Ak. Ü. Zir. Fak. Derg., 1988, 1(2), 165-178.

THYSANOPTERA FROM TURKEY AND SOME MIDDLE EAST COUNTRIES

İrfan TUNÇ*

SUMMARY

Thysanoptera specimens from Turkey, Israel and Jordan have been studied. The most recent information related to the distribution, hosts and living habits of 26 species (22 from Turkey, 4 from Israel and 1 from Jordan) is given taking into account the further material not evaluated properly yet. Two of the species, **Odontothrips asmulans** Priesner and **Haplothrips knechteli** Priesner are recorded for the first time from Turkey. The distribution of some species in Turkey has been discussed in view of the records in neighbouring countries.

INTRODUCTION

Interest on Thysanoptera in Turkey is growing each year due to the increasing number of projects undertaken to ascertain the insect fauna in a given crop and area. In this context a better picture of Thysanoptera besides other insect orders in Turkey has been coming out in recent years. Furthermore many plant protection researchers and technicians are much more informed than before about the disorders in agricultural crops which resulted in more consciousness of the damage given by thrips which was overlooked before and the realization of the importance of this insect order. Nevertheles the same development occured also in Israel and Jordan which has been noticed several times.

The scope of the present study is not limited to the material presented here, but has been widened through the material obtained from different parts of Turkey which has not been evaluated properly yet. Thus for many species dealt the data relating to the distribution, hosts and other particulars has been brought upto date.

The material presented comprises 26 Thysanoptera species of which 22 are from Turkey, 4 from Israel and 1 from Jordan. 45

* Assoc.Prof.Dr., Akdeniz University, Faculty of Agriculture, Plant Protection Dept., PK.126, Antalya, Turkey.

samples (41 Turkey, 3 Israel, 1 Jordan) taken from 28 plant species have been studied.

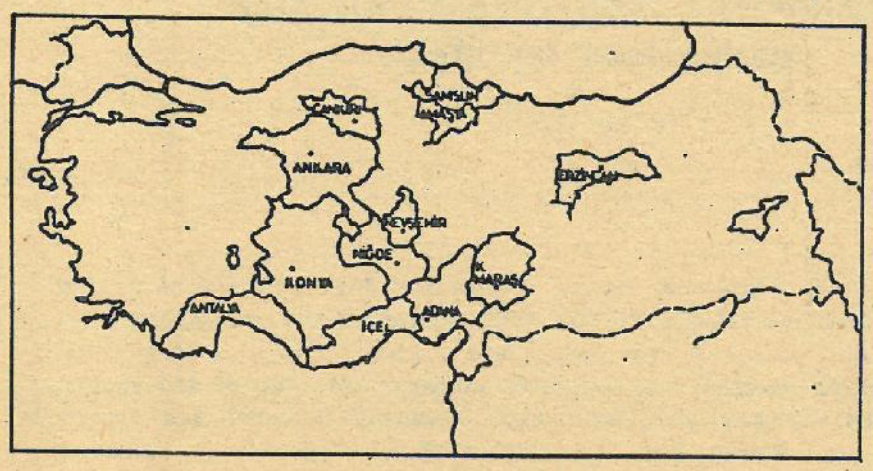

Fig. 1 : The map of Turkey with positions and limits of provinces referred in the text.

Localities from Turkey referred in the text belong to the following provinces (in brackets): Göre (Nevşehir); Ortayurt (Erzincan); Sarıköy, Beyşehir, Çumra (Konya); Çarşamba, Gelemen (Samsun); Suluova (Amasya); Ali Fakı (İçel); Aksu (Antalya); Çaparkayı (Çankırı); Hacıali, Hasanbeyli, Pozantı (Adana); Elbistan (K.Maraş). Samples taken from province Niğde are from the central town and the same applies to the localities referring directly to the name of any provinces given. The provinces mentioned and their positions and limits in Turkey are shown on the map in fig. 1.

Specimens from Israel and Jordan are indicated in the text.

Majority of the material has been provided by the following colleagues (in respect of the sending date): G.Altınayar (Plant Protection Institute, Ankara); Dr.M.Aydemir (Plant Protection Institute, Erzincan); Prof.Dr.B.Kovancı (U.U.Faculty of Agriculture); Dr.N.Yabaş, Dr.A.Yiğit, A.Tunç (all, Plant Protection Institute, Adana); Prof.Dr.S. Applebaum (H.U.Faculty of Agriculture, Rehovot, Israel); B.Kaur (Cotton Institute, Antalya); Y.Öneş (Plant Protection Institue, Ankara); Ü.Genç (Biological Control Institute, Antalya); Prof.Dr.Hasan Çanakçıoğlu (I.U.Faculty of Forestry) to whom all I owe my gratitudes. Material from Ankara (except one sample), Niğde, Nevşehir, Konya (except one sample) and partly Adana were collected by the author.

