

Eight New Records of Genus *Acanthaspis* (Hemiptera: Reduviidae) from Madhya Pradesh, India

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Abstract: The paper presents the new record of eight species of the genus *Acanthaspis* viz., *A. fulvipes* (Dall.), *A. quinquespinosa* (Fab.), *A. trimaculata* Reuter, *A. siva* Dist., *A. luteipes* Walker, *A. sexguttata* (Fab.), *A. flavipes* Stal and *A. rugulosa* Stal, belonging to family Reduviidae of the order Hemiptera from Madhya Pradesh, India.

Key words: Assassin bugs • Central India

INTRODUCTION

The Heteroptera, or true bugs represent the largest and most diverse group of hemimetabolous insects. Reduviids occurring throughout the world, are voracious predators and referred to as "Assassin bugs". These bugs may not be useful as predators of specific pests as they are polyphagous, but they are valuable predator to a variety of insect pests. They are generally found in tropical rain forest, semi-arid zone, scrub jungle and agro-ecosystem but mostly common in tropical rain forest ecosystem.

The genus *Acanthaspis* Amyot and Serville belongs to subfamily Reduviinae (=Acanthaspidinae) and commonly found in Oriental and Ethiopian region. Conservation of assassin bugs can be achieved only if their biosystematics and bio-ecology are understood thoroughly. The study includes record of eight species of genus *Acanthaspis* viz. *A. fulvipes* (Dall), *A. quinquespinosa* (Fab.), *A. trimaculata* Reuter, *A. siva* Dist., *A. luteipes* Walker, *A. sexguttata* (Fab), *A. flavipes* (Stal) and *A. rugulosa* Stal for the first time from Madhya Pradesh, India. Altogether, 42 species of genus *Acanthaspis* so far known from India are studied through the works of Fabricius [1, 2], Wolf [3], Burmeister [4], Dallas [5], Stal [6-10], Walker [11], Reuter [12, 13], Distant [14-18], Livingstone and Murugan [19], Vennison and Ambrose [20], Ambrose [21, 22], Murugan and

Livingstone [23], Biswas and Bal [24, 25], Biswas *et al.* [26], Biswas and Mitra [27]. Rahul and Hegde [28] reported *Acanthaspis quinquespinosa* Fabricius from Central India. However, the scattered information on assassin bugs from Madhya Pradesh was reported by Biswas and Ghosh [29], Chandra *et al.* [30] Chandra [31, 32] and Ramakrishna *et al.* [33]. The nymphal camouflaging on predation and cannibalism in the *Acanthaspis siva* was studied by Ambrose [34].

Abbreviation Used: PTR: Pench Tiger Reserve, BSCCP: Bansagar Canal Construction Project, MNP:Madhav National Park, SWLS: Singhori Wildlife Sanctuary.

MATERIAL AND METHODS

While working on insect fauna of national parks and sanctuaries, several examples of genus *Acanthaspis* were also collected from Singhori Wildlife Sanctuary, Raisen; Pench Tiger Reserve, Seoni; Madhav National Park, Shivpuri; Jabalpur District and Bansagar Canal Construction Project, Sidhi by the hand picking, net trap and light tarp methods. The specimens were set pinned, dried and identified with the help of literature available in Zoological Survey of India library. Photography of insects was done by Sony Digital Still Camera-H 10 camera. Morphology of bugs were studied by Leica microscope M 205-A.

Systematic Account:

Family: Reduviidae

Subfamily: Reduviinae (Acanthaspidinae) Distant, 1902

Genus: *Acanthaspis* Amyot and Serville 1843

***Acanthaspis flavipes* Stal, 1855:**

1902. *Acanthaspis flavipes*, Distant, *Fauna Brit. India, Rhynchota*, 2:260.

2006. *Acanthaspis flavipes*: Ambrose, *Zoos'Print Joun.* 21(9):19.

Material examined: 1 ex., PTR, Seoni, Karmajhiri, 21.vi.2001, coll. K. Chandra.

Diagnostic character: Body brown; large transverse spot to the middle of corium, spot to connexivum; rostrum, legs, apex of scutellar spine luteous; pronotum with anterior lobe strongly sculptured, lateral angle spinously produced; scutellar spine obliquely ascendant.

Distribution: India; Madhya Pradesh, Maharashtra and West Bengal. *Elsewhere*: Bangladesh, Bhutan.

