

First record of nine species of thrips (Insecta: Thysanoptera) in Qatar

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Abstract

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Nine species of thrips (Thysanoptera) were collected in the urban green spaces of Doha, Qatar for the first time. These are: *Anaphothrips sudanensis*, *Aptinothrips rufus*, *Chirothrips manicatus*, *Ch. meridionalis*, *Frankliniella intonsa*, *F. occidentalis*, *Thrips hawaiiensis*, *T. tabaci* (family Thripidae); and *Haplothrips reuteri* (family Phlaeothripidae). Amongst them the following genera represent a new record for Qatar: *Anaphothrips*, *Aptinothrips*, *Chirothrips*, and *Haplothrips*. The specimens were deposited in the Insect Collection of Department of Entomology, South China Agricultural University (SCAU), and in the collection of Department of Plant Protection, College of Agriculture, Ilam University, Iran (ILAMU).

Keywords: Thysanoptera, Qatar, thrips.

Introduction

The urban environment is a complex of habitats developed by humans from natural sites or agricultural land (16). Vegetation plays a key role in urban environments by providing food, breeding sites and shelter for animals and plants, and also by modifying microclimate. Local conditions, climate, and available resources determine the distribution of some arthropods in the urban environment, and for some species their abundance is limited. Other species are broadly adapted to the resources and survive in and around buildings, and these are cosmopolitan in their distribution and pest status (17).

The Thysanoptera with more than 6000 known species is one of the orders of insects distributed worldwide (9, 10, 12). This order includes nine families under two suborders, with only one family Phlaeothripidae in suborder Tubulifera (14). Information related to the Thysanoptera of Qatar is limited, and this is the first report of thrips collected from this country. Several reports on Thysanoptera in the region are available. A checklist of thrips from Yemen was published in 2006 (21) and 2007 (22), from the UAE in 2005 (20) and 2007 (23) and some recent publications on fauna of Iraq by Hamodi and Abdul-Rassul (3, 4, 5, 6). In addition, there are several studies on fauna of Iran by the first author (9, 10).

Materials and Methods

This study was carried out in Doha, Qatar. Adult thrips were collected from different host plants by using sweep net and shaking flowers and leaves over a white dish and specimens were kept in 70% ethanol and transferred to laboratory. The method used for preparing and mounting thrips on slides was reported earlier (11), and some samples were mounted with Canada balsam. All descriptions and photos were made with a Leica DM IRB microscope, with a Leica Image 1000 system. The specimens were deposited in

the Insect Collection of Department of Entomology, South China Agricultural University (SCAU), and in the collection of Department of Plant Protection, College of Agriculture, Ilam University, Iran (ILAMU).

Results

The following nine species belonging to two families, Thripidae (in suborder Terebrantia) and Phlaeothripidae (in suborder Tubulifera) were identified. All diagnosis of the following species was originally described by the authors.

I - Family Thripidae:

Anaphothrips sudanensis Trybom, 1911 (19) (Figure 1) - Female macroptera or microptera. Body bicolor, generally dark brown with abdominal segments III-V yellow, color pattern variable; legs yellow; antennal segments I-II brown, III-IV yellow, V-VIII brown; fore wings pale with dark sub-basal band. Head slightly longer than wide; ocellar setae III outside triangle; eyes with 6 pigmented facets. Antennae 8-segmented, with short forked sense cone on antennal segments III & IV. Pronotum weakly sculptured. Metascutum irregularly reticulate, median setae far back from anterior margin; fore wing first vein with about 6 setae on basal half, 1 seta medially and 2 distally; second vein with about 8 setae; clavus with about 4-5 veinal setae and one seta at base. Abdominal tergites often with small dentate microtrichia on sculpture lines laterally; tergite VIII with posteromarginal comb complete. Abdominal sternites without discal setae; sternite II with 2 pairs of marginal setae, III-VII with 3 pairs, median pair on VII arising in front of margin. Ovipositor well developed. Male with variable color, bicolor or yellow, abdominal sternites III-VIII with large C-shaped pore plate (= glandular area).