Information related to the world distribution of many species obtained from zur Strassen (1986 and other most recent papers), if otherwise, stated in the text.

All material has been deposited at the Faculty of Agriculture, Plant Protection Department, Antalya.

The species within each family are arranged in alphabetical order in the text.

AEOLOTHRIPIDAE

Aeolothrips collaris Priesner

Probably an omnivorous species. Second stage larvae were found to feed on larvae of **Haplothrips tritici** Kurdjumov on wheat (Tunç, 1975). Associated with flowers of many plant species.

The most common aeolothripid in inner parts of Turkey, may be encountered all over the country.

Several previous records exist from Israel (Mound and Palmer, 1974; see Halperin and zur Strassen, 1981).

It is widely distributed in Mediterranean countries, including Iran, Afghanistan and India.

Material examined: Niğde, 1♂, **Crambe orientalis** L., I. VII. 1978.- Göre, 1♀, **Crambe orientalis**, I. VII. 1978.- Erzincan, 1♀, **Phaseolus vulgaris** L., 1981.- Réhovot (Israel), 1♀, **Gladiolus sp.**, V. 1978.

Aeolothrips ericae Bagnal

Flower inhabiting, prefers Leguminosae.

It has been found in Marmara, Black Sea, Mediterranean and Central Anatolia regions of Turkey (Blunck, 1958; Priesner, 1961 and 1966).

It is a Palaearctic species, but not recorded yet from North Africa.

Material examined: Ortayurt, 1♀, **Phaseolus vulgaris**, 22. VIII. 1980.

Aeolothrips intermedius Bagnal

Its omnivorous habit has been proved by Derbeneva (1967). Also associated mainly with flowers of many plant species as a pollen feeder.

It seems to be the dominating aeolothripid in Black Sea coast of Turkey. But not rare in inner parts and is second common species after **collaris**. It has been recorded in all regions of Turkey.

It is a Palaearctic species.

Material examined: Sarıköy (Beyşehir), 1♀, **Statice** sp., 30. VI. 1978.- Çarşamba, 6♂, 9♀, **Medicago sativa** L., 6. VIII. 1978.- Suluova, 2♂, 2♀, **Allium cepa** L., 4. VII. 1978.- Gelemen, 2♂, 2♀, **Prunus persicae** S. et Z., 19. VI. 1979.- Erzincan, 2♀, **Phaseolus vulgaris**, 1981.

Melanthrips pallidior Priesner

Mainly on flowers of Cruciferae, but not rare on flowers of other plant species.

Only one previous record exists from Israel (Priesner, 1936).

It has been found in most parts of Turkey and seems to be encountered more frequently in southern parts. Not recorded yet from Eastern Anatolia and Black Sea regions.

Its world distribution is Euro-asian.

Material examined: Rehovot (Israel), 1♂, **Gladiolus** sp., 15. II. 1979.

THRIPIDAE

Anaphothrips obscurus Müller

A graminivorous species, is more frequent on cereals before flowering stage. It has been found to build up high populations localy in Central Anatolia, but never in large areas, is considered a serious cereal and grass pest in some parts of the world.

It has been recorded only from Central Anatolia and Black Sea regions of Turkey upto now.

Its world distribution is semi-cosmopolitan.

Material examined: f. brachyptera: Ankara, 2♀, **Hordeum vulgare** L. (glasshouse), 1. XII. 1978.

Aptinothrips rufus Gmelin

Also a graminivorous species, infests cereals and grass. It is an occasional inhabitant of cereals and grass, never to be known to build up high populations in any locality in Turkey, although known as a cereal and grass pest in several parts of the world.

It has been reported from Central Anatolia, Aegean and Mediterranean regions of Turkey.

It is a cosmopolitan species.

Material examined: Göre, 1♀, **Torilis leptocarpa** (Hochst) Towsend, 1. VII. 1978.

Ceratothrips pallidivestis Priesner

Mainly on flowers of Compositae.

The most widely distributed and frequent species of the genus in Turkey. It has been recorded from western parts, no record exist from Eastern Anatolia.