***Acanthaspis fulvipes* (Dallas, 1850):**

1850. *Platymeris fulvipes* Dallas, *Tr. Ent. Soc.*:f.3

1902. *Acanthaspis fulvipes*: Distant, *Fauna Brit. India, Rhynchota*, 2: 259.

2006. *Acanthaspis fulvipes*: Ambrose, *Zoos'Print Joun.*, 21(9): 19.

Material examined: 1 ex., PTR, Seoni, Karmajhiri, 20.vii.2001, coll. R.K. Singh

Diagnostic character: Pronotum with anterior lobe moderately sculptured and deeply centrally foveate on posterior margin; posterior lobe rugulose, its lateral angles acutely spinous, scutellar spine long, obliquely ascendant; antennae, rostrum, legs and central disk of abdomen reddish brown; a large spot behind middle of corium and spot to connexivum above and beneath ochraceous.

Distribution: India: Assam, Madhya Pradesh and Sikkim. *Elsewhere*: Bangladesh, Myanmar and Sri Lanka.

***Acanthaspis luteipes* Walker, 1873:**

1902. *Acanthaspis luteipes* Distant, *Fauna Brit. India, Rhynchota*, 2: 260.

2007. *Acanthaspis luteipes*: Biswas and Bal, *Fauna of Andhra Pradesh, State fauna series*, 5(Part-3): 342.

Material examined: 1 ex., Jabalpur, Bheraghat, 26.i.2012, coll. Sandeep Kushwaha.

Diagnostic character: Body purplish brown; head with a spot on each side of ocelli and a distinct, longitudinal incision between eyes; pronotum with anterior lobe moderately sculptured and centrally sulcate; a large transverse spot almost crossing corium at inner angle; spot to connexivum above and beneath, coxae trochanters and legs pale ochraceous.

Distribution: India, Madhya Pradesh, Andhra Pradesh, Karnataka and West Bengal.

***Acanthaspis quinquespinosa* (Fabricius, 1781):**

1902. *Acanthaspis quinquespinosa* Distant, *Fauna Brit. India, Rhynchota*, 2: 257.

2007. *Acanthaspis quinquespinosa*: Biswas and Bal, *Fauna of Andhra Pradesh, State fauna series*, 5(Part -3): 342.

Material examined: 1 ex., BSCCP, Sidhi, Pochkhari, 23.vii.1999, coll. K. Chandra

Diagnostic character: Body black; two lateral and two discal spines to pronotum; a transverse discal spot to corium and spot to connexivum above and beneath luteous; anterior lobe of pronotum strongly sculptured, posterior lobe rugose with a long lateral spine on each side and with two shorter erect discal spines between them; scutellar spine long, obliquely ascending.

Distribution: India; Andhra Pradesh, Assam, Bihar, Madhya Pradesh, Maharashtra, Meghalaya and West Bengal.

***Acanthaspis rugulosa* Stal, 1863:**

1863. *Acanthaspis rugulosa* Stal, *Ann. Soc. Ent. Fr.*: 49.

1902. *Acanthaspis rugulosa*: Distant, *Fauna Brit. India, Rhynchota*, 2: 264.

2006. *Acanthaspis rugulosa*: Ambrose, *Zoos'Print Joun.*, 21(9): 20.

Material examined: 1ex. Pench National Park, area around Ranidah Forest Rest House, Dist. Seoni, 1.iii.1976, coll. H. Khajuria and party.

Diagnostic character: Pitchy black in colour; a pale ochraceous large spot almost crossing corium in its inner angle; anterior lobe of pronotum strongly sculptured, posterior lobe rugulose with its lateral angle dentately produced; connexivum strongly recurved; scutellar spine obliquely ascendant.

Distribution: India; Madhya Pradesh, Maharashtra, Tamil Nadu and West Bengal.

***Acanthaspis sexguttata* (Fabricius, 1775):**

1902. *Acanthaspis sexguttata* Distant, *Fauna Brit. India, Rhynchota*, 2: 270.

2003. *Acanthaspis sexguttata*: Biswas and Bal, *Fauna of Sikkim, State Fauna Series*, 9(Part -2): 529.

2006. *Acanthaspis sexguttata*: Ambrose, *Zoos'Print Journ.*, 21(9): 20.

Material examined: 1 ex., MNP, Shivpuri Rest House, 07.xii.2001, coll. D. Nema and S. Ahirwar.