The identified sample was one female collected from Rumeilah Park, Doha, Qatar, from grasses (Poaceae) on 22.07.2012 and deposited in SCAU.

Aptinothrips rufus (Haliday, 1836) (2) (Figure 2) - Female aptera. Body faintly reticulate, body and legs yellow to yellowish-brown, antennal segment VI shaded brown. Head longer than wide, without long setae, ocelli absent. Antennae 6-segmented; antennal segment VI pedicilate, twice as long as V and tapering to apex, segments III & IV each with simple sense cone. Pronotum without long setae. Meso- and metasternum without spinula. Tarsi each with one segment. Abdominal tergites and sternites with no posteromarginal craspedum; tergite IX postero-median setae short, about 0.2 times as long as lateral pair of setae; tergites with discal setae variable, 6–9 setae; sternites with many discal setae; sternites III–VI with postero-marginal setae all arising on the margin. Ovipositor well developed. Male similar to female, but smaller; sternites without pore plate; tergite IX with 2 pairs of stout thorn-like setae.

The identified samples were five females collected from Rumeilah Park, Doha, Qatar, from grasses (Poaceae), on 22.07.2012 and deposited in ILAMU.

Chirothrips manicatus (Haliday, 1836) (2) (Figure 3) - Female macroptera. Body brown, fore wings light brown. Head smaller than pronotum, prolonged in front of eyes; with 3 pairs of ocellar setae, pair III anterolateral to fore ocellus. Antennae 8-segmented, II with external margin prolonged and bearing a terminal seta-like sensorium; antennal segments III & IV each with stout simple sense cone. Pronotum trapezoidal, with 2 pairs of long posteroangular setae, and 6–7 pairs of posteromarginal setae. Metanotum reticulate, median setae situated behind anterior margin. Fore wing pointed at apex, first vein with 2 distal setae, second vein with 3–4 setae. Abdominal tergites with antecostal ridge strong, complete lines of sculpture medially; posterior margins with entire but weakly lobed craspedum; median campaniform sensilla near antecostal ridge and lateral campaniform sensilla very close to antecostal ridge. Abdominal sternites with 3 pairs of marginal setae, median pair on VII arising in front of margin; posterior margins with craspedum of distinctive tubercles. Ovipositor weak with faint teeth. Male apterous, smaller than female; ocelli absent; sternites III–VII with small circular pore plates.

The identified sample was one female collected from Salata Park, Doha, Qatar, from grasses (Poaceae), on 22.07.2012 and deposited in SCAU.

Chirothrips meridionalis Bagnall, 1927 (1) - Body brown, tarsi yellow, forewing and clavus weakly shaded. Head weakly produced in front of eyes; vertex with two pairs of setae, ocellar setae lateral to fore ocellus. Antennal segment II external margin almost straight, apex acute with sub-terminal seta; sensorium on segment III simple and curving around segment, on IV distinctly Y-shaped; antennal segment I without transverse ridge on dorsal surface. Abdominal tergites with campaniform sensilla posterior to median setae; posterior margins of tergites II–VIII with broadly rounded independent lobes fused at bases into continuous craspedum; sternites II–VI posterior margins slender independent craspedate lobes, also laterally on VII. Male macropterous, smaller than female; antennal segment II only weakly produced on external margin.

The identified samples were six females collected from Salata Park, Doha, Qatar, from grasses (Poaceae), on 22.07.2012, and deposited in SCAU.