Its distribution includes South European and Black Sea countries, Hungary and Iran.

Material examined: Gelemen, 3♂, 3♀, herb, 19. VI. 1979.

Frankliniella intonsa Trybom

Flower inbabiting, has been found on flowers of a wide range of plant species in Turkey. It has been observed to build up dense populations in cotton flowers which caused deformations in flowers and bolls in recent years.

It is more widely distributed in coastal areas of Turkey, like Black Sea, Mediterranean and Marmara regions. It is rather rare in inner parts (e.g. Central Anatolia).

It is a Palaearctic species.

Material examined: Çarşamba, 10♀, **Medicago sativa**, 6. VII. 1978.- Gelemen, 6♂, 15♀, **Hypericum** sp; 1♀, **Prunus persica**, both 19.

VI. 1979.- Antalya, numerous ♂, ♀, flowers of **Gossypium hirsitum** L., 13. IX. 1982.- Adana, numerous, ♂, ♀, flowers of **Gossypium hirsitum**, 23. VII. 1982.- Ali Fakı (Tarsus), 7♀, flowers of **Fragaria vesga**, 1. VI. 1982.- Aksu, numerous ♂, ♀, flowers of **Gossypium hirsitum**, 1982.

Frankliniella tenuicornis Uzel

A cereal thrips but may also be found on other plants. It has been recorded on all cereals including rice and maize in Turkey.

Its records exist only from Central Anatolia, Black Sea and southern regions of Turkey.

It is a Palaearctic species.

Material examined: Suluova, 10 ♀, **Allium cepa**, 4. VII. 1978.

Kakothrips robustus Uzel

A species inhabiting in flowers of wild and cultivated Leguminosae.

Very rare in Turkey. It is known to occur in Central and Eastern Anatolia, Marmara and Aegean regions. No record exist yet from southern part where other species K. **priesneri** Pelikan seems to replace it on cultivated Leguminosae.

Its world distribution is Euro-asian.

Material examined: Erzincan, 1♀, **Phaseolus vulgaris**, 1981.

Neohydatothrips gracilicornis (Williams)

It is the most common thrips species on various cultivated Leguminosae in Central Anatolia. Mostly on Leguminosae, but is also encountered relatively often on trees and shrubs in Turkey.

Probably distributed all over Turkey although not recorded yet from Southeastern Anatolia region.

It is a Palaearctic species.

Material examined: Beyşehir, 1♀, **Galium humifusum** Breb., 30. VII. 1978.- Suluova, 1♀, **Allium cepa**, 4. VII. 1978.- Gelemen, 1♂, **Vitis vinifera** L.; 1♂, 1♀, **Prunus persica**, both 19. II. 1979.- Ortayurt, 5♂, 6♀, **Phaseolus vulgaris**, 22. VIII. 1980.- Erzincan, 1♀, **Phaseolus vulgaris**, 1981.- Ankara, 7♂, 21♀, **Picea** sp., 3. VIII. 1984.

Odontothrips aemulans Priesner

Inhabiting on flowers of **Vicia cracca** and turf (Jacot-Guillarmod, 1974).

First record for Turkey.

Recorded from Czechoslovakia, Germany, Hungary, Rumania, Yugoslavia and U.S.S.R. (European) (Pitkin, 1972).

Material examined: Çaparkayı (Şabanözü), 1♀, **Triticum aestivum** L. 29. V. 1974.

Oxythrips ajugae Uzel

Inhabiting on trees, especially on Coniferae, but also on herbs.

Its status in Jordan is unknown to the author.

It has been reported from Aegean, Mediterranean and Central Anatolia regions of Turkey (Blunck, 1958; Priesner, 1961 and 1966; Cengiz, 1974).

Its distribution is Palaearctic, but also in North America.

Material examined: Jordan (without specific locality), 4l♂, 78♀, **Pinus halepensis** Miller, 1984.

Scirtothrips mangiferae Priesner

Lives on **Mangifera indica** (mango) and **Parkinsonia aculaeta** (Priesner, 1960). Mango leaves suffer damage from the larvae living underside. Specimens were sent to the author on the damage it caused to mango leaves in Israel.

Not recorded yet from Turkey, although a specimen has been reported from the Greek ıslands in northern Aegean Sea (zur Strassen, 1986).

It has been found in Egypt, Libya, Sudan, Israel, Aden and Saudi Arabia upto date.

