



Research paper

A study of coccinellid (Insecta: Coleoptera: Coccinellidae) fauna of Karnataka (Uttar Kannada, Udipi and Mangalore Dakshin Kannada) Districts

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Abstract: The present paper deals 13 species belonging to 11 Genera of family Coccinellidae from Western Ghats region of three districts of Karnataka.

Introduction:

Karnataka has three coastal states: Uttar Kannada, Udipi and Dakshin Kannada. Uttar Kannada is bordered by Goa and Dakshin Kannada has Kerala to its border. The Western Ghats pass through these states, which is a biodiversity hotspot. Coccinellidae has carnivorous, fungus feeding (mycophagus) and phytophagus species. Studies have been done in different parts of India by various researchers e.g (Kapur 1949 and 1956), Chakraborty and Biswas 2003) in Sikkim, (Chakraborty and Biswas, 2003) in Uttarakhand, Sasaji from Orient, (Poorani 2001, 2002, and 2011) and

(Singh and Singh, 1991) have also done studies on Coccinellids. Some of them are also agents of biological control of pests. (Sankaran, 1974). (Karuna *et al.*, 2013) described usefulness of *Illeis cincta* on Sunflower. (Siplinski, 2007) has described ladybird beetles from Australia.

Keywords: Coccinellidae, Karnataka, Udipi, Uttarkannada and Mangalore.

Materials and Methods:

Survey tours of study area in Western Ghats region of three districts of Karnataka viz. Uttar Kannada, Udipi and Dakshin Kannada. (Fig.1) were undertaken. The insects were collected with help of hand net and also handpicked. The collected insects were killed by Ethyl acetate and preserved as a dry.