Frankliniella intonsa (Trybom, 1895) (18) (Figure 4) - Female macroptera. Body yellow or yellowish brown; antennal segments I–II brown, III–V yellowish; apices of segments IV & V brownish; VI–VIII brown; fore wings clear yellow; legs predominantly yellow. Head with three pairs of ocellar setae; pair III longest and situated on ocellar triangle; 5 pairs of postocular setae present. Antennal 8-segmented, III & IV with forked sense cone; segment VIII as long as VII. Pronotum with five pairs of major setae; anteromarginal setae shorter than anteroangular setae, one pair of minor setae present medially between posteromarginal submedian setae. Metanotum with median setae situated at anterior margin, MCS absent. Mesofurca with spinula. Fore wings with two complete rows of dark setae and fringe cilia wavy. Abdominal tergite VIII with sparse comb of microtrichia on posterior margin. Sternites without discal setae; sternite II with 2 pairs of marginal setae, III–VII with 3 pairs; sternite VII with marginal setae on posterior margin. Ovipositor well developed. Male macroptera, similar to female but smaller and paler; tergite VIII without posteromarginal comb; tergite IX with postero-lateral setae stout; pore plates on abdominal sternites III–VII broad, about one-third the width of the sternites.

The identified samples were seven females collected from Rumeilah Park, Doha, Qatar, from different flowers, on 22.07.2012 and deposited in ILAMU.

Frankliniella occidentalis (Pergande, 1895) (15) (Figure 5) - Female macroptera. Body and legs yellow with brown patch on tergites; antennal segments III–V yellow; fore wing pale with dark setae. Head with ocellar setae pair III arising on anterior margins of triangle; postocular setae pair I present. Antennae 8-segmented; with forked sense cone on III & IV, VIII longer than VII. Pronotum with five pairs of major setae; anteromarginal setae slightly shorter than anteroangular setae, one pair of minor setae present medially between posteromarginal setae. Metanotum with two pairs of setae at anterior margin, metanotal campaniform sensilla present. Abdominal tergite VIII complete, with short slender microtrichia. Abdominal sternites III–VII without discal setae; sternite II with 2 pairs of posteromarginal setae, III–VII with 3 pairs. Ovipositor well developed. Male macroptera, with postero-lateral setae stout on tergite IX; tergite VIII without marginal comb; sternites III–VII with transverse pore plates.

The identified sample were six females and one male collected from Rumeilah Park, Doha, Qatar, from different flowers, on 22.07.2012, and deposited in SCAU.

Thrips hawaiiensis (Morgan, 1913) (13) (Figure 6) - Female macroptera. Body brown; legs yellowish; antennal segment III yellow; fore wing brown with base paler. Head with two pairs of ocellar setae; pair III situated outside anterior margins of ocellar triangle; postocular setae pairs I & III slightly shorter than ocellar setae pair III. Antennae 7- or 8-segmented, III and IV with short forked sense cones;

segments VII and VIII short. Pronotum with two pairs of long posteroangular setae, posterior margin with three pairs of setae. Mesonotum with lines of sculpture between and around campaniform sensilla near anterior margin. Metanotum with lines of sculpture longitudinal medially, but transverse at anterior; median setae situated at anterior margin, MCS present. Fore wing first vein with three distal setae, and 6-8 basal setae; second vein with about 14-17 setae; clavus with five veinal setae. Abdominal tergite II with four lateral marginal setae; tergite VIII with comb complete on posterior margin; tergite IX with two pairs of campaniform sensilla; pleurotergites without discal setae. Sternites with discal setae; sternite II with two pairs of marginal setae, III-VII with three pairs, the median pair on VII arising in front of margin. Male macroptera, similar to female but smaller and paler; tergite VIII with no marginal comb; tergite IX with median setae S1 slightly longer than S2 and equidistant from B2 and from each other; sternites III-VII with transverse pore plates anterior to discal setae.

The identified samples were four females collected from Salata Park, Doha, Qatar, from different flowers, on 22.07.2012, and deposited in ILAMU.

