33

Lower vein with only four setae at the most 37

33. Postangular prothoracic bristles about subequal in length. Spinula on metasternum absent . . . . . *Taeniothrips* AMYOT & SERVILLE

Spinula on metasternum very distinct . . . . *Physothrips* KARNY

Mouth-cone normal 34

Mouth-cone long and narrow surpassing prosternum 36

34. Forevein joined to costa at two or more places. Segment 6 of antenna of male very much enlarged and highly setose; segment 5 always reduced . . . . . *Rhopalandrothrips* PRIESNER

Forewing not joined to costa. Antennal segment 6 of male normal 35

35. Antenna of male normal. Forevein always separate from costa. Abdominal sternites of males, with clear, sensory areas. Postocular spines in a single row . . . . . Subgenus *Taeniothrips* s. str.

Antennal segments 3 & 4 of male four times as long as wide; that of female only twice as long . . . . . Subgenus *Pongamiothrips* ANANTHAKRISHNAN (*P. pecularis* BAGNALL)

Postoculars apparently arranged in two rows. Bristles on posterior angles of prothorax short; bristles on wing veins weak. Males with six spines on tergite IX . . . . Subgenus *Lefroyothrips* PRIESNER

36. Antenna of female 8-segmented, of male 7-segmented . . . . . *Mycterothrips* TRYBOM.

37. Wings banded, narrow; wing bristles never long. Sense cones slender; a pair of strong, but short, hyaline setae at each posterior angle of prothorax . . *Chaetanaphothrips* PRIESNER (*C. signipennis* BAGNALL)

Wings not banded 38

38. Bristles on wing veins, particularly those of the lower veins, very long . . . . . *Euphysothrips* BAGNALL

Anterior marginal and posterior marginal prothoracic setae poorly developed, with 4 pairs of anteromarginals and 4 or 5 pairs of posteromarginals; wing setae not extraordinarily developed; abdominal

apex forming an elongated cone . . Subgenus *Euphysothrips* s. str.
Anterior and posterior marginal setae well developed, with 6 pairs of anterior and 6 pairs of posterior marginals. Wing vein setae, in particular, the lower vein setae, extraordinarily well developed; abdominal tip not forming an elongated cone . . . . . Subgenus *Megaphysothrips* (R & M)
Bristles on wing vein normal, never long. Postangular prothoracic bristles not hyaline as in *Taeniothrips*. Mid-dorsal bristles of abdominal tergites wide apart . *Bathrips* BHATTI (*B. melanicornis* SHUMSHER)

39. Frons projected in front of eyes, sense cones on antennal segments 3 and 4 simple 40
Frons not or little projected beyond eyes; sense cones on 3 and 4 forked 41

40. Pronotum with strong bristles at foremargin; maxillary palpi 2-segmented . . . . . *Bolacidothrips* (*B. oryzae* MOULTON)
Pronotum without strong bristles on foremargin; maxillary palpi 3-segmented . . . *Bolacothrips* (UZEL) (*B. bicolor* ANANTHAKRISHNAN)

41. Posterior margins of abdominal tergites I-VIII with teeth or scallops. Head small . . . . . *Microcephalothrips* CRAWFORD (*M. abdominalis* CRAWFORD)
At most tergite VIII with a comb; other abdominal segments normal 42

42. Forefemora and tibia armed, tarsi unarmed . . . . . *Ctenidothrips* PRIESNER (*C. bambusae* PRIESNER)
Forefemora and tibia unarmed 43

43. Spinula on meso-and metasterna absent . . . *Chloethrips* PRIESNER
Spinula on meso- and metasterna distinct . . . . *Thrips* HALIDAY

44. Mouth-cone long and narrow surpassing base of prosternum . . . . . Subgenus *Oxyrrhinothrips* PRIESNER
Mouth-cone normal, blunt 45

45. Upper vein of forewing with an almost continuous, but irregular series of setae . Subgenus *Isothrips* PRIESNER (*I. orientalis* BAGNALL)
Postangular prothoracic setae short; posterior margins of abdominal sternites with at least 6 pairs of setae . . . . . Subgenus *Ramaswamiahiella* KARNY
Postangular prothoracic setae well developed, almost subequal. Posterior margin of abdominal sternites with three pairs of setae. Head as long as wide or a little longer . . . . . Subgenus *Thrips* s. str.
Outer postangular clearly shorter, inner long; head strongly transverse . . . Subgenus *Epithrips* PRIESNER (*E. uzelianus* PRIESNER)

Subfamily **Heliothripinae**

1. Body without polygonal reticulations, but with very strong wrinkles . . . . . *Rhipiphorothrips* HOOD.
   Body distinctly polygonally reticulate 2
2. Antennal segments 5-7 forming one unit. Head narrowed posteriorly, rounded . . . . . *Astrothrips* PRIESNER
   Four terminal segments of antenna fused to form a conical unit. Body short and stout. Forewings with callosities . . . . . *Retithrips* (*R. syriacus* MAYET)
   Antenna 7-jointed; style one-jointed 3
   Antenna 8-jointed; style 2-jointed 4
3. Wings not banded and without net-like sculpture . . . . . *Phibalothrips* HOOD (*P. peringueyi* FAURE)
   Wings with stout longitudinal veins and with net-like sculpture . . . . . *Parthenothrips* UZEL (*P. dracaenae* HEEGER)
4. Segment X of abdominal segment normal with normal setae . . . 5
   Segment X of abdominal segment cylindrical or stout. Bristles on IX and X exceptionally stout 9
5. Head with raised transverse ridge at base. Wings wide; antennal segments 3 & 4 with forked cones 6
   Head without raised transverse ridge. Wings very narrow; but much broadened at base. Sense cones on 3 & 4 antennal segments simple 7
   Head with a conspicuous, reticulate, collar-like band at posterior margin 8
6. Forewings wider, with 2 pale cross bands; apex pale; costal setae prominent. Head near base with a tooth-like projection. Vertex without arched ridge. Pronotum strongly transverse and clearly shorter than head. Anterior and posterior wing vein with an almost continuous row of setae . . . . . *Hercinothrips* BAGNALL
   Cheeks shorter than eyes. Vertex with an arched ridge. Forewings with two pale cross bands. Apex brown. Anterior vein with a gap between setae. Abdominal tergites II-VII with prominently scalloped areas . . . . . *Helionothrips* BAGNALL
   Forewings dark, with two transverse pale bands; apex dark. Strong bristles on costa and forevein; anterior wing vein with a clear gap, between setae as in *Helionothrips*; legs banded; 3 & 4 segments with forked sense cones . . . . . *Caliothrips* DANIEL

7. Forewings much broadened at base. No strong bristles on costa. Pronotum without lateral planate margins. Cheeks as long as eyes . . . . . *Heliothrips* HALIDAY [*H. haemorrhoidalis* (BOUCHE)]
8. Segment 2 of style thrice as long as segment one . . . . . *Monilothrips* MOULTON (*M. kempi* MOULTON)
9. Apex of antennae long, heliothripoid. Wings with long, dark spines . . . . . *Panchaetothrips* BAGNALL (*P. indicus* BAGNALL)

Key to the species of Indian Terebrantia

A key to all the valid species of Terebrantia from the Indo-Ceylonese region so far recorded is given below, and to avoid repetition of known references, RAMAKRISHNA & MARGABANDHU (1940) *Catalogue of Indian Insects — Thysanoptera* may be referred. References for the species recorded subsequently (1940 - 1962) are given as foot notes in the appropriate places.

Family **Aeolothripidae**

Erythrothrips MOULTON 1911

Subgenus *Aduncothrips* nov.

Antenna 9-segmented, the last three apparently closely united. Maxillary palp 5-jointed. Prothorax shorter than the head. Forewings broad and round, with a dark, longitudinal band at posterior margin as in *Erythrothrips*. Major sensory areas on antennal segments 3 and 4 not linear but very clearly vermicular or sinuate extending throughout, the entire length of the segments and encircling incompletely the apex of the segments. Sensory areas on 5 & 6 elongate, placed distally. Segments 7 & 8 also with elongate sensory areas. Segments 5-8 clearly shorter than 3 & 4 combined.

Type *Erythrothrips asiaticus* R & M

A generic status for the above characters is disputable as is the status of *Audiothrips* MOULTON. While PRIESNER (1949) and BAILEY (1957) have recognized *Audiothrips* as a distinct genus, HARTWIG (1952) is of opinion that the recognition of *Audiothrips* is not justified. However, in the present instance, the differences in the nature of the sensory areas of 3 & 4, as also the specifically elongated instead of the circular nature of the areas on 7 & 8 might justify the separation of *asiaticus* from *Erythrothrips*. At any rate, a subgeneric status is essential, and till more species of *Erythrothrips* as exemplified by *E. arizonae* MOULTON are discovered from India, it seems advisable to place *asiaticus* in a different subgenus.