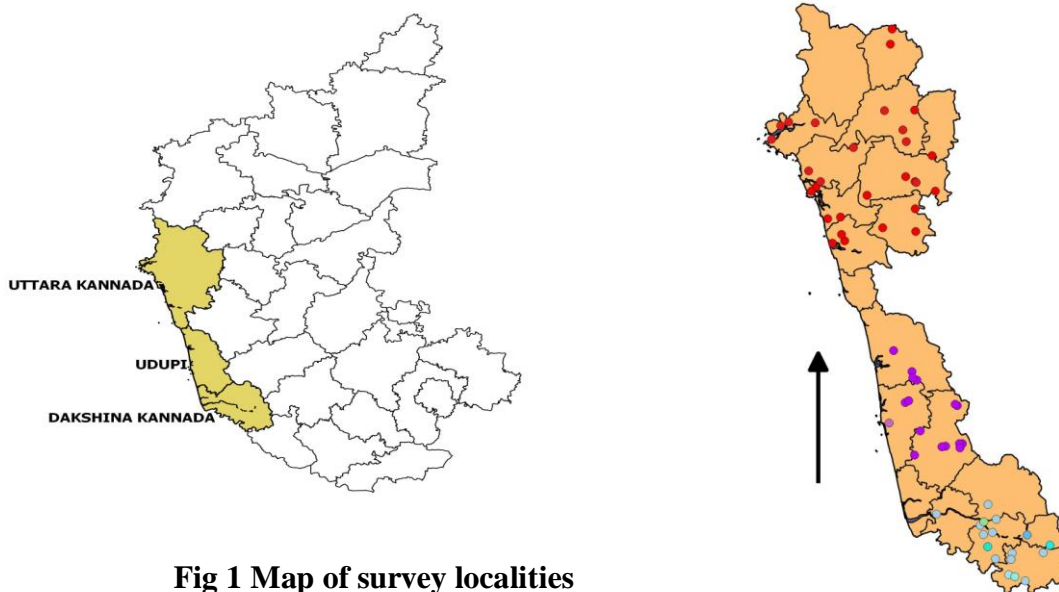


Fig 1 Map of survey localities

SYSTEMATIC LIST

- Class : Insecta
 Order : Coleoptera
 Superfamily Cucujoidea
 FAMILY Coccinellidae
 Sub family CHILOCHORINAE
 Tribe Chilochorinae
 Genus *Brumoides* Chapin, 1965
1. *Brumoides suturalis* (Fabricius, 1798)
 Subfamily COCCINELLINAE
 Tribe Coccinellini
 Genus *Anegleis* Iablokoff-Khuzorian, 1982
 2. *Anegleis cardoni* (Weise)
 Genus *Cheilomenes* Dejean, 1836
 3. *Cheilomenes sexsmaculata* (Fabricius, 1781)
 Genus *Illeis* Mulsant, 1850
 4. *Illeis cincta* (Fabricius, 1798)
 Genus *Coccinella*, 1758
 5. *Coccinella septumpunctata* Linnaeus, 1758
 6. *Coccinella transversalis* Fabricius, 1781
 Genus *Coelophora* Mulsant, 1850
 7. *Coelophora biplagiata* (Swartz)
 8. *Coelophora bissellata* Mulsant, 1850
 Genus *Harmonia* Mulsant, 1846
 9. *Harmonia octomaculata* (Fabricius, 1781)

- Genus *Micraspis* Chevrolat, in Dejan, 1836
10. *Micraspis discolor* (Fabricius, 1798)
 Genus *Propylea* Mulsant, 1846
 11. *Propylea dissecta* (Mulsant, 1850)
 Subfamily EPILACHNII
 Tribe SINGHIKALIINI
 Genus *Afidenta* Dieneske, 1947
 12. *Afidenta misera* (Weise)
 Tribe EPILACHNINI
 Tribe SCYMINI
 Genus *Cryptolaemus* Mulsant, 1853
 13. *Cryptolaemus montrousieri* Mulsant, 1853

SYSTEMATIC ACCOUNT

Class : Insecta
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 Genus *Brumoides* Chapin, 1965

1. *Brumoides suturalis* (Fabricius) 1798. *Coccinella suturalis* Fabricius : *Supplementum entomologicae systematicae*. Hafniae.

1965. *Brumoides suturalis* Chapain: The genera of the Chilocorini (Coleoptera, Coccinellidae). *Bull.us. Comp. Zool.*, 133: 227-271.

Material Examined : 01ex, Yeedhady Tal : Udipi, 23-12-2014 (Ent-1936), 06 ex, Loc : Thongoli (Vandusae) Tal : Kundarupa, 24-12-2014 (Ent-1/1950), 27 ex, Loc : Tingale Darkashl , Tal : Karkala, , 20-12-2014 (Ent-1/1954), 07ex, Belmah Tal : Karkala, 22-12-2014 (Ent-1/2047), 03ex, Loc : Kokarani Tal : Udipi, Distt : Udipi 25-12-2014 (Ent-1/2058), 01ex, Loc : Shidhigundi Mainalli Tal: Mundgod, 21-01-2016 (Ent-1/2012), 01ex, Bole Hosagadde Tal : Ankola, 26-01-2016 (Ent-1/2044),01ex, Hosur Ulware Tal : Ankola, 24-01-2016 (Ent-1/2051), 121ex, Hotegali Distt : Karwar, 27-01-2016 (Ent-1/2056), 42 ex, Gopshitta Tal : Karwar, Distt : Uttar Kannada 26-01-2016 (Ent-1/2057).

Distribution: Goa, Karnataka, Tamil Nadu, Punjab, Maharashtra, Uttar Pradesh, Manipur. *Elsewhere*: Bhutan, Nepal and Sri Lanka.

Subfamily COCCINELLINAE

Tribe Coccinellini

Genus *Anegleis* Iablokoff-Khuzorian, 1982

2. *Anegleis cardoni* (Weise, 1892)

1892. *Verania cardoni* Weise :Les Coccinellides du Chota-Nagpore. *Annales de la Société Entomologique du Belgique*, 36: 16-30.

Material Examined: 03 ex, Honnavar R. H. Tal : Honnavar Distt : Uttar Kannada , 11-10-2015 (Ent-1/1943).

1982. *Anegleis cardoni*: Iablokoff-Khuzorian: Les Coccinelles Coléoptères-Coccinellidae Tribu Coccinellini des régions Palearctique et Orientale. Boubée, Paris. 568 pp: 295.

Distribution: India. Kerala, Tamil Nadu, Madhya Pradesh, Uttar Pradesh, Karnataka, Bihar, Goa. *Elsewhere*:

Pakistan, Sri Lanka. Elsewhere: Nepal, Myanmar, Idochina, China, Korea, Japan, Taiwan, Indonesia.