Diagnostic character: Posterior pronotal lobe transversely rugulose with four flavous testaceous spots, anterior lobe distinctly sculptured, corium with sub basal and a larger about rounded subapical spot and large apical spot to membrane greyish flavescent, femora annulated near apex and the tibiae biannulate; scuteller spine obliquely ascendant.

Distribution: India: Madhya Pradesh, Karnataka, Sikkim and West Bengal.

***Acanthaspis siva* Distant, 1902:**

1902. *Acanthaspis siva* Distant, *Fauna Brit. India, Rhynchota*, 2: 265.

2006. *Acanthaspis siva*: Ambrose, *Zoos'Print Journ.*, 21(9): 20.

Material examined: 1 ex., SWLS, Raisen, Belaon, 19.ix.11, coll. S. Sambath.

Diagnostic character: Body black and rugulose; corium with basal and sub basal angular creamy spot; connexivum spotted pale ochraceous; antennae basal joint black and remaining joints brown in colour; pronotum posterior lobe rugulose and centrally sulcate; scutellar spine ascendant obliquely, apex of membrane creamy white.

Distribution: India: Madhya Pradesh, North and Central India and Tamil Nadu.

***Acanthaspis trimaculata* Reuter, 1887:**

1902. *Acanthaspis trimaculata* Distant, *Fauna Brit. India, Rhynchota*, 2: 268.

2007. *Acanthaspis trimaculata*: Biswas and Bal, *Fauna of Andhra Pradesh, State fauna Series*, 5(Part-3): 341.

Material examined: 1 ex., PTR, Seoni, Tikari Camp, 24.vii.2001, coll. K. Chandra.

Diagnostic character: Black in colour, legs and antennae, a round spot behind the middle of corium, ochraceous; a large sub-apical white spot to membrane with its apex emarginated; connexivum with testaceous spots; pronotum with disk of its posterior lobe unarmed, posterior lateral angles prominent, shortly dentately produced.

Distribution: India, Madhya Pradesh andhra Pradesh, Maharashtra and Northern India.

RESULTS

While working on unidentified collection of insects from Madhya Pradesh, additional eight species of the genus *Acanthaspis* viz. *A. flavipes* (Stal), *A. fulvipes* (Dall.), *A. luteipes* Walker, *A. quinquespinosa* (Fab.), *A. rugulosa* Stal, *A. sexguttata* (Fab.), *A. siva* Dist., *A. trimaculata* Reuter were identified. The species marked with asterisks are new record to the state fauna of Madhya Pradesh (Table -1 & Plate-1&2). It is observed that diversity of this genus may further increase in Madhya Pradesh, if such more intensive studies are undertaken.



Table 1: A list of species of genus *Acanthaspis* recorded from India with their distribution and authors references