Material examined: Arava Valley, Eilat (Israel), 3♂, 61♀, **Mangifera indica**, X. 1980.

Scolothrips longicornis Priesner

Predatory thrips, prey on spider mites. It has been reported

mistakely from Turkey as **S. sexmaculatus** Pergande which is a North American species, does not exist in Turkey. There have been claims that it controlled spider mite populations in economical levels on cotton in limited localities where insecticidal pressure was not heavy in Turkey, but no experimental proof yet.

Although has been reported to occur in Turkey, there are no specific locality records known to the author. It has also been found in Southeastern Anatolia region on cotton.

Material examined: Adana, 5♂, 3♀, **Gossypium hirsitum**, I. VII. 1979.- Erzincan, 12♀, **Phaseolus vulgaris**, 1981.- Aksu, 34♀, **Gossypium hirsitum** IX. 1982.

Taeniothrips atratus Haliday

Flower inbabiting on various plants.

It has been recorded in western half of Turkey.

World distribution Palaearctic without North Africa, introduced to North America.

Material examined: Niğde, 1♀, **Crepis armena** D.C., I. VII. 1978.

Taeniothrips meridionalis Priesner

Flower inhabiting, on many species of plants. The most abundant and second species in frequency and diversity in Ankara which probably applies to whole Central Anatolia as has been seen from the material obtained further.

Its records are only from the western half of Turkey.

It is common in Mediterranean area, but has also been reported in countries up to Central Asia.

Material examined: Sarıköy (Beyşehir), 2♀, **Statice** sp., 30. VI. 1978.- Göre 6♂, 42♀, **Crambe orientalis**, I. VII. 1978.- Niğde, 10♂, 13♀, **Crambe orientalis**, I. VII. 1978.

Taeniothrips simplex Morison

Pest on **Gladiolus** spp.

Several previous records were made from Israel (see Halperin and zur Strassen, 1981).

It is not encountered very often but once found (mostly due to complaints of growers) in any case, always with heavy populations and damage to **Gladiolus** in Turkey which shows again that it can inhabit only on a limited number of plants. It has only been recorded from Marmara and Central Anatolia regions of Turkey.

Its world distribution is cosmopolitan.

Material examined: Rehovot (Israel), 1♂, 20♀, **Gladiolus** sp., 15. II. 1979.

Thrips major Uzel

Inhabits on flowers of various plants. Material collected from different parts of Turkey suggests no host preference for this species. But there is a possibility that is more frequent in forests and neighbouring areas.

By this record probably in all parts of Turkey.

Its world distribution is holarctic.

Material examined: Ortayurt, 2♀, **Phaseolus vulgaris**, 22. VIII. 1980.

Thrips physapus Linne

Flower dwelling species, mostly on flowers of Compositae.

One of the most common species of **Thrips** in Turkey, especially in inner parts like Central Anatolia. There is still no record from eastern half.

It is a Palaearctic species, has been introduced to North America.

Material examined: 1♀, **Centaurea** sp., I. VII. 1978.

Thrips tabaci Lindeman

The most frequent, diversified and in many instances most abundant thrips species in areas so far studied in Turkey. Well known for its damage on tobacco in this country, but also caused damage to onion, garlic and cotton (in seedling stage). Also one of the most common pests on greenhouse grown cucumber and cutflower in southern Turkey.

It has been recorded in all parts of Turkey.

World distribution is cosmopolitan.

Material examined: Göre, 10 ♀, **Cucumis sativus** L.; 23♀, **Torilis leptocarpa**; 1♀, **Crambe orientalis**, all 1. VII. 1978.- Sarıköy (Beyşehir), 8♀, **Statice** sp.; 6♀, **Galium humifusum**, both 30. VI. 1978.- Niğde, 1♀, **Convolvulus galaticus** Rostan; 12♀, **Crambe orientalis**, both 1. VII. 1978.- Suluova, 29♀, **Allium cepa**, 4. VII. 1978.- Gelemen, 3♂, 15♀, **Vitis vinifera**; 3♀, **Hypericum** sp.; 1♂, 2♀, **Prunus persica**, all 19. VI. 1979.- Erzincan, 1♂, 1♀, **Phaseolus vulgaris**, 22. VII. 1980.- ibid, 2♀, **Phaseolus vulgaris**; 24♀, the same; 3♀, the same, all 1981.- Adana, 6♂, 1♀, flowers of **Citrus** sp.; 2♀, **Cucumis sativus**, both 5. V. 1981. - Hacıali, 41♀, **Gossypium hirsitum** 27. VI. 1980.