Genus *Cheilomenes* Dejean, 1836

3. *Cheilomenes sexsmaculata* (Fabricius, 1781)

1781. *Coccinella sexsmaculata* Fabricius, *Species Insectorum*, 1: 522.

1943. *Menochilus sexsmaculatus* (Fab.): Timberlake, *Bull. Hawaiian Sug. Plrs. Ass. Exp. Stn. (Ent. Series)* 47(22): 40-41. *Material Examined*: 11ex, Yeedhady Tal: Udipi, 23-12-2014 (Ent-1939), 01 ex, Loc : Benagal Tal : Udipi, 25-12-2014 (Ent-1/1957), 01 ex, Loc : Khandalamala village Tal : Karkala, 21-12-2014 (Ent-1/1958) , 07 ex, Loc : Thongoli (Vandusae) Tal : Kundarupa, 24-12-2014 (Ent-1/1949), 18ex, Vill : Khandala Mala Tal : Karkala, 21-12-2014 (Ent-1/2010), 01ex, Belmah Tal : Karkala, Distt : Udipi 22-12-2014 (Ent-1/2048), 08 ex, Loc : Dusaki Tal : Hariyal, 17-10-2015 (Ent-1/1940), 04 ex, Loc : Mulekeri Tal : Kumta, 11-10-2015 (Ent-1/1941), 01 ex, Loc : Kalebhael Tal : Mundgod, 16-10-2015 (Ent-1/1945) , 03 ex, Loc : Bachanaki Tal : Mundgod, 16-10-2015 (Ent-1/1946) , 07 ex , Loc : Amchinadka Tal :Puttur, 15-09-2014 (Ent-1/1947) , 02ex, Vill : Hotegali Tal : Karwar, 21-01-2016 (Ent-1/1980), 06ex, Loc : Shidhigundi Mainalli Tal: Mundgod, 21-01-2016 (Ent-1/2014), 11ex, Arekoppa sirsi, 23-01-2016 (Ent-1/2041), 01ex, Gadalay Tal : Sirsi, 14-10-2015 (Ent-1/2043), 05ex, Bole Hosagadde Tal : Ankola, 26-01-2016 (Ent-1/2046), 08ex, Hosur Ulware Tal : Ankola Distt : Uttar Kannada, 24-01-2016 (Ent-1/2054).

Distribution: Throughout India . *Elsewhere*: Bangladesh, Pakistan, Sri Lanka, Bhutan, Myanmar, Malaysia, Indonesia, The Philippines, Vietnam, China, Japan, Oriental, Australia.

Genus *Illeis* Mulsant, 1850

4. *Illeis cincta* (Fabricius, 1798)

1798. *Coccinella cincta*. Fabricius : *Supplementum entomologicae systematicae, Hafniae*. 1932. *Illeis cincta*. Korschefsky : *Coleopterorum Catalogus. Pars 120. Coccinellidae II. Berlin*, 435pp.

Material Examined : 53ex, Loc : Shidhigundi Mainalli Tal: Mundgod, 21-01-2016 (Ent-1/2013), 02ex, Hosur Ulware Tal : Ankola 24-01-2016 (Ent-1/2049), 01ex, Loc : PWD I.B Sirsi Tal : Sirsi Distt : Uttar Kannada, 16-10-2015 (Ent-1/2063).

Distribution : India. Elsewhere: Sri Lanka, Indonesia.

Genus *Coccinella*, 1758

5. *Coccinella septumpunctata* Linnaeus, 1758

1758. *Coccinella 7-punctata* Linn., *Syst. Nat.* (ed. X) : 365

1932. *Coccinella septumpunctata*, Korschefsky, *Coleoptm. Cat.*, 16 (120) : 486.

Material Examined : 01ex, Haliyal Distt : Uttar Kannada, 17-10-2015 (Ent-1/2037).

Distribution : All over India. Elsewhere: Pakistan, Sri Lanka, Palaarctic, North America.

6. *Coccinella transversalis* Fabricius, 1781

1781. *Coccinella transversalis*. Fab. *Spec. Ins.*, 1.