Aeolothrips HALIDAY 1836

1. Abdominal segment IX of male with claspers. Tergites of segments IV & V with well developed tooth-like plates 2
   Abdominal segment IX of male without claspers; tergites IV & V devoid of tooth-like plates 3
2. Antennal segment 3, 4.5 times as long as broad. Segment 5, 3-4 times as long as segments 6-9. Sensory areas on 3 & 4 clearly elongate; major mesosternal setae 26-32 μ long. Base, middle and tip of wing colourless, with two grey brown bands in between . . . *fasciatus* LINN.
   Antennal segment 3, five times as long as broad. Segment 5, thrice as long as segments 6-9; sensory areas on 4, long broad, almost claviform, running to the middle of the joint or a little beyond; sensory area of 3, not reaching beyond middle. Forewing as in *fasciatus*, the distal cross band commencing at the cross vein . . . . . *collaris* var. *fulvicollis* * BAGNALL
3. Antennal segment 3, 7.5 times as long as wide; segment 5, 2.5 times as long as 6, and clearly longer than 6-9; forewings with two distinct, broad, transparent cross-bands, on a little beyond base and the other a little beyond the centre . . . . . *pandyani* (R & M) **)

Genus *Allelothrips* [1] BAGNALL 1932

This genus is represented in India by a single species, *A. ananthakrishnani* [2] STANNARD.

Genus *Mymarothrips* BAGNALL 1928

The only known member of this genus in India is *M. garuda* RAMK. & MARG.

Genus *Orothrips* MOULTON 1907

A single species, *O. raoi* MOULTON is known from the Indian region.

Family **Heterothripidae**

Genus *Adiheterothrips* RAMAKRISHNA 1928

This monotypic genus is known from the species *A. jambudvipae* RAMK.

---

* PRIESNER, 1948, *Bull. Soc. Fouad Ier Entom.*, XXXII: 325.
** BHATTI, includes this under *Allelothrips* (in Press).
1 BAGNALL, R. S. 1932, *A.M.N.H.*, (10) 10: 290.
2 STANDARD, L. J. 1961, *Bull. Ent. (Madras)*, No. 2: 9-11.

Family **Thripidae**
Subfamily **Thripinae**
Genus *Anaphothrips* UZEL 1895
Subgenus *Dantabahuthrips* SHUMSHER 1942

Represented by its only species *A. (D.) sacchari* SHUMSHER.

Subgenus *Hemianaphothrips* PRIESNER 1925

This is represented in India by the species, *H. palmae* RAMK.

Subgenus *Hyalopterothrips* [2'] PRIESNER 1938

BHATTI (1962) has recorded this subgenus recently with a new species *H. roonwali* BHATTI (in press).

Subgenus *Neophysopus* SCHMUTZ 1913

Body distinctly bicolorous; mostly brown, with abdominal segments 3-7 yellow. Males not clearly bicolorous. IX tergite of males with a pair of stout, thorn-like setae . . . . . *flavicinctus* (KARNY)
Body unicolorous, yellow. Males without the thorn-like setae on tergite IX. . . . . *sakimurai* ANANTHAKRISHNAN [3]

Genus *Anascirtothrips* BHATTI [4] 1961.

This is represented by a single species *A. arorai* BHATTI.

Genus *Aptinothrips* HALIDAY 1836

This is known from India by its type species *A. rufus* (GMELIN).

Genus *Aroidothrips* ANANTHAKRISHNAN [5] 1961

This genus is known by its only species *A. longistylus* ANANTHAKRISHNAN.

Genus *Ayyaria* KARNY 1926

This is represented by a single species *A. chaetophora* KARNY.

Genus *Bathrips* BHATTI [6] 1962

This is known by *B. melanicornis* (SHUMSHER) from Burma and India.

[2'] PRIESNER, H. 1938. *Bull. Soc. Fouad Ier Entom.*: 130.
[3] ANANTHAKRISHNAN, T. N. 1961, *Zool. Anz.*, 167 (7/8): 262-263.
[4] BHATTI, J. S. 1961, *Bull. Ent. (Madras)* No. 2: 24-25.
[5] ANANTHAKRISHNAN, T. N. 1960, *J. Bombay Nat. Hist. Soc.*, 57(3): 562-563.
[6] BHATTI, J. S. 1962, *Bull. Ent. (Madras)* No. 3: 34-35.

Genus *Bolacidothrips* PRIESNER [7] 1930

This genus has recently been recorded in India by the discovery of *B. oryzae* MOULTON from Madras (BHATTI 1962).

Genus *Bolacothrips* [8] UZEL 1895

B. bicolor [8a] ANANTHAKRISHNAN is the only species known from India.

Genus *Caprithrips* FAURE [9] 1933

It is known from India by its type species *C. analis* FAURE [10].

Genus *Cerothrips* ANANTHAKRISHNAN [11] 1961

This genus is represented by *C. minutus* ANANTHAKRISHNAN.

Genus *Chaetanaphothrips* PRIESNER 1925

The widely distributed species *C. signipennis* (BAGNALL) known as the Banana thrips is known from Ceylon. Interestingly enough it has not been recorded from India till now.

Genus *Chirothrips* HALIDAY, 1836

1. Antennal segment 1 large and broad, more than half the head width. 2
   Antennal segment 1 normal 3
2. Segment 2 of antenna very strongly produced into a long, blunt process; segment 7 clearly longer than 8; foretibial process not surpassing first tarsal segment. Males apterous . *loyolae* ANANTHAKRISHNAN [12]
3. Antennal segment 4 with forked sense cones 4
   Antennal segment 4 with simple sense cones 5
4. Head without a distinct prolongation in front of eyes. Segment 2 of antenna sharply produced on outer margin . *meridionalis* [13] BAGNALL
5. Segment 7 normally shorter than 8, sometimes as long. Ovipositor longer than pronotum. Males brachypterous . . *manicatus* [14] HALIDAY

---

7 PRIESNER, H. 1930, *Bull. Soc. R. Ent. d'Egypte:* 6.
8 UZEL, 1895. *Mon. ord. Thys.*,: 212.
8a ANANTHAKRISHNAN, T. N. 1960. *J. Bombay Nat. Hist. Soc.*, 57(3) : 563.
9 FAURE, J. C. 1933. *Bull. Brooklyn Ent. Soc.*, 28: 12.
10 ANANTHAKRISHNAN, T. N. 1961. *J. Bombay Nat. Hist. Soc.*, 58(2) : 426.
11 ANANTHAKRISHNAN, T. N. 1961. *Zool. Anz.*, 167(7/8) : 259-261.
12 ANANTHAKRISHNAN, T. N. 1959. *Zool. Anz.*, 162(9/10) : 314-216.
13 BAGNALL, R. S. 1927. *A.M.N.H.*, (9) 19: 566.
PRIESNER, H. 1949. *Bull. Soc. Fouad Ier Entom.*, 33: 162.
ZUR STRASSEN, 1958. J. Ent. Soc. S. Afr., 21(2) : 340.
BHATTI, J. S. 1961. *Bull. Ent. (Madras)* No. 2: 28-29.
14 ZUR STRASSEN, 1959. *J. Ent. Soc. S. Africa*, 22(1) : 95-105.

Segment 7 decidedly longer than 8. Ovipositor shorter than pronotum 6

6. Outer margin of joint 2 clearly concave, process of 2 large; maximum diagonal dimension 40-43 μ; antennal segment 1 pale at base; males brachypterous . . . . . *maximi* [15] ANANTHAKRISHNAN
Process of 2 short, maximum diagonal dimension 30-33 μ; outer margin very slightly concave, almost straight. Males brachypterous . . . . . *ramakrishnai* [16] ANANTHAKRISHNAN.

Genus *Chloethrips* [17] PRIESNER 1957

1. Body yellow or some shade of yellow 2
Body brown or some shade of brown 3
2. Comb on abdominal tergite VIII absent. Apex of abdomen not dark; lower vein of forewing with II setae . . . *indicus* (RAMK. & MARG.)
Comb on tergite VIII complete and distinct, in female; absent in male. Apex of abdomen (IX & X) dark. Lower vein with setae . . . . . *faurei* [18] BHATTI
3. Mouth cone reaching middle of prosternum. Comb on tergite VIII of abdomen complete 4
Mouth cone reaching across prosternum. Comb on tergite VIII sparse, incomplete at middle 5
4. Tergites II-VIII of abdomen with a dark streak along foremargin; forewings uniform brownish infumate; anteocellar setae 44 μ long. Inner and outer postangular prothoracic setae 61 and 54 μ long; costa with 23-25 setae; lower vein with 11-13 . . . *bambusae* SHUMSHER
Tergites II-VIII without any dark streak; forewings pale at basal third, rest brownish infumate; anteocellar setae shorter, 35 μ long; prothoracic postangulars subequal, 38-43 μ long; costa with 19-20 setae, lower vein with 10 . . . . *saccharicidus* (RAMK. & MARG.)
5. Anteocellar setae weak; costa with 21-34 setae; lower vein with 11-13. . . . . *oryzae* (WILLIAMS)

Genus *Ctenidothrips* [19] PRIESNER 1957

This is represented by its only species *C. bambusae* PRIESNER.