Thrips trehernei (Priesner)

Also one of the common **Thrips** species along with **physapus** and with almost the same living habits.

Data on its distribution in eastern half of Turkey is still lacking.

It is a Palaearctic species, introduced to North America.

Material examined: Gelemen, 1♂, 19♀, herb, 19. VI. 1979.

PHLAEOTHRIPIDAE

Haplothrips aculeatus Fabricius

A graminivorous species, the most common cereal thrips in coastal areas in the north and south of Turkey.

It shows the same distributional pattern as in Europe being

absent in remote areas from the sea coast in Turkey. It has been recorded from Black Sea, Aegean and Mediterranean regions of Turkey.

Its world distribution is Palaearctic, except North Africa.

Material examined: Çarşamba, 2♂, 5♀, **Medicago sativa**, 6.VII. 1978.- Gelemen, 1♂, herb; 2♀, **Prunus persica**, both 19. VI. 1979.

Haplothrips bolacophilus Priesner

One of the little known phlaeothripid species. Its hosts and living habits not adequately known. But has been found to attack man in several occasions in Antalya (Tunç, 1988).

Its rare records are only from coastal or close to coastal areas of Turkey.

It has been found only in Cyprus, Turkey and Greece upto date.

Material examined: Adana, 1♀, flowers of **Gossypium hirsitum**, 23. VIII. 1982.

Haplothrips knechteli Priesner

Inhabits on leaves of deciduous trees.

First record for Turkey.

It has been reported from South European and Black Sea countries.

Material examined: Adana, 4♂, 59♀, **Malus communis** L., 4. XII. 1979.- Hasanbeyli, 1♂, 8♀, the same, 1979.- Elbistan, 1♂, the same, 14. VIII. 1979.

Haplothrips reuteri (Karny)

Common on a rich diversity of plants, from herbs to trees in Turkey. It is a flower dweller. Probably is the most common phlaeothripid in inner parts of Anatolia, counting on the findings upto date.

Its records relate to western half of Turkey. No record available from Eastern Anatolia.

Its distribution in the world includes Mediterranean and Black Sea countries.

Material examined: Beyşehir, 1♀, **Medicago sativa** 30. VI. 1978. - Göre, 1♂, 1♀, **Achillea nobilis** L.; 1♂, 1♀, **Torilis leptocarpa**, both I. VII. 1978.- Niğde, 2♂, 19 , **Convolvulus galaticus**; 3♀, **Scabiosa rotata**; 1♂, 3♀, **Crepis armena**, all 1. VII. 1978.- Ankara, 2♂, 18♀, **Beta vulgaris** L. (water bait) 17. V. 1983.- Çumra, 1♂, 8♀, **Cuminum cyminum** L., 14. V. 1984.

Haplothrips tritici Kurdjumov

Pest on cereals, particularly wheat.

The most common cereal thrips in inner parts of Turkey. Existing records are from western half of Turkey.

Its world distribution is Palaearctic.

Material examined: Pozantı, 1♂, **Malus communis**, 1979.

DISCUSSION

The eastern, southeastern and northeastern regions are least touched parts of Turkey from the point of Thysanoptera fauna. As it is noticed from the text for most of species dealt, the information on the distribution in eastern half of Turkey which consists of the regions mentioned above is lacking. However records made in neighbouring countries like Iran and Caucasia (Priesner, 1954; zur Strassen, 1970 and Pelikan, 1973) suggeşt that the eastern Anatolia can be added to the distributional areas of some of the such species. Eastern Anatolia lays like an isolated area from the point of knowledge of Thysanoptera fauna between west half of Turkey and countries referred above. There are no good reasons (climatical, topographical etc) to consider this part of the country out of the distributional areas of the species like: **Melanthrips pallidior, Anaphothrips obscurus, Aptinothrips rufus, Ceratothrips pallidivestis, Frankliniella intonsa, Taeniothrips atratus, Ta. meridionalis, Thrips major, Th. physapus, Haplothrips reuteri** and **H. tritici.**

Scirtothrips mangiferae was recorded as a new species to Israel by Halperin and zur Strassen (1981) without any specific data

relating to the location, host and date. Therefore the record given here may be considered the first provided with the proper data.