***Thrips tabaci* Lindeman, 1889** (8) (Figure 7) - Female macroptera. Body varying in color from yellow to dark brown; antennal segments III and IV brown with basal half pale; fore wings pale. Head with two pairs of ocellar setae; pair III small and arising on anterior margins or just within ocellar triangle; postocular setae pairs I-III about equal to ocellar setae III in length. Antennae 7-segmented, with forked sense cones on antennal segments III and IV. Pronotum with two pairs of posteroangular setae and 3 or 4 pairs of posteromarginal setae. Metanotum irregularly reticulate medially with lines converging to midpoint of posterior margin; median setae short and situated behind anterior margin; MCS absent. Fore wing first vein usually with 4 (sometimes with about 4-7) distal setae, second vein with row of about 13-15 setae. Abdominal tergite II with three lateral marginal setae; V-VIII with ctenidia present laterally; tergite VIII with complete comb on posterior margin; tergite IX with one pair of campaniform sensilla on half posterior margin; pleurotergites without discal setae but with sculpture of rows of fine microtrichia. Abdominal

sternite II with two pairs of marginal setae, III-VII with three pairs, the median pair on VII arising in front of margin; sternites without discal setae. Male macroptera, smaller than female and body yellow; tergite VIII with marginal comb represented by a few irregular microtrichia; sternites III-V with narrow transverse pore plates.

The identified sample were two females collected from Rumeilah Park, Doha, Qatar, from from different flowers, on 22.07.2012, and deposited in ILAMU.

II. Family Phlaeothripidae:

***Haplothrips reuteri* (Karny, 1907)** (7) (Figure 8) - Body black; antennal segment III a little paler, apex of fore tibiae and fore tarsi yellowish brown. Head with maxillary stylets retracted to postocular setae and sometimes to posterior eyes; postocular setae long and pointed. Antennae 8-segmented, segment III with two sensoria. Pronotum smooth, only reticulated in posterior margin; five pairs of finely pointed major setae present, anteromarginal setae more than twice as long as discal setae but shorter than anteroangulars. Fore tarsal tooth in female minute, sometimes apparently absent, but distinct, and sometimes very big in males. Mesopresternum eroded medially into two lateral triangles, but sometimes weakly joined medially. Forewing with 4-10 duplicated cilia, cilia at wing apex plumose; bases of sub-basal forewing setae arranged in a triangle. Pelta triangular; tergites VII and VIII with 3-6 micro setae; tergite IX setae S1, S2 and S3 acute, S1 long, a little shorter than tube, sub-equal to S2, S1 on other tergites pointed or finely pointed. Tube long, 2.6-3.0 times as long as basal width. Male with setae S2 thicker and smaller than S1 and S3; pseudovirga bifid at tip, bearing two small appendages at apex.

The identified samples were three females collected from Rumeilah Park, Doha, Qatar, from different flowers, on 22.07.2012, and deposited in ILAMU.