Material Examined : 11ex, Yeedhady Tal : Udipi, 23-12-2014 (Ent-1937), 25ex, Loc : Thongoi(Vandusae), Tal: Kundarupa, 24-12-2014 (Ent-1/1951), 02 ex, Loc : Tingale Darkashl, Tal : Karkala, 20-12-2014 (Ent-1/1953), 07 ex, Loc : Benagal Tal : Udipi, 25-12-2014 (Ent-1/1956), 01ex, Loc : Neerae Bailur Tal : Karkal, 21-12-2014 (Ent-1/2001), 01 ex, Loc : Hilday Tal: Udipi, 23-12-2014 (Ent-1/2002), 02ex, Vill : Mala Tal : Karkala, 21-12-2014 (Ent-1/2003), 02ex, Vill : Kahndala Mala Tal :

Karkala Distt : Udipi, 21-12-2014 (Ent-1/2009), 01 ex, Loc : Mulekeri Tal: Kumta, 11-10-2015 (Ent-1/1942), 01 ex, Loc : Kalebhel Tal : Mundgod, 16-10-2015 (Ent-1/1944), 01 ex, Loc : Shantigodu Tal : Puttur, 16-09-2014 (Ent-1/1948), 02ex, Vill : Hotegali Tal : Karwar, 21-01-2016 (Ent-1/1979), 1ex, Vill : Gopistta Tal : Karwar, 21-01-2016 (Ent-1/1982), 01ex, Loc : Shidhigundi Mainalli Tal: Mundgod, 21-01-2016 (Ent-1/2011), 01ex, Arekoppa Sirsi, 23-01-2016 (Ent-1/2040), 01ex, Bole Hosagadde Tal : Ankola, 26-01-2016 (Ent-1/2045), 03ex, Hosur Ulware Tal : Ankola Distt : Uttar Kannada, 24-01-2016 (Ent-1/2053).

Distribution: India. Elsewhere: Nepal, Sri Lanka, Bangladesh, Indochina, Indonesia, Japan, Australia, New Zealand.

Genus *Coelophora* Mulsant, 1850

7. *Coelophora biplagiata* (Swartz, 1808)

1808. *Coccinella biplagiata* Swartz.: In :SCHÖNHERR, C.J., *Synonymia Insectorum*. 1 (2). Stockholm.

1989. *Coelophorabiplagiata*. Pope: A revision of the Australian Coccinellidae (Coleoptera). Part 1. Subfamily Coccinellinae. *Invertebrate Taxonomy*, 2 [1988]: 633-735.

Material Examined: 01ex, Honnavar R/H Tal : Honnavar Distt : Uttat Kannada, 11-10-2015 (Ent-1/2039).

Distribution: India. Elsewhere: Sri Lanka, Nepal, China, Taiwan, Vietnam, Philippines, Indonesia.

8. *Coelophora bissellata* Mulsant, 1850

1850. *Coelophora bissellata* Mulsant, *Spec. Trim. Securipalp.*, 2 (2): 1-1104.

Material Examined: 24ex, Bellari village Tal : Puttur Distt : Dakshin Kannnda, 13/09/2014 (Ent-1/1934), 01 ex, Haliyal Distt : Uttar Kannada, 17-10-2015 (Ent-1/2059), 03ex, Benegal Tal : Udipi Distt : Udipi, 25-12-2014 (Ent-1/2060).

Distribution: Karnataka, Tamil Nadu, Assam, Manipur, Sikkim, Uttar Pradesh, Meghalaya, Himachal Pradesh, Kerala, Bengal. **Elsewhere:** Nepal, Bangladesh, China, Thailand, Vietnam, Sumatra, The Philippines, New Guinea.

Genus *Harmonia* Mulsant, 1846

9. *Harmonia octomaculata* (Fabricius, 1781)

1781. *Cocinella octomaculata* . Fab. , *Spec. Ins.*, 1.

1850. *Harmonia octomaculata* . Mulsant, *Spec. Trim. Securipalp.*, 2 (2): 1-1104.

Material Examined : 01 ex, Loc : Kasadi Tal : Kundapura, 23-12-2014 (Ent-1/2006), 01ex, Loc : Hilday Tal : Udipi Distt : Udipi, 23-12-2014 (Ent-1/2007), 01ex, Hosur Ulware Tal : Ankola Distt : Uttar Kannada, 24-01-2016 (Ent-1/2052).