[15] ANANTHAKRISHNAN, T. N. 1957. *Zool. Anz.*, 159(5/6): 93-95.
ZUR STRASSEN, 1960. *J. Ent. Soc. S. Africa*, 23(1): 155.
[16] ANANTHAKRISHNAN, T. N. 1957. *Zool. Anz.*, 159(5/6): 95-97.
ZUR STRASSEN, 1960. *J. Ent. Soc. S. Africa*, 23(1): 155.
[17] PRIESNER, H. 1957. *Zool. Anz.*, 159 (7/8): 162.
[18] BHATTI, J. S. 1962. *Bull. Ent. (Madras)* No. 3:
[19] PRIESNER, H. 1952. *Indian J. Ent.*, 13: 185.

Genus *Dendrothripoides* BAGNALL 1923

Known from India by the type species *D. ipomeae* BAGNALL (= *Tryphactothrips mundus* KARNY).

Genus *Dendrothrips* UZEL

Subgenus *Dendrothrips* s. str.

1. Antenna 7-segmented 2
   Antenna 8-segmented 3
2. Style longer than 6th antennal segment. Segment 5 shorter than 3 & 4; forevein with the basal 4 or 5 spines placed regularly up to middle, next 2 distal and one at extreme apex; lower vein with 2 setae at middle, placed wide apart. Greyish yellow species . . . . . *jasminum* (RAMK. & MARG.)
   Style shorter than 6th antennal segment. Antennal segment 4 or 5 subequal; costa with 38-40 setae, lower vein with 3. Brown species, with little yellow pigment. All femora and tibiae brown, except apex of hind tibia, pale . . . . . *stannardi* [20] (ANANTHAKRISHNAN)
3. Forewings pale at base, next a brown band up to middle, followed by a longer pale band and a very short dark band at apex . . . . . *indicus* BAGNALL
   Forewings pale at extreme base and the rest uniform dark grey . . . . . *sexmaculatus* BAGNALL

Genus *Dorcadothrips* PRIESNER 1932

Represented in India by *D. nilgiriensis* RAMK. & MARG.

Genus *Euphysothrips* BAGNALL 1926

Subgenus *Euphysothrips* s. str.

Body colour yellow, with brown abdominal tip. Wings with a weak grey cross band . . . . . *fungivora* [21] (RAMK)
Brown to grey brown body, with unicolorous wings . . *minozzii* BAGNALL

Subgenus *Megaphysothrips* RAMK. & MARG. 1939

Known by its only species *E. (M) subramanii* (R. & M.)

---

[20] ANANTHAKRISHNAN, T. N. 1957. *J. Zool. Soc. India*, 9(2): 216-220.
[21] SAKIMURA, K. & ANANTHAKRISHNAN, T. N. 1962. *Bull. Ent. (Madras)* No. 3: 49-53.

Genus *Exothrips*[22] PRIESNER 1939

In India it is represented by *E. hemavarna*[23] (RAMK. & MARG.) (= *E. madrasensis* ANANTHAKRISHNAN).

Genus *Frankliniella* KARNY 1910

1. Body yellow to yellowish grey . . . . . *sulphurea* (SCHMUTZ)
   Body brown 2
2. Head dark, abdomen lighter; antennal segments 3-4 mostly clear yellow . . . . . *schultzei* (TRYBOM)
   Head lighter, abdomen dark; antennal segments 3-4 mostly brownish grey. Wing veins with fever spines . . . . *paucispinosa* MOULTON

Genus *Gnomonothrips* RAMK. & MARG., 1939

This monotypic genus is known by *G. coimbatorensis*[24] R. & M.

Genus *Indusiothrips*[25] PRIESNER 1952

This genus is known by its only species, *I. seshadrii* PRIESNER.

Genus *Limothrips* HALIDAY 1836

It is known from its type species *L. cerealium* HALIDAY.

Genus *Microcephalothrips* BAGNALL 1926

Represented by *M. abdominalis*[26] (CRAWFORD) (= *M. brevipalpis* KARNY), the cosmopolitan Composite thrips.

Genus *Mycterothrips* TRYBOM 1910

1. Forewings clearly banded 2
   Forewings not banded 3
2. Forewings at base and middle with greyish cross bands. Antennal segments 3-6 subequal. Lower vein with 4 setae . . . . . *pseudosetiprivus* (RAMK. & MARG.)
3. Antennal segments 3-6 not subequal (40, 38, 30 and 38 μ); upper vein of forewing with 3 distal setae, lower vein with 4 setae . . . . . *setiprivus* KARNY

---

22 PRIESNER, H. 1939. *Rev. Zool. Bot. Afr.*, 32(2): 162.
23 SAKIMURA, K. & ANANTHAKRISHNAN, T. N. 1962. *Bull. Ent. (Madras)* No. 3: 53-56.
24 ANANTHAKRISHNAN, T. N. 1962. *Zool. Anz.* Bd. 167: 265.
25 PRIESNER, H. 1952. *Indian J. Ent.*, 13(2): 183.
26 JAGOTA, USHA KUMARI, 1961. *Bull. Ent. (Madras)* No. 2:

Genus *Neocorynothrips* RAMK. & MARG. 1939

This genus is known by its only species, *N. asiaticus* [27] RAMK. & MARG.

Genus *Neolimothrips* SHUMSHER 1942

Head little longer than wide (190 : 180); upper vein of forewing with 6-8 basal setae and 2 apical setae; lower vein with 8-9 setae. Males macropterous; a pair of spine set tubercles on abdominal segment IX, one on each side . . . . . *binervis (Kobus)* (= *saccharivorus* SHUMSHER). Head as long as wide (136 : 136); upper vein of forewing with only 4 basal setae; males apterous and bicolorous; no special stout setae on abdominal segment IX . . . . . *brachycephalus* [28] SHUMSHER

Genus *Perissothrips* HOOD 1919

Prothorax 2.84 times as long as head; mouthcone 180 - 192 μ long; surpassing much beyond base of prosternum. Foretibia of female, at apex, angulate within, and male, with a minute acute tooth; costa with 18 setae; straw yellow coloured forms . . . . . *parviceps* HOOD. Prothorax 2.75 times as long as head; mouth cone 140 μ long, not surpassing base of prosternum; foretibia of female and male, with a distinct tooth at apex within, costa of forewing with 22-23 setae; dark golden yellow forms . . . . . *aureus* [29] ANANTHAKRISHNAN

Genus *Physothrips* KARNY 1912

Body colour dark brown; abdominal sternites with numerous accessory setae . . . . . *setiventris* BAGNALL
Body colour yellowish brown. Accessory setae on sternites absent . . . . . *crotus* [30] BHATTI

Pseudodendrothrips SCHMUTZ 1913

1. Body unicolorous 2
   Body bicolorous 3
2. Body yellow, antennal segment 2, twice the length of 1, 3-6 subequal, segment 7 longer than 2 . . . . . *ornatissimus* SCHMUTZ.
3. Brilliantly coloured red and yellow; head and thorax, reddish brown, abdomen yellow. Antennal segments 3-6 not subequal; 3 & 4 subequal; 5 shorter and 6 longer. Segment 7 clearly shorter than 2 . . . . . *dwivarna* (RAMK.)

---

27 ANANTHAKRISHNAN, T. N. 1962. *Zool. Anz.* Bd. 167: 264.
28 SHUMSHER SINGH, 1942. *Indian J. Ent.*, 4(2): 4-6.
29 ANANTHAKRISHNAN, T. N. 1954. *J. Zool. Soc., India*, 6(2): 160-161.
30 BHATTI, J. S. 1962. *Bull. Ent. (Madras)* No. 3: 37.

Genus *Ramakrishnothrips* SHUMSHER 1942

Antennal segment 6 clearly longer than 3 & 4 (3, 4, 6—58, 64, 83 μ) interocellars long; costa of forewing with 14-15 setae; lower vein with 5; comb on tergite VIII present . . . . . *jonnaphilus* (RAMK.)
Antennal segment 6 shorter than 3 & 4; (3, 4, 6—70, 67, 58 μ); interocellars short; costa of forewing with 24-28 setae; lower vein 13-14; tergite VIII with no 'comb' . . . . . *cardamomi* (RAMK.)