S.N.	Name of the species	Distribution in India	References
1.	<i>Acanthaspis alagiriensis</i> Murugan & Livingstone, 1994	Tamil Nadu	Murugan and Livingstone (1994), Ambrose (2006)
2.	<i>A. angularis</i> Stal, 1859	Maharashtra, Tamil Nadu	Stal (1859), Distant (1902), Ambrose (2006)
3.	<i>A. annulicornis</i> Stal, 1874	North India	Stal (1874), Distant (1902), Ambrose (2006)
4.	<i>A. apicata</i> Distant, 1903	Jammu & Kashmir, Tamil Nadu	Distant 1903, Distant(1902), Ambrose (2006)
5.	<i>A. biguttula</i> Stal, 1863	India	Stal (1863), Distant (1902), Ambrose (2006)
6.	<i>A. bistillata</i> Stal, 1858	Andaman Island	Stal (1858), Distant(1902) Ambrose(2006)
7.	<i>A. bombayensis</i> Distant, 1909	Maharashtra	Distant (1909), Ambrose (2006)
8.	<i>A. carinata</i> Murugan & Livingstone, 1994	Tamil Nadu	Murugan and Livingstone (1994), Ambrose (2006)
9.	<i>A. cincticrus</i> Stal, 1859	Assam, Meghalaya	Stal (1859), Distant(1902), Ambrose (2006)
10.	<i>A. concinnula</i> Stal, 1863	Deccan	Stal (1863), Distant (1902), Ambrose (2006)
11.	<i>A. coprologus</i> Annandale (1906)	India	Ambrose (2006)
12.	<i>A. coranodes</i> Stal, 1874	India	Stal (1874), Ambrose (2006)
13.	<i>A. flavipes</i> Stal, 1855*	Maharashtra, Madhya Pradesh, West Bengal	Stal (1855), Ambrose (2006) Distant (1902), Biswas <i>et.al.</i> (1994)
14.	<i>A. fulvipes</i> (Dallas, 1850)*	Assam, Sikkim, Madhya Pradesh	Dallas (1850), Distant(1902), Ambrose(2006)
15.	<i>A. gulo</i> Stal, 1863	India	Stal (1863), Distant (1902), Ambrose (2006)
16.	<i>A. helluo</i> Stal, 1863	Assam, Meghalaya, Nagaland	Stal (1863), Distant (1902), Ambrose (2006)
17.	<i>A. laoensis</i> Distant, 1919	Andhra Pradesh	Distant (1919), Ambrose (2006)
18.	<i>A. lineatipes</i> Reuter, 1881	West Bengal	Reuter (1881), Distant (1902), Ambrose (2006)
19.	<i>A. livingstonei</i> Vennison & Ambrose, 1988	Kerala	Vennison & Ambrose 1988, Ambrose 2006
20.	<i>A. lutepes</i> Walker, 1873*	Karnataka, North India, Madhya Pradesh, West Bengal	Walker (1873), Distant (1902), Ambrose (2006)
21.	<i>A. maculata</i> Distant, 1910	West Bengal	Distant (1910), Ambrose (2006)
22.	<i>A. megaspila</i> Walker, 1873	India	Walker (1873), Distant (1902), Ambrose (2006)
23.	<i>A. micrographa</i> Walker, 1873	North India	Walker (1873), Distant (1902), Ambrose (2006)
24.	<i>A. minutum</i> Livingstone & Murugan, 1988	Andhra Pradesh	Livingstone and Murugan (1988)
25.	<i>A. nigricans</i> Ambrose, 1994	Tamil Nadu	Ambrose (1994)
26.	<i>A. nigripes</i> Livingstone & Murugan, 1988	Andhra Pradesh, Tamil Nadu	Livingstone and Murugan (1988), Ambrose (2006)
27.	<i>A. pedestris</i> Stal, 1863	Tamil Nadu	Stal (1863), Distant (1902). Ambrose (2006)
28.	<i>A. pernobilis</i> Reuter, 1881	West Bengal	Reuter (1881), Distant (1902) Ambrose (2006)
29.	<i>A. philomanmariae</i> Vennison & Ambrose, 1988	Tamil Nadu	Vennison and Ambrose (1988), Ambrose (2006)
30.	<i>A. pustulata</i> Stal, 1874	Assam, Meghalaya	Stal (1874), Ambrose (2006)
31.	<i>A. quinquespinosa</i> (Fabricius, 1781)*	Andhra Pradesh, Assam, Bihar, Madhya Pradesh, Maharashtra, Meghalaya, West Bengal	Fabricius (1781), Distant (1902), Ambrose (2006)
32.	<i>A. rama</i> Distant, 1902	Orissa, Sikkim	Distant (1902), Ambrose (2006)
33.	<i>A. rugulosa</i> Stal, 1863*	Madhya Pradesh, Maharashtra, West Bengal,	Stal (1863), Distant (1902), Ambrose (2006)
34.	<i>A. sexguttata</i> (Fabricius, 1775)*	Madhya Pradesh, Karnataka, Sikkim, Tamil Nadu, West Bengal	Fabricius (1775), Ambrose (2006) Biswas and Bal (2003), Biswas <i>et.al.</i> (1994).
35.	<i>A. siruvanii</i> Livingstone & Murugan, 1988	Tamil Nadu	Livingstone and Murugan (1988), Ambrose (2006)
36.	<i>A. siva</i> Distant, 1902*	Madhya Pradesh, North & Central India, Tamil Nadu	Distant (1902), Ambrose (2006)
37.	<i>A. subrufa</i> Distant 1903	Karnataka	Distant (1903), Ambrose (2006)
38.	<i>A. tavoyana</i> Distant, 1903	India	Distant (1903), Ambrose (2006)
39.	<i>A. tergemina</i> Burmeister, 1835	Tamil Nadu	Burmeister (1835), Ambrose (2006)
40.	<i>A. trimaculata</i> Reuter, 1887*	Madhya Pradesh, Maharashtra, Northern India	Reuter (1887), Ambrose (2006)
41.	<i>A. unifasciata</i> (Wolff, 1804)	India	Wolff (1804), Ambrose(2006)
42.	<i>A. variegata</i> Stal, 1874	India	Stal (1874), Ambrose (2006)

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