Distribution : Almost throughout India . Elsewhere : Pakistan, Nepal, Bangladesh, Sri Lanka, Widespread in the Orient, Micronesia, Australia.

Genus *Micraspis* Chevrolat, in Dejan, 1836

10. *Micraspis discolor* (Fabricius, 1798)

1798. *Coccinella discolor* . Fabricius, *entomologiae systematicae*. Hafniae.

1965 . *Micraspis discolor*. Kamiya. *Mem. Fac. Liberal Arts Fukui Univ.*, 5 *er*.

2, *Nat. Sci.* 5: 27-71.

Material Examined : 60ex, Yeedhady Tal : Udipi, 23-12-2014 (Ent-1938), 122 ex, Loc : Tingale darkash Tal: Karkala, 20-12-2014 (Ent-1/ 1955) , 17 ex, Loc : Benegal Tal: Udipi, 21-12-2014 (Ent-1/1959), 180 ex, Thongoi(Vandusae), Tal: Kundarupa, 24-12-2014 (Ent-1/1952), 22ex, Loc : Neerae Bailur Tal : Karkal, 21-12-2014 (Ent-1/2000), 15ex, Loc : Thongogi (Vandusae) Tal : Kundapura, 24-12-2014 (Ent-1/2004), 01ex, Nr. Bhuvnendra College Rd Tal : Karkal, 21-12-2014 (Ent-2005), 22ex, Khandala Mala Village Tal: Karkala

Distt : Udipi, 21-12-2014 (Ent-1/2008), 70ex, Vill : Hotegali Tal : Karwar, 21-01-2016 (Ent-1/1978), 130ex, Vill : Gopistta Tal : Karwar, 21-01-2016 (Ent-1/1981), 01ex, Haliyal Distt : Uttar Kannada, 17-10-2015 (Ent-1/2062).

Distribution: Distribution: India. **Elsewhere:** Bangladesh. Sri Lanka. Pakistan. Almost throughout the Orient. Palearctic.

Genus *Propylea* Mulsant , 1846

11. *Propylea dissecta* (Mulsant, 1850)

1850. *Lemnia (Vola) dissecta* . Mulsant, *Spec. Trim. Securipalp.*, 2 (2): 1-1104.

1874. *Propylaea dissecta*. Crotch, A revision of the Coleopterous Family Coccinellidae, E.W. Janson, London.

Material Examined : 01ex, Tingale Darkash Tal : Karkala, 20-12-2014 (Ent-1/2035), 05 ex, Thongogi (Vondusae) Tal : Kundapura Distt : Udipi, 24-12-2014 (Ent-1/2036), 01ex, Arekoppa sirsi, 23-01-2016 (Ent-1/2042), 01ex, Hosur Ulware Tal : Ankola, 24-01-2016 (Ent-1/2050), 01ex, Hotegali Distt : Karwar, 27-01-2016 (Ent-1/2055), 01 ex, Haliyal Distt : Uttar Kannada, 17-10-2015 (Ent-1/2061).

Distribution : Assam, Tamil Nadu, Karnataka, Uttar Pradesh. Elsewhere : Bangladesh, Nepal.

Subfamily EPILACHNII

Tribe SINGHIKALIINI

Genus *Affidenta* Dienske, 1947

12. *Afidenta misera* (Weise, 1901)

1901. *Epilachnamisera* Weise: Contribution a l'etude de la fauneentomologique de Sumatra (Chasses de M.J.- L.Weyers) xvarticle. Coccinellides. Annales de la SociétéEntomologique du Belgique, 45: 91-96.

1947. *Afidentamimetica simplex* Dieke: Lady beetles of the genus *Epilachna* (sens.lat.) in Asia, Europe, and Australia.

Smithsonian Miscellaneous Collections,
Washington, 106 (15): 1-183.

Material Examined: 02ex, Mulekeri Tal:
Kumta Distt: Uttat Kannada, 11-10-2015
(Ent-1/2038).

*Distribution:*India. *Elsewhere:* Sri Lanka,
Nepal, China, Taiwan, Vietnam,
Philippines, Indonesia.