Genus *Rhopalandrothrips* PRIESNER

(Males)

1. Segment 6 of antenna as long as or much longer than segments 1-5. (*consociatus* group) 2
   Segment 6 of antenna much shorter. (*annulicornis* group) . . . 3
2. Segment 6 of antenna 7.3 times as long as wide; segments 4, 5 and 6 measuring 26, 16, 211 μ; lower vein of forewing with 15 setae . . . . . *nilgiriensis* [31] ANANTHAKRISHNAN
   Segment 6 of antenna 8.7 times as long as wide; segments 4, 5 and 6 measuring 22, 10, 166 μ; lower vein of forewing with only 9 setae . . . . . *orchidii* [32] ANANTHAKRISHNAN
3. Segment 6 of antenna 5 times as long as wide; segments 4, 5 and 6 measuring 45, 23, 90 μ; lower vein with 13 setae . . *ricini* SHUMSHER

Genus *Scirtothrips* SHULL 1909

1. Male with drepana 2
   Males without drepana 3
2. Abdomen with narrow brownish transverse lines, extending entirely across dorsum of segments III-VIII, rarely II-VIII; antennal joint 3 as long as 6; lower vein of forewing with 2-5 setae *fulleri* [33] FAURE
3. Abdominal segments III-VIII with a basal dark transverse line at middle, followed by a light brown blotch. Antennal segment 3 longer than 6; lower vein of forewing with 2-3 setae; antennae and wings paler grey . . . . . *dorsalis* HOOD
   Abdominal segments III-VIII with a very transverse line; antennal segment 3 as long as 6; lower vein with only one or two setae; antennae and wings darker; antennal segment 2 often with an orangish hue, quite outstanding . . . . . *oligochaetus* KARNY

---

[31] ANANTHAKRISHNAN, T. N. 1960. *Pan. Pac. Ent.*, 36(1): 37-40.
[32] ANANTHAKRISHNAN, T. N. 1961. *Zool. Anz.* Bd. 167, Heft 7/8: 263-264.
[33] SESHADRI & ANANTHAKRISHNAN, 1954. *Indian J. Ent.* 16: 212.

Genus *Scolothrips* HINDS 1902

1. Body bicolorous 2
   Body unicolorous 3
2. Head, pterothorax, base of abdominal segments VI-VIII dark grey, with pigment; rest pale yellow. Body with profuse red pigmentation. Wings with a fuscous infumation up to middle, with a small, hyaline patch just beyond base, the middle region broadly transparent, next a fuscous cloud, almost to apex; extreme apex transparent . . . . . *asura* (RAMK. & MARG.)
3. Abdominal tergites with brown shadings at foremargin and with peculiar lateral spots. Antennal segment 6, 35 μ long; major pronotal bristles 76-100 μ long. Costa with 16-17 setae . . *indicus* [34] PRIESNER
   Lateral spots of abdomen lacking; Antennal segment 6, 40-45 μ long; major pronotal bristles 100-112 μ long. Costa with 19-22 setae . . . . . *sexmaculatus* (PERGANDE) *

Genus *Sericothripoides* BAGNALL 1929

The type species *S. bispinosus* (BAGNALL) alone is known.

Genus *Sericothrips* HALIDAY 1836

1. Apterous or brachypterous forms 2
   Macropterous forms 3
2. Prothorax dark, body colour predominently yellow. Abdominal segments 4-6 yellow . . . . . *cingulatus* HINDS
   Prothorax yellow, body colour predominently yellow. Abdomen uniform yellow . . . . . *solanifolii* [35] (SHUMSHER)
3. Forewings without distinct dark and pale cross bands, either uniformly pale or shaded with brown near base or even up to middle, appearing as if banded with one dark basal band 4
   Forewings with one or more distinct pale cross band, or uniformly dark 5
4. Body bicolorous, with abdominal segments 1 (in part), 2, 3 and 6 dark brown, rust yellow to yellow brown. Forewings with basal half greyish infumate and apical half much paler . . . . . *boérhaeviae* [36] SESHADRI & ANANTHAKRISHNAN.

---

[34] PRIESNER, H. 1950. *Bull. Soc. Fouad Ier Entom.* 33: 48.

* What has been recorded as *Scolothrips sexmaculatus* (PERGANDE) by previous workers in India, is only *S. indicus* PRIESNER. The true *sexmaculatus* has not so far been known to occur.

[35] SHUMSHER SINGH, 1944. *Proc. R. Ent. Soc. Lond. (B).* 13 pts 11-12.

[36] SESHADRI, A. R. & ANANTHAKRISHNAN, T. N. 1954. *Indian J. Ent.* 16(3): 210-212.

Body uniformly yellow. Forewings uniformly pale . . . . . *solanifolii* (SHUMSHER)

5. Forewings without or with one pale cross band (in addition to the pale wing apex, if so) 6
6. Abdominal segment 2, 3 and 7 dark blackish brown, segment 8 pale brown remaining segments pale yellow. Antennae long slender, segment 3 about 3.5 times as long as wide . . . . . *tricinctus* HOOD.
   Abdomen not coloured as above; antennae usually normal, segment 3, never more than 3 times as long as wide 7
7. Abdomen uniformly light yellow . . . . . *lineata* (SCHMUTZ)
8. Abdomen brownish yellow, segments 2 and 3 slightly informate, VII-IX dark brown; apical segment somewhat paler brown . . . . . *ramaswamiahi* (KARNY)
8. Two or three abdominal segments predominently yellow. Foreangles of pronotal blotch protruding acutely; reticulation on occiput and prothorax outside plate, clearly netlike . . . . . *occipitalis* HOOD
   Three abdominal segments predominently yellow. Foreangles of pronotal blotch rounded; reticulations on occiput and prothorax, more transversely striate . . . . . *cingulatus* HINDS.
10. Abdominal segments 6 to 10 dark grey brown, 1 to 5 yellow. Forewings with a hyaline cross band at base beyond scale . . . . . *graminis* [37] ANANTHAKRISHNAN

Genus *Taeniothrips* AMYOT et SERVILLE 1843

Subgenus *Taeniothrips* s. str.

1. Upper vein of forewing with 2 distal setae 2
   Upper vein with 3 distal setae 12
   Upper vein with 4 or more distal setae 22
2. Basal series of upper vein setae reaching beyond middle of wing . 3
   Basal series of upper vein setae not reaching middle of wing . . 9
3. Forefemora wholly dark. Antennae unicolorous, dark 7
   Forefemora on inner border light. Antenna with segment 3 lighter than the rest 4
4. Forewings with a distal clear area 5
   Forewings uniformly brown, without a distal clear area 6
5. Costa not shaded in the distal clear area of the wing which includes 3 lower vein setae. Upper vein with 11-12 + 2 setae. Antennal segment

[37] ANANTHAKRISHNAN, T. N. 1956. *Zool. Anz.*, 156 (1-2): 32-33.

3 lighter. Tergite VIII of abdomen with a comb. Mouth cone reaching middle of prosternum. Larvae with no special chitinisation . . . . . *nigricornis* (SCHMUTZ) (*vitata* SCHMUTZ)*

Costa not or scarcely shaded in the distal clear area of the forewing, which includes 3-4 setae. Hind-tibia with 5-6 (usually 6, seldom 7) spurs. Larvae with abdominal segments IX and X chitinised, dark. . . . . *morosus*[38] PRIESNER

Costa shaded in the distal clear area of the wing, which includes 2-5 setae only. Upper vein with 16 — 18 + 2 setae. Larvae with no special chitinisation . . . . . *distalis* KARNY

6. Antennal segment 3 pale at distal third or less, for the most part brown. Mouth cone long, reaching base of prosternum. Comb on tergite VIII lacking. Small forms . . . . . *minor* (BAGNALL)
7. Body colour some shade of brown. Abdominal sternites with or without accessory setae 8

Body colour some shade of yellow. Abdominal sternites without accessory setae 11
8. Forewings without dark infumation. Males . . cf. *claratis* SHUMSHER

Forewings clearly infumate 9
9. Abdominal sternites without accessory setae. Forewing lighter near base; postangular prothoracic setae short, 28-42 μ long; posteromarginal setae 4 pairs; inter- and anteocellar setae absent . . . . . *immsi* (BAGNALL)

Abdominal sternites with accessory setae 10
10. Body unicolorous, dark brown. Antennae uniform dark brown. Interocellars strong, as long as outer prothoracic postangulars; posteromarginals 4 pairs, the innermost pair much longer and stronger; lower vein with 13-14 setae; Abdominal sternites with a transverse row of 8-10 accessory setae . . . . . *chaetogastra* RAMK.
11. Antennal segments 1 & 2 yellow, 3-6 dark distally. Wings very pale yellow; pronotum with 3 pairs of posteromarginal setae. Interocellar setae 34-36 μ long . . . . . *traegardhi* (TRYBOM.)
12. Body colour some shade of yellow, or yellowish brown 13

Body colour some shade of brown 15
13. Interocellar setae long, more than 24 μ long. Body colour yellowish brown. Prothoracic posteroangular small (34-41 μ long), outer shorter

---

* According to KARNY (1926, *Ent. Mem. Dept. Agr. India*, 9) "*vitata*" may be just a paler form of *longistylus* (*nigricornis*) but the species is not known with certainly and its status is doubtful.