ÖZET

TÜRKİYE'DE VE BAZI ORTADOĞU ÜLKELERİNDE BULUNAN THYSANOPTERA

Türkiye'den 22, İsrail'den 4 ve Ürdün'den de 1 olmak üzere 26 Thysanoptera türünün yayılışı, konukçuları ve bazı biyolojik özellikleri üzerinde bilgiler verilmektedir. Bu bilgiler yazarın elinde bulunan, Türkiye'nin çeşitli bölgelerinden toplanmış ve henüz tam manasıyla değerlendirilememiş materyalden sağlanan bilgilerle zenginleştirilmiştir.

Türkiye'den toplanan materyalin geldiği iller şekil 1'deki haritada gösterilmektedir.

Türkiye'de toplanan türlerden ikisi **Odontothrips aemulans** Priesner ve **Haplothrips knechteli** Priesner Türkiye için yeni kayıttır.

Türkiye'nin doğu kısmında henüz tespit edilmemiş bazı türlerin İran ve Kafkasya'da kaydedildiği gözönünde tutularak yayılış alanlarına Doğu Türkiye'nin de katılabileceği belirtilmiştir. Bu türler discussion (tartışma) bölümünde sıralanmaktadır.

LITERATURE

Blunck, H., 1958. Thysanopteren aus der Türkei. Beitrage zur Entomologie. 8 (1-2), 98-111.

Cengiz, F., 1974. İzmir ve Manisa Dolaylarında Bağlara Arız Olan Thysanoptera Türleri, Tanınmaları, Konukçuları, Zararları ve Tabii Düşmanları Üzerinde Araştırmalar. Zir.Müc.Kar.Gen.Müd.Araş. 22, İzmir, 86 pp.

Derbeneva, N.N., 1967. New Data on the Biology and Structure of Preimaginal Phases and Stages of the Predatory Thrips **Aeolothrips intermedius** Bagnal. Entom. Rev. **46** (3), 377-386.

Halperin, J. and R. zur Strassen, 1981. Thysanoptera of Forest and Ornamental Woody Plants in Israel with a List of the Species Recorded from Israel. Isr. Jour. Entom. **15**, 21-33.

Jacot-Guillarmod, C.F., 1974. Catalogue of the Thysanoptera of the World, Part 3-Ann. Cape Prov.Mus.nat. Hist., 7 (3), 517-976.

Mound, L.A. and J.M. Palmer, 1974. Notes on Thysanoptera from Israel. Ent. Month. Mag. 109, 102-106.

Pelikan, J., 1972. Thysanoptera Collected in Transcaucasia, Including Descriptions of New Species. Acta. Ent. Bohemoslov. **70**, 30-34.

Pitkin, B.R., 1972. A Revision of the Flower-Living Genus **Odontothrips** Amyot et Serville (Thysanoptera: Thripidae). Bull. British Mus. (Nat. Hist) Ent. 26 (9), 371-402.

Priesner, H., 1936. A Preliminary Review of the Non-Fossil Species of the Genus **Melanthrips** Hal. Bul. Soc. Roy. Ent. Egypt **20**, 29-55.

Priesner, H., 1954. On Some Thysanoptera from Persia. Ann. Mag. Nat. Hist. Ser. **12**, 49-57.

Priesner, H., 1960. A Monograph of the Thysanoptera of the Egyptian Deserts. Cairo, 549 pp.

Priesner, H., 1961. Über Einige Thysanopteren aus der Türkei. Verh. Ver. Naturw. Heimatforsch. **35**, 16-24.

Priesner, H., 1966. Zur Kenntnis der Thysanopteren der Türkei. II.Polsk. Pismo. Ent. **36** (5), 63-74.

Tunç, İ., 1975. Orta Anadolu Bölgesinde Buğdaylara Zarar Yapan Thrips Türlerinin Tespiti ve **Haplothrips tritici** Kurdj.'nin Biyo-Ekolojisi Üzerinde Araştırmalar. Dissertation. Ankara, 119 pp.

Tunç, İ., 1988. Türkiye'de İnsanlara Saldıran Thysanoptera Türleri. Ak.Ü.Zir.Fak. Derg. **1** (1), 97-101.

zur Strassen, R., 1970. Ergänzungen zur Fransenflügler-Fauna des Transkaukasus (Ins.: Thysanoptera). Senckenbergiana Biol. **51** (5-6), 369-385.

zur Strassen, R., 1986. Thysanopteren auf Inseln der Nördlichen Sporaden in der Ägäis (Griechenland). Senckenbergiana Biol. **67** (1-3), 85-129.