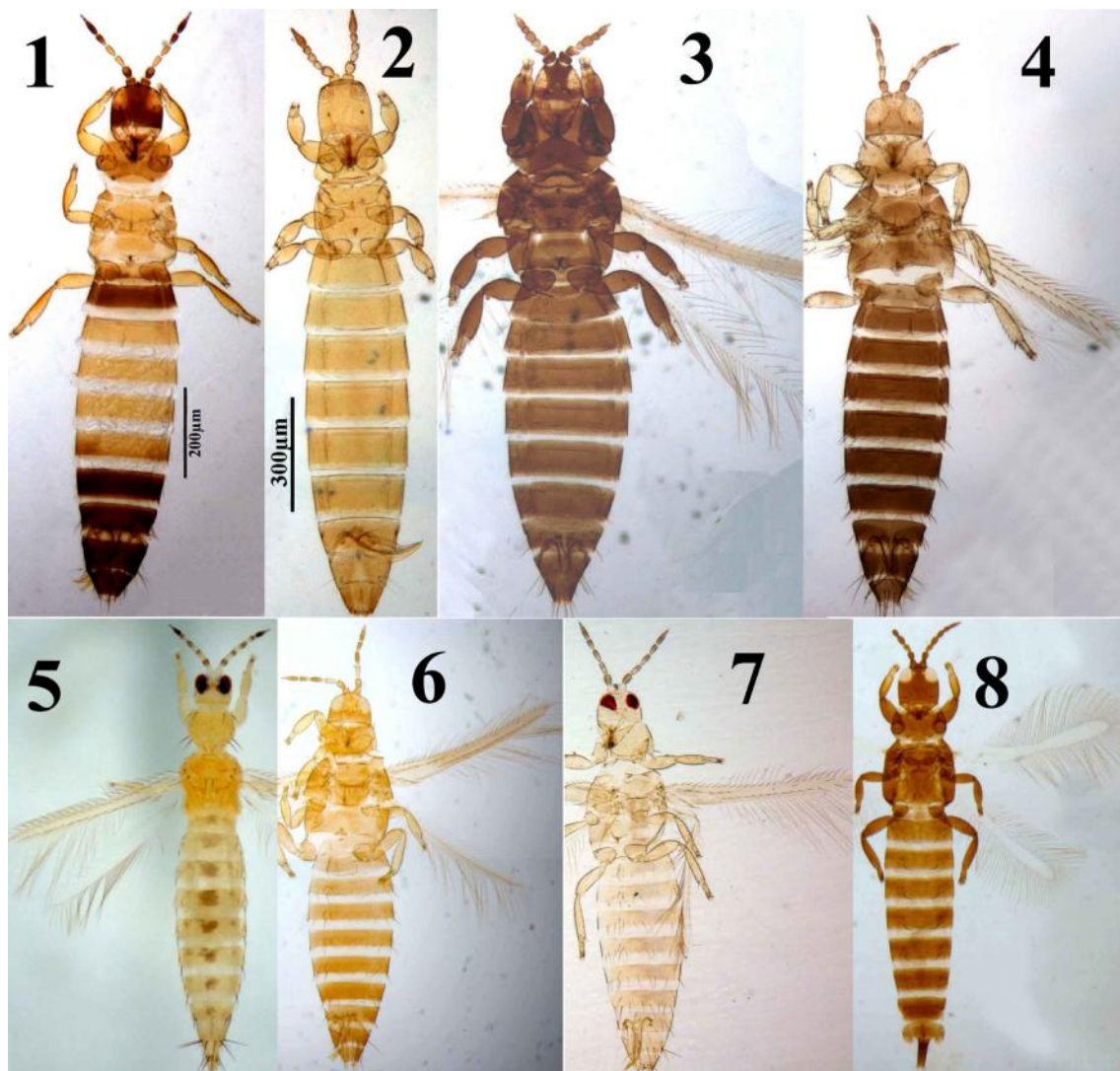
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المخلص

ميراب بالو، م.، س. ل. يانغ و إكس. ل. تونغ. 2014. التسجيل الأول لتسعة أنواع من التريس (Insecta: Thysanoptera) في قطر. مجلة وقاية النبات العربية، 32(3): 278-282.

تم جمع تسعة أنواع من التريس (متشابهات الأجنحة) للمرة الأولى من المساحات الخضراء المدنية في الدوحة، قطر. وكانت على النحو التالي: *F. occidentalis*, *Frankliniella intonsa*, *Ch. meridionalis*, *Chirothrips manicatus*, *Aptinothrips rufus*, *Anaphothrips sudanensis* و *Haplothrips reuteri* (فصيلة Phlaeothripidae). والأجناس التالية تعد تسجيلاً أولاً في قطر: *Haplothrips* و *Chirothrips*, *Anaphothrips*. تم إيداع العينات في المجموعة الحشرية لقسم الحشرات، جامعة جنوب الصين الزراعية (SCAU) وفي مجموعة وقاية النبات، كلية الزراعة، جامعة إيلام (ILAMU)، إيران .
كلمات مفتاحية: Thysanoptera، قطر، تريس.



Figures 1-8. (1) *Anaphothrips sudanensis*; (2) *Aptinothrips rufus*; (3) *Chirothrips manicatus*; (4) *Frankliniella intonsa*; (5) *F. occidentalis*; (6) *Thrips hawaiiensis*; (7) *T. tabaci*; (8) *Haplothrips reuteri*.

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