[38] PRIESNER, H. 1938. *Treubia*, 16(4): 476.

than inner . . . . *moultoni* [39] (SESHADRI & ANANTHAKRISHNAN) *
Interocellar setae small, 13-16 μ long. Body pale to lemon yellow. Posteroangular setae of prothorax longer than 55 μ subequal . . 14

14. Antennal segment 6 wholly dark, 2 often coloured with orange apically. Male with antennal segment 6 much longer than that of female, about 60-72 μ long; the inner of the two pairs of setae on hind border of tergite 9 slightly shorter than the outer . . *sulfuratus* [40] PRIESNER
Antennal segment 6 wholly dark, 2 coloured with orange apically. Male with antennal segment 6 shorter than that of female; the 2 pairs of setae on hind border of tergite 9 equal . . . . . *rhopalantennalis* [41] SHUMSHER
Antennal segment 6 yellowish basally, 2 without orange tinge. The inner pair of setae on male tergite IX nearly twice as long as outer . . . . . *flavidulus* BAGNALL

15. Antennal segments 3 and 4 wholly yellow. Forewings without dark infumation. Males with numerous small depressions on abdominal sternites 3 to 7 . . . . . *claratris* [42] SHUMSHER
Antennal segment 3 alone lighter than the rest. Wings infumate. Males without numerous depression on sternites 3-7 16
Antennal segments III & IV pale yellowish brown. Costa of forewing with 23 setae, lower vein with 10. Comb on tergite VIII clear . . . . . *frici* (UZEL)

16. Accessory bristles on sternites absent. 17
Accessory bristles on sternites present 18

17. Head with a distinct constriction behind eyes. Inter- and anteocellar setae well developed. Costa with 34 setae, lower vein, 16 . . . . . *major* BAGNALL.

18. Antennal segments 4 & 5 wholly light yellow in basal third. Head and thorax light orange, abdomen dark; wings clear at base. Inner prothoracic postangular setae 48-60 μ long . . . . . *Thrips hawaiiensis* f. *imitator* PRIESNER **
Antennal segment 5 uniformly dark, at most with its basal extremity slightly pale 19

---

[39] SESHADRI & ANANTHAKRISHNAN, T. N. 1953. *Indian J. Ent.* 16(3): 213-214.
* *T. moultoni* = *T. claratris* SCHUMSHER (BHATTI, comb. nov.) in press.
[40] PRIESNER, H. 1935. *Phillip. Jour. Sci.* 57(3): 358.
[41] SHUMSHER SINGH, 1945. *Indian J. Ent.* 7: 179.
[42] SHUMSHER SINGH, 1945. *Indian J. Ent.* 7: 178.
** Although not so far recorded from India, this form of *Thrips hawaiiensis* with antennal style 2-segmented is likely to occur.

19. Body including legs dark brown. Forewings uniformly brownish yellow. No large interocellar setae. Costa with 38-40 setae; lower vein 18. Comb on tergite VIII sparse . . . . . *longiceps* (BAGNALL)
Forewings clear at base 20
20. Interocellar setae short; costa with 24-26 setae; lower vein 12-15; comb hairs on tergite VIII arising in groups . . *andrewsi* (BAGNALL)
Interocellar setae longer, 35 μ long. Costa with 33-34 setae; lower vein with 15-16; comb hairs on VIII arising singly . . . *ghoshi*[43] BHATTI
21. Comb on tergite VIII complete. Interocellar setae very small. Upper vein of forewing with 5-8 distal setae . . . . *simplex* (MORISON)

Taeniothrips Subgenus *Lefryothrips* PRIESNER 1938

Female: Antennae longer, segment 5 in basal half or more light yellow.
Male : Glandular areas on abdominal sternites broad oval, 76-100 μ broad . . . . . *lefroyi* (BAGNALL)
Female: Antennae shorter, segment 5 lighter only at base.
Male : Glandular areas somewhat rounded 20-36 μ broad . . . . . *cuscutae*[44] PRIESNER

Subgenus *Pongamiothrips* ANANTHAKRISHNAN 1962

Known only by the type species *T. (P.) peculiaris* (BAGNALL)

Thrips Linnaeus

1. Upper vein with 2 distal setae 2
Upper vein with 3 distal setae 3
Upper vein with 4-5 distal setae 18
2. Body pale yellow; comb on tergite VIII present. Costa with 15-18 setae; lower vein with 7-9 . . . . . *pallidulus* BAGNALL
3. Body yellow; apex of abdomen not dark 4
Body dark or at least apex of abdomen dark 8
4. Postangular prothoracic setae longer, as also, the wing setae. Comb on tergite VIII, present or absent 5
5. Comb on tergite VIII present 6
Comb on tergite VIII absent 7
6. Costa with 15-18 setae, lower vein with 9. Small forms, body length 0.9 mm. . . . . cf. *pallidulus* BAGNALL
Costa with 29 setae, lower vein 14. Larger forms, body length 1.5 mm. . . . . *carthami* SHUMSHER

[43] BHATTI, J. S. 1962. *Bull. Ent. Madras.* 3:
[44] PRIESNER, H. 1938. *Treubia,* 16(4): 500.

7. Head 1.5 times broader than long. Prothoracic postangulars subequal, 62 μ long. Costa 25 or 26. Upper vein 9 and lower vein with 12-13 setae . . . . . *flavus* * SCHR.
8. Body some shade of yellow 9
   Body some shade of brown 12
9. Posterior margin of pronotum with 6 pairs of setae 10
   Posterior margin of pronotum with 3 pairs of setae 11
10. Abdominal segment IX brownish, X strikingly blackish brown . . . . . *melaneurus* BAGNALL
11. Abdominal segment IX in distal half and X, wholly dark. Tergites shaded with dark areas . . . . . *coloratus* SCHMUTZ
    Only abdominal segment X at tip shaded with grey. Tergites not shaded . . . . . *apicatus* PRIESNER
12. Abdominal sternites without accessory setae 13
    Abdominal sternites with more or less numerous accessory setae . 14
13. Body brown, except antennal segment 3 and tibiae and tarsi which are pale. Lower vein with 12 setae. Comb on VIII with 30-32 closely set teeth . . . . . *immsi* BAGNALL
14. Posteromarginal prothoracic setae longer than 68 μ. Body unicolorous. Antennal segment 5 dark 15
    Postangular setae shorter than 68 μ; antennal segment 5, lighter towards base 16
15. Postocellar bristles short, 20-25 μ long. Sternites with 6-10 pairs of accessory setae . . . . . *florum* SCHMUTZ
16. Head and thorax dark brown like abdomen. Males dark . . . . . *parvus* SCHMUTZ
    Head and thorax orange, abdomen blackish brown. Males yellow . 17
17. Antennal segment 7 undivided . . . . . *hawaiiensis* (MORGAN) (= *albipes* BAGNALL)
    Antennal segment 7 divided . . *hawaiiensis* f. *imitator* PRIESNER **
18. Body colour brown (little variable). Postangular prothoracic setae short, 46 μ long; upper vein with 4-5 distal setae . . . *tabaci* LIND.
    Body colour yellow; upper vein with only 4 distal setae 19
19. End of abdomen not dark . . . . . cf. *pallidulus* BAGNALL
    End of abdomen dark . . . . . cf. *apicatus* PRIESNER

* *T. nilgiriensis* RAMK. is only a synonym of *T. flavus* SCHR. In a recent collection sent to the author by the Director, Zoological Survey of India, for identification, both one segmented and 2-segmented styles occur in the same sample. A record of a similar instance of a two segmented style has been included by BAGNALL under *Physothrips flavus*.

** likely to occur in India.

Thrips (Oxyrrhinothrips) PRIESNER

The only known species is *O. beharensis* RAMK. & MARGABANDHU. *O. schusteriana* PATEL & PATEL has not been described, except for a note on the species and it is not known to the author.

Thrips (Ramaswamiahiella) KARNY

This subgenus is represented by the species *R. subnudula* KARNY. *R. kallari* ANANTHAKRISHNAN is a true *Thrips* and hence transferred to the subgenus *Thrips* s. str. The specimens identified by RAMAKRISHNA as *T. palmi* KARNY, from material taken on Mango flowers (1928) and on Tea (1935) are only *R. subnudula*, as also Moulton's *Thrips setosus*.

Thrips striatopennata SCHMUTZ (Ceylon) is not included here due to lack of material for comparison and due to its very incomplete description.

Caliothrips DANIEL

Forewings comparatively narrower, pale, with four, short dark areas at base, at apex and 2 in between. Ring vein very prominent . . . . . *graminicola* (BAGNALL & CAM.)