Tribe SCYMINI

13. *Cryptolaemus montrousieri* Mulsant, 1853

1853. *Cryptolaemus montrousieri*.
Mulsant, Supplément à la monographie
des coléoptères trimères sécuripalpes.
Ann. de la Soc. Linn. de Lyon (N.S.), 1:
129-333.

Material Examined: 04ex, Vill:
Nekkiladey Tal: Puttur Distt: Dakshin
Kannada, 13-09-2014 (Ent-1/1935).

Distribution: Native of Indo-Australian
region. Introduced into India and other
countries like USA and UK.

Summary:

The present paper deals with nearly 1100
examples of 13 species of 11 Genera of
Coccinellidae from Western Ghats region
of three districts of Karnataka viz. Uttar
Kannada, Udipi and Dakshin Kannada.

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References:

Kapur, A. P. (1949) On the Indian
species of *Rodolia* Mulsant (Coleoptera:
Coccinellidae). Bulletin of
Entomological Research, 39, 531-538.
Kapur, A. P. (1956) A new species of
Coccinellidae (Coleoptera) predacious on
the citrus whitefly in India. Rec. Ind.
Mus., 52 (1954), 189-193.
Chakraborty, S. K. and Biswas, S. (2003)
Insecta: Coleoptera: Coccinellidae . In:
Fauna of Sikkim, State Fauna Series 9

(3), 117-152, Published by Zool. Surv.
India.

Chakraborty, S. K and Biswas, S. (2003)
Insecta Coleoptera Coccinellidae, Zool.
Surv. India. State Fauna Series 9, Fauna
of Sikkim (Part-3) 117-152, (Published
by the Director, Zool. Surv. India,
Kolkata)

Poorani, J. (2001) A review of the genus
Pseudaspidimerus Kapur (Coleoptera:
Coccinellidae) of the Indian region, with
description of a new species. *Oriental
Insects*, 35, 299-310.

Poorani, J. (2002) An annotated checklist
of the Coccinellidae (Coleoptera)
(excluding Epilachninae) of the Indian
subregion. *Oriental Insects* 36, 307-383.

Poorani, J., Natalia, J., Vandenberg, G.
and Booth, R. G. (2011) A revision of the
genus *Stictobua* Crotch and description
of a new species of Sticholotis Crotch
(Coleoptera: Coccinellidae:
Sticholotidinae) . *Zootaxa*. 3031- 1-13.

Singh, K. C. and Singh, T. K. (1991)
Aphidophagous coccinellids of
Northeastern India: Mizoram II. *J. Adv.
Zool.* 12 (2), 131-134.

Sankaran, T. (1974) Natural enemies
introduced in recent years for biological
control of agricultural pests in India.
Indian J. Agr. Sci. 44 (7), 425-433.

Karuna, K., Shadashakshari, Y.G.,
Jagdish, K. S. and Geetha, K. N. (2013)
Severity of powdery mildew infection
and population of *Illeis cincta* F. on
Sunflower. *Insect Environment*, 19(3),
207-210.

Siplinski, A. (2007) Australian
Ladybird Beetles (Coleoptera :
Coccinellidae). Their Biology and
Classification. CSIRO, Australia.

Allen, J. And Humphries, T. 2000. Are
you a lady bug *Kingfisher* : 30.

Chakraborty, S.K. 2010. Insecta:
Coleoptera: Coccinellidae. In: Fauna of
Uttarakhand, State Fauna Series 18 (2),
283-301., Published by Zool. Surv. India.

Dieke, G. H. (1947) Ladybeetles of Epilachna (s.lat) in Asia, Europe and Australia. Smithson. Misc. Coll. 106 (15): 1-183 , pls. 1-27 . (II)

Jadhav, S. S. and Sharma, R. M. 2012. Insecta: Coleoptra: Coccinellidae. *Fauna of Maharashtra State. State Fauna Series. 2*, Published by Zool. Surv. India.

Sasaji, H. (1968) Coccinellidae collected in the paddy fields of the Orient, with descriptions of new Species (Coleoptera) . *Mushi*. 42, 119-132.

Singh, K. C. and Singh, T. K. (1991) Aphidophagous coccinellids of northeastern India: Mizoram II. *J. Adv. Zool.* 12, 131-134.