Forewings comparatively broader, darker, with a pale band at base (but extreme base brown), followed by a dark brownish area, a clear area, ending in a dark apical region. Ring vein not prominent . . . . . *indicus* (BAGNALL)

Forewings uniformly pale; body yellowish . . . *minutissimus* (BAGNALL)

Heliothrips HALIDAY 1836

Represented by the only species, *H. haemorrhoidalis* (BOUCHE).

Helionothrips BAGNALL 1932

Trichomes on fourth antennal segment very much longer than the segment . . . . . *brunneipennis* (BAGNALL)

Trichomes on antennal segment IV, as long as, or a little shorter than the segment . . . . . *kadaliphilus** (R. & M.)

Hercinothrips BAGNALL 1932

Known by the only species *H. bicinctus* (BAGNALL).

---

* FAURE (1961) refers to 8 & 9 setae on the anterior vein and 8 on the posterior and states "that a study of a larger series of the two species would show complete overlapping in the number of setae on the veins of the forewings" of *brunneipennis* and *kadaliphilus*. Examination of further material of *kadaliphilus* shows that the anterior vein has, 5 (at base) + 3 + 2 + 1 + 1 (i.e., 10) & lower vein 6 or 9 (3 + 3 + 1 + 1 + 1 (= 8) — In all probability, *kadaliphilus* may be synonymous with *brunneipennis*.

Monilothrips MOULTON 1929

This genus is also represented by its only known species, *M. kempi* MOULTON.

Rhipiphorothrips * MORGAN

Colour, brown to dark blackish brown in fully mature individuals; males with abdomen bright yellow, with red hypodermal pigmentation; IV abdominal segment, in males with a small, lateral tooth-like projection; segment X with lateral bristles simple, not dilated to form a broad 'V' . . . . . *cruentatus* HOOD

Bicolorous — rich golden yellow, tinged with brown; males without the lateral tooth-like projection on abdominal IX and segment X with a pair of stout bristles, apically strongly flattened in the form of a broad 'V' . . . . . *bicolor* (BAGNALL)

Selenothrips ** KARNY 1911

Costa of forewing with 13 bristles, upper vein with 7 and lower 10 . . . . . *indicus* (BAGNALL)

Costa with 12, upper vein with 9 and lower vein 7 . . . *mendax* SCHMUTZ

Costa with 13-16, upper vein 10-12, lower vein 10-12 *rubrocinctus* (GIARD)

Acknowledgment

It is my pleasant duty to thank the British Council for the award of a bursary during the Summer of 1960 to study the Thrips Collections of the British Museum of Natural History, London. Studies of the type materials of several Oriental species were possible during this visit. To Mr. J. P. DONCASTER, now Keeper of the Entomology Section, I am specially indebted for making available every facility during my studies at the British Museum.

To Dr. L. J. STANNARD of Illinois my thanks are due to the several helpful discussions and advice while at the British Museum, and to Prof. Dr H. PRIESNER for allowing the author to study some of his collections during the author's visit to Linz (Austria) and for his constant encouragement and advice. To SHRI. J. S. BHATTI, my thrips colleague in this country, I am indebted for the help received to complete this work.

* *R. karna* has not been known to the author and the KARNY's identified material is just as good as any *cruentatus* and is marked *cruentatus*, though the collection number of RAMAKRISHNA tallies with that of *R. karna*.

** In the author's opinion, *indicus* and *mendax* are both synonymous with *rubrocinctus* (GIARD) and no clearcut differences exist and the chaetotaxy of the wings is almost similar, coming within the same range of variation. SHUMSHER (1947) refers to the short and weak wetae of *indicus* and the longer setae of the other species. All the 3 species have same kind of long and strong setae on the wing veins.

References

AMYOT, C.J.B., & SERVILLE, J.G.A., (1843). Hist. Nat. des. Insectas, Hemipteres. p. 644.

ANANTHAKRISHNAN, T.N., (1952). Notes on some Indian Thysanoptera. *Indian J. Ent.* 15: 197-201.

————, (1954). New and little known Indian Thysanoptera. *J. Zool. Soc. India.* 6: 159-166.

————, (1955). Notes on *Pseudodendrothrips dwivarna* (R & M) from South India. *Indian J. Ent.* 17: 213-216.

————, (1955). Host preferences of *Retithrips syriacus* (Mayet). *Agra Univ. J. Res. (Science).* 4: 283-288.

————, (1956). On the taxonomic status of the Indian species of *Fulmekiola* Karny. *Indian J. Ent.* 17: 213-216.

————, (1956). On the incidence of *Retithrips syriacus* (Mayet) on Castor in Madras (S. India). *Zool. Anz.* Bd. 157: 33-35.

————, (1956). Thysanopteran fauna of some grasses-I. *Andropogon pertusus. Zool. Anz.* 156: 29-33.

————, (1956). Studies on some Indian Thysanoptera III. *Zool. Anz.* 157: 130-139.

————, (1957). Studies on some Indian Thysanoptera IV. *Zool. Anz.* 159: 92-102.

————, (1957). *Dendrothripiella stannardi* sp. nov. (Thysanoptera - Terebrantia) from Kodaikanal hills (S. India). *J. Zool. Soc. India.* 9: 216-221.

————, (1959). Alary polymorphism in two species of Thysanoptera. *Proceedings of the First All India Zoological Congress, Jabalpur.* Abstract.

————, (1959). Studies on some Indian Thysanoptera-V. *Zool. Anz.* Bd. 162: 313-324.

————, (1960). Thysanoptera from the Nilgiri and Kodaikanal hills (S. India). *J. Bombay Nat. Hist. Soc.* 57: 558-578.

————, (1960). A remarkable instance of sexual dimorphism in a new species, *Rhopalandrothrips nilgiriensis. Pan. Pac. Ent.* 36: 37-40.

————, (1961). A review of some grass infesting Thysanoptera from India, with description of a new species. *J. Bombay Nat. Hist. Soc.* 58: 420-425.

————, (1961). Studies on some Indian Thysanoptera-VI. *Zool. Anz.* Bd. 167:

————, (1962). Some little known Indian Terebrantia. *Proc. R. Ent. Soc. Lond. (B)* 31(7-8): 87-91.

ARORA, G. L. & BHATTI, J. S. (1960). *Taeniothrips devii* sp. nov. (Thysanoptera) from Hoshiarpur. *Res. Bull. Punjab Univ.* 11: 144-145.

RAGNALL, R. S. (1912). A Synopsis of the Thysanopterous family Aeolothripidae. *Trans. second Ent. Congr.* 394-97.

————, (1912b). Some considerations in regard to the classification of the order Thysanoptera. *A.M.N.H.* X: 220-222.

————, (1918). Brief descriptions of new Thysanoptera IX. *A.M.N.H.* I: 208-221.

————, (1919). Brief descriptions of new Thysanoptera X. *A.M.N.H.* IV: 253-277.

————, (1921). Brief descriptions of new Thysanoptera XIX. *A.M.N.H.* VII: 355-368.

————, (1921). Brief descriptions of new Thysanoptera XIII. *A.M.N.H.* XIII: 393-400.

————, (1924). A new species of Thrips from India. *A.M.N.H.* XIII: 424.

BAGNALL, R. S. (1927). Brief descriptions of new Thysanoptera. *A.M.N.H.* XIX: 567-569.
————, (1929). On some new and interesting Thysanoptera of economic importance. *Bull. Ent. Res.* 20: 69-78.
————, (1930). Further considerations in regard to the classification of the order Thysanoptera. *A.M.N.H.* V: 511-575.
————, (1931). On the Aeolothripid-complex and the classification of the suborder Terebrantia, Thysanoptera. *Bull. Soc. Nat. Luxemburg.* 7: 115-118.
————, & CAMERON, W. P. L., (1932). Description of two species of *Hercothrips* injurious to cotton in British Sudan and of an allied species on grass. *A.M. N.H.* X: 412-419.
————, (1934). A contribution towards a knowledge of the genus *Aeolothrips* (Thysanoptera) with descriptions of new species. *Ent. Mon. Mag.* LXX: 120-127.
BAILEY, S.F., (1939). The six spotted Thrips, *Scolothrips sexmaculatus* (Perg). *J. Econ. Ent.* 32: 43-47.
————, (1947a). The genus *Erythrothrips* Moulton. *Pan Pac. Ent.* 23: 103-109.
————, (1948). Grain and grass infesting thrips. *J. Econ. Ent.* 12: 219-228.
————, (1949b). The genus *Orothrips* Moulton. *Pan Pac. Ent.* 25: 104-112.
————, (1951). The genus *Aeolothrips* Haliday in N. America. *Hilgardia* 21: 43-80.
————, (1957). Thrips of California. Pt. I — Suborder Terebrantia. *Bull. Calif. Ins. Sur.* 4: 143-220.
BHATTI, J.S., (1961). *Anascirtothrips arorai* gen. et. sp. nov. with notes on *Chirothrips meridionalis* Bagnall, new to India (Thysanoptera: Thripidae). *Bull. Ent. Madras.* 2: 26-29.
————, (1962). A new genus and two new species of Thysanoptera with notes on other species. *Bull. Ent. Madras.* 3: 24-40.
————, (1962). Additions to the graminivorous Thysanoptera of India. *Bull. Ent. Madras.* 3: 42-47.
BOURNIER, A., (1956). Contribution a letude dela Parthenogenese des Thysanopteres. *Arch. de Zool. Exp. Et Gen.* r. 93 Fase 3: 220-317.
BUFFA, P., (1907). Trentuna Specie di Tisanoptera Italiani, *Atti d. Soc. Toscana d Sci. Nat. Mem.* 23: 1-77.
BURMEISTER, H.C., (1938). A new genus and species of Thysanoptera from green houses. *Proc. Ent. Soc. Wash.* 40: 109.
CRAWFORD, J. C., (1938). Physopoda. *Handb. d. Ent.* 11: 404.
————, (1940). The male of *Heliothrips haemorrhoidalis* (Bouche). *Proc. Ent. Soc. Wash.* 42: 90-91.
DANIEL, S.M., (1904). New Californian Thysanoptera. *Ent. News.* 15: 293-297.
DE GRYSE, J.J. & TREHERNE, R.C., (1924). The male genital armature of Thysanoptera. *Canad. Ent.* 56: 177-182.
FAURE, J.C., (1925). A new genus and five new species of South African Thysanoptera. *S. Af. J. Nat. Hist.* 5: 143-166.
————, (1929). The South African Citrus Thrips and five other new species of Scirtothrips Shull. *T.U.C. Bulletin* No. 18: 1-18.
————, (1933). New genera and species of Thysanoptera-6. *Bull. Brooklyn Ent. Soc.* 25: 1-41.
————, (1959). South African Thysanoptera-9. *Jour. Ent. Soc. S. Africa.* 21: 355-375.

FAURE, J. C., (1960). Thysanoptera of Africa-3. *Jour. Ent. Soc. S. Africa.* 23: 16-44.
————, (1960). Thysanoptera of Africa-4. *Ibid.* 23: 237-277.
————, (1961). Thysanoptera of Africa-5. *Ibid.* 24: 133-153.
FRANKLIN, H.J., (1908). On a collection of Thysanopterous insects from Barbados and St. Vincent Islands. *Proc. U.S. Nat. Mus.* 33: 715-730.
GHABN, A.A.A.E., (1948). Contribution to the knowledge of the biology of *Thrips tabaci* Lind. in Egypt. *Bull. Soc. Fouad Ier Entom.* 32: 123-174.
HALIDAY, A. H., (1836). An epitome of the British genera in the order Thysanoptera, with indication of few of the species. *Ent. Mag. Lond.* 3: 439-451.
HARTWIG, E. K., (1952). Taxonomical studies of South African Thysanoptera including genitalia, statistics and a rivision of Trybom's types. *Ent. Mem. Dep. Agric. Union S. Africa.* 2: 341-399.
HINDS, W. E., (1900). The grass Thrips. *37th Ann. Rpt. Man. Agr. Col. Pub. Doc.* 31: 83-97.
————, (1902). Contributions to a monograph of the insects of the order Thysanoptera inhabiting North America. *Proc. U.S. Nat. Mus.* 26: 79-242.
HOOD, J.D., (1915). An outline of the subfamilies and higher groups of the order Thysanoptera. *Proc. Biol. Soc. Wash.* 28: 53-80.
————, (1919). On some new Thysanoptera from South India. *Insec. Insc. Menstr.* 7: 90-103.
————, (1927). New Neotropical Thysanoptera. *Psyche.* 34: 230-246.
————, (1954). Angolan Thysanoptera-i. A new genus and species of Heliothripinae. Companhi de dia mantes de Angola. Museu do Dundo: 25-29.
————, & JACOT-GUILLARMOD, (1959). Note on *Monilothrips kempi* Moulton. *J. Ent. Soc. S. Afr.* 22: 489-493.
JAGOTA, USHA KUMARI, (1961). A note on the life-history of *Microcephalothrips abdominalis* (Crawford) (Thysanoptera, Thripidae). *Bull. Ent.* 2: 12-20.
HUKKINEN, Y., (1934). Uber die Weissahrigkeit der graminen. *Jour. Sc. Agr. Soc. Finland.* 6: 139-158.
JONES, P. R., (1912). Some Californian and Georgian Thysanoptera *U.S.D.A. Bur. Ent., Tech Ser.* 23: 1-24.
KARNY, H.H., (1912). Revision der von Serville Aufgestellen Thysanopteren genera. *Zool Annalen.* 4: 322-344.
————, (1921). Beitrag Zur Malayischen Thysanopteren Fauna. *Treubia.* 1-3: 277-291.
————, (1923). Thysanoptera from Siam and Indo-China. *Jour. Siam. Soc.* 16: 91-152.
————, (1925). On some tropical Thysanoptera. *Bull. Ent. Res.* 10: 125-142.
————, (1925). Key to Thysanoptera on Tobacco in Java and Sumatra. *Bull. Deli. Proefst.* 23: 53 pp.
————, (1926). Studies on Indian Thysanoptera. *Mem. Dept. Agric. India. Ent. Ser.* 9: 187-239.
KELLY, R. & MAYNE, R.J.B., (1934). The Australian Thrips. 81 pp. Sydney.
LINDEMAN, K., (1888). Die Schadl. Insekten d. tabak in Bes Arabian. *Bull. Soc. Imp. Nat. Moscow.* 1: 10-77.
LINNAEUS, C., (1758). Systema Naturae, Regum Animale, Ed. X: 457.

RGABANDHU, V & ANANTHAKRISHNAN, T.N., (1953). Annotated list of Indian Thysanoptera (supplement), *Indian. J. Ent.* 15: 183-188.

LIS, A., (1952). Tisanotteri Italiani IX. The genus *Thrips. Redia.* 37: 5-32.

———, (1955). Tisanotteri Italiani X. Genus *Heliothrips. Redia.* 40: 1-56.

RGAN, A.C., (1913). New genera and species of Thysanoptera with notes on the distribution and food plants. *Proc. U.S. Nat. Mus.* 46: 1-55.

RISON, G. D., (1947). Thysanoptera of the London area. *London Naturalist (Suppl.).* 59: 1-36.

———, (1948). *Ibid.* 37-75.

———, (1949). *Ibid.* 77-131.

———, (1957). A review of the British glass house Thysanoptera. *Trans. R. Ent. Soc. Lond.* 109: 467-520.

OULTON, D., (1097). Contributions to our knowledge of the Thysanoptera of California. *U.S. Dep. Agr. Bur. Ent. Tech. Ser. Bull.* III: 39-68.

———, (1927). Four new Californian Thysanoptera with notes on two other species. *Pan Pac. Ent.* 4: 34-35.

———, (1927). Thysanoptera — New species and notes. *Bull. Brooklyn Ent. Soc.* 22: 181-195.

———, (1928). The Thysanoptera of Japan — New species, notes and a list of all known Japanese species. *Ann. Zool. Japan.* 11: 287-338.

———, (1928). New Thysanoptera from India. *Indian For. Rec.* 13: 285-292.

———, (1929). Thysanoptera from India. *Rec. Ind. Mus.* 31: 93-100.

———, (1933). New Thysanoptera from South America. *Rev. de Entomologia.* 3: 458 pp.

———, (1933). New Thysanoptera from India. *Ind. For. Rec.* 19: 1-6.

———, (1948). The genus *Frankliniella* Karny, with keys for the determination of species (Thysanoptera). *Rev. de Ent.* 19: 55-114.

MURTHY, D.V., (1958). A short note on the Banana leaf thrips — *Caliothrips kadaliphila* (R.M.). *Mysore Agric. Journal.* 33: 2-4.

PATEL, N.G. & PATEL, G.A., (1953). Host plants, distribution and abundance of thrips (Thysanoptera) of the Bombay State. *J. Bombay Nat. Hist. Soc.* 51: 597-607.

———, (1953). Bionomics of the wheat thrips (*Anaphothrips flavicinctus* Karny) in the Bombay State. *Indian J. Ent.* 15: 251-261.

———, (1955). Two new species of Thrips (*Oxyrrhinothrips*). *Curr. Sci.* 11: 382.

PERGANDE, T., (1895). Observations on certain Thripidae. *U.S.D.A. Div. Ent.* 'Insect Life'. 7: 392-95.

PRIESNER, H., (1922). Beitrage Zur Lebensgeschichte des Thysanopteren. *Sitz. d. mathem. naturw. Kl. Abt. I,* 131 Bd: 66-75.

———, (1923). Beitrage Zur Morphologie de Jugendstadien der Thysanopteren (1). *Ibid.* Bd. 132.

———, (1925). Zwei neue, beachtenswerte Thysanopterentypus aus Ungarn. Zeit des Oesterr. *Ent. Wien.* 1: 1-3.

———, (1926). Die Jugendstadien der Malayische Thysanopteren. *Treubia.* 8 suppl.: 1-264.

———, (1926). Die Thysanopteren Europas. Wien. 1-342.

———, (1927). *Ibid:* 343-568.

PRIESNER, H., (1928). *Ibid:* 569-756.
———, (1930). Indomalayische Thysanopteren II. *Treubia.* 11: 357-371.
———, (1932). Preliminary notes on *Scirtothrips* in Egypt with a key and catalogue of the *Scirtothrips* species of the world. *Bull. Soc. Ent. Egypte.* 16: 141-155.
———, (1932). Thysanoptera aus dem Belgischen Congo. *Rev. Zool. Bot. Afr.* XXII, Fasc. 2: 192-193.
———, (1933). Indomalayische Thysanopteren. *Konowia,* 12: 70-85.
———, (1935). New or little known Oriental Thysanoptera. *Phillip. Jour. Sci.* 57: 351-375.
———, (1937). Contributions towards the knowledge of the Thysanoptera of Egypt-XI. *Bull. Soc. Roy. Ent. Egypte:* 208-22.
———, (1938). Materialen Zu Einer revision der *Taeniothrips* — Arten (Thysanoptera) des Indo-Malayischen Faunengebietes. *Treubia.* 16: 469-526.
———, (1939). Thysanopteren Aus dem Belgischen Congo. *Rev. Zool. Bot. Afr.* 32: 154-175.
———, (1948). Contributions towards a knowledge of the Thysanoptera of Egypt — XIV, 38. A review of the species of the genus of *Aeolothrips* Hal., pertaining to the mediterranean fauna. *Bull. Soc. Fouad. Ier. Ent.* 32: 317-341.
———, (1949). Genera Thysanopterorum. *Bull. Soc. Fouad. Ier. Entom.* 33: 31-157.
———, (1949). Studies on the genus *Chirothrips* Hal. *Bull. Soc. Fouad. Ier Entom.* 33: 157-174.
———, (1950). Studies on the genus *Scolothrips. Bull. Soc. Fouad. Ier Entom.* 33: 39-68.
———, (1952). On some new genera and species of Thysanoptera from the Oriental region. *Indian J. Ent.* 13: 183-200.
———, (1957). Zur Vergleichenden Morphologie des Endothorax des Thysanopteren. *Zool. Anz.* Bd. 159, Heft 7/8: 159-167.
RAHMAN, K.A. & BHARADWAJ, N.K., (1937). The grape Vine thrips (*Rhipiphorothrips cruentatus* Hood) (Thripidae: Terebrantia: Thysanoptera). *Indian J. Agric. Sci.* 7: 633-651.
RAMAKRISHNA, T. V., (1925). An annotated list of the Thysanoptera from India and Ceylon. *J. Bombay Nat. Hist. Soc.* 30: 861-871.
———, (1928). A contribution to our knowledge of the Thysanoptera from India. *Mem. Dep. Agric. India. Ent. Ser.* 10: 217-316.
———, (1929). The economic status of Indian Thysanoptera. *Bull. Ent. Res.* 22: 77-79.
———, (1932). A new genus and species of Thysanoptera from South India. *Rec. Ind. Mus.* 34: 277-279.
———, (1932). Bionomics of some thrips injurious to cultivated plants in South India. *Agric. Livestk in India.* 2: 391-403.
———, (1934). Notes on Indian Thysanoptera with descriptions of new species. *Rec. Ind. Mus.* 26: 491-498.
———, (1938). A new disease of Cardamum (*Elatteria cardamomi*) apparently due to insect damage in S. India. *Bull. Ent. Res.* 26: 359-361.
———, (1935). A new species of Thysanoptera from S. India (*Taeniothrips cardamomi*). *Bull. Ent. Res.* 22: 77-79.

RAMAKRISHNA, T.V. & MARGABANDHU, (1939). Notes on Indian Thysanoptera with brief description of new species. *J. Bombay Nat. Hist. Soc.* 34: 1029-1040.

————, (1939). Notes on new and known India Thysanoptera with description of new species. *Rec. Ind. Mus.* 41: 21-33.

————, (1939). Notes on some Indian Thysanoptera with descriptions of new species. *Indian J. Ent.* 1: 35-48.

————, (1940). Catalogue of Indian Insects: pt. 25 — Thysanoptera: 1-57.

RIVNAY, E., (1934). The biology of the green house Thrips, *Heliothrips haemorrhoidalis* (Bouche) in Palestine. Hadar 7: 11 pp.

SAKIMURA, K., (1932). Life history of *Thrips tabaci* Lind. on *Emilia sagittata* and its host plant range in Hawaii. *Jour. Econ. Ent.* 25: 884-890.

————, (1937). The life and seasonal histories of *Thrips tabaci* Lind. in the vicinity of Tokyo, Japan. *Ovo-Dobutsugaku-Zaoshi.* 9: 1-24.

————, (1947). Thrips in relation to gall forming and plant disease transmission: A review- *Proc. Hawn. Ent. Soc.* 13: 59-95.

————, & ANANTHAKRISHNAN, T.N., (1962). A study of the Indian species of the genus *Chaetanaphothrips. Bull. Ent. (Madras)* 3: 48-56.

SCHRANK (1777). Beitrage zur Naturgesch: 31.

SCHMUTZ, K., (1913). Zur Kenntnis Thysanopteren Fauna von Ceylon. *Sitz. Akad. Wiss. Wien:* 991-1091.

SESHADRI, A.R. & ANANTHAKRISHNAN, T.N., (1954). New Indian Thysanoptera I. *Indian J. Ent.* 16: 210-215.

SHARGA, U.S., (1933). Biology and lifehistory of *Limothrips cerealium* Haliday and *Aptinothrips rufus* Gmelin feeding on Graminae. *Ann. Appl. Biol.* 20: 308-326.

SHULL, F., (1909). Some apparently new Thysanoptera from Michigan. *Ent. News.* 20: 220-228.

SHUMSHER SINGH, (1942). A contribution to our knowledge of Indian Thysanoptera. *Indian J. Ent.* 4: 1-25.

————, (1944). Studies on some Indian Thysanoptera. *Proc. R. Ent. Soc. Lond. (B).* 13. pts. 11-12: 139-144.

————, (1945). Studies on the systematics of Indian Thysanoptera- Terebrantia — *Indian J. Ent.* 7: 147-185.

SPEYER, E. R., (1934). Some common thrips of the genus *Thrips. Ann. Appl. Biol.* 21: 120-152.

————, (1935a). The genus *Aptinothrips* Hal. (Thysanoptera - Terebrantia). *Trans. R. Ent. Soc. Lond. (B).* 28: 483-508.

————, & PARR, W.J., (1941). The external structure of some Thysanopteran larvae. *Trans. R. Ent. Soc. Lond. (B).* 20: 53-62.

STEINWEDEN, J.B., (1933). Key to all known species of the genus *Taeniothrips* Amyot & Serville (Thysanoptera- Thripidae). *Trans. Amer. Ent. Soc.* 59: 269-275.

————, & MOULTON, D., (1930). Thysanoptera from China. *Proc. Nat. Hist. Soc. Fukien Christian Univ.* 3: 12 pp.

TRYBOM, F., (1896). Einige neve oder unrollstanding beschreivene blassenfusse (Physapoda). *Opv. Vet. Akad. Turk.* 8: 613-626.

UZEL, H., (1895). Monographie der ordnung Thysanopteren. 472 pp. Koniggratz.

VAN OETTINGEN, (1942). Die Thysanopteren des nord deutschen grasslandes. *Ent. Beihefts aus Berlin — Dahlem.* 9: 79-141.

WATSON, J.R., (1923). Synopsis and catalogue of the Thysanoptera of North America. *Bull. Florida Agric. Exp. Sta.* 168. 100 pp.

WILLIAMS, C. B., (1915). *Thrips oryzae* sp. nov. injurious to rice in India. *Bull. Ent. Res.* 6: 353-355.

ZUR STRASSEN, R., (1960). Key to and catalogue of the known species of *Chirothrips* Haliday 1836 (Thysanoptera). *Jour. Ent. Soc. S. Africa.* 23: 144-176.

————, (1960). Eight synonyms amongst European species of *Chirothrips* Haliday 1836 (Thysanoptera). *Ibid.* 22: 88-107.

————, (1960). Catalogue of the known species of South African Thysanoptera. *Ibid.* 23: 321-367.