

## A preliminary checklist of moths from Akrani tahsil, dist.-Nandurbar, M. S., India

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### Abstract

Nandurbar district located at the northwest side (Khandeshi Region) of Maharashtra state in India. Nandurbar is a tribal district. Akrani (Dhadgaon) is village and tahsil place in Nandurbar dist. Maharashtra, India. Moths are an integral part of most of the ecosystem. They are also monitored to indicate climatic changes and environmental degradation. They were collected and studied from Nandurbar district of Maharashtra from June 2019 to January 2022. This taxonomic study results in the collection and identification of 89 species of 77 genus, 14 families. Of these, Bombycid (01 genus, species 01), Crambidae (17 genus, species 17), Erebididae (genus 21, species 23), Eupterotidae (genus 01, species 02), Euteliidae (genus 02, species 02), Geometridae (genus 08, species 11), Hyblaeidae (genus 01, species 01), Limacodidae (genus 02, species 02), Noctuid (genus 10, species 12), Notodonidae (genus 03, species 04), Nolidae (genus 01, species 01), Saturniidae (genus 02, species 02), Sphingidae (genus 07, species 10), Uraniidae (01 genus, 01 species). Hence, all the presence preliminary study is a small step towards a complete taxonomic study of moths from Akrani tahsil (Nandurbar district) Maharashtra (India).

**Keywords:** moths, heterocera, species, taxonomic, north Maharashtra, Nandurbar, Akrani

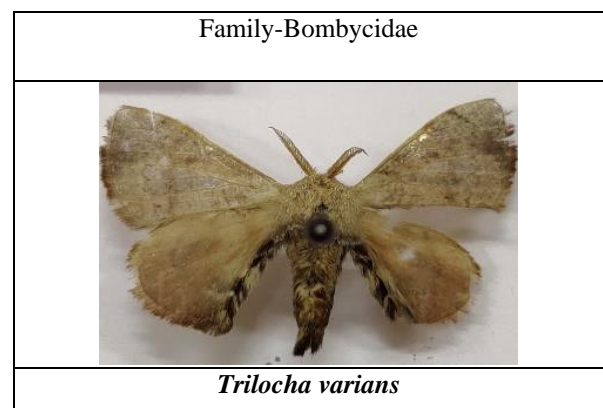
### Introduction








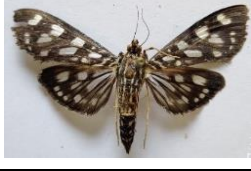




Dhadgaon is a municipal council and also tahsil place in Nandurbar District Maharashtra, India. Dhadgaon tehsil is Northern most part of Maharashtra state. Dhadgaon town was known as Akrani. The name of town took from the name of a local queen "Akka Rani" & also known as Akrani or Akrani mahal. The area actually covered by great numbers of large and medium villages & towns like Borwan, Vadfalya and Roshmal etc. This region under the study is Latitude 21.822 N & Longitude is 74.217 E. It is located in northwest corner (Khandesh region) Nandurbar District is bounded by Dhule district from south & South-east, by Gujarat from the west & north, by Madhya Pradesh state from the north-east side and by Taloda & Shahada tehsil from south & by Akkalkuwa tehsil from west. Generally Nandurbar district climate is hot and dry. In Akrani (Dhadgaon) region Toranmal is a famous hills station, situated Satpura hill ranges. So it is small part of Deccan plateau & has a shape like soucer from which a stream flows across the plateau from South to North. Generally moths depend on Night-blooming flowers for pollination & artificially lights can attraction of moths from away the flowers, so moving the plant ability to reproduce. Taxonomic study on moths is essential to have a single internationally agreed name for each moth. The presence study an attempt has been made to study document the preliminary collection data, larval host plants and their distribution. The moths species reported from Akrani tahsil & information data collected from literature. so over all presence study is a small step towards complete taxonomic understanding of moths from Akrani tehsil Nandurbar district, Maharashtra (India).




### Material and methods

















The present study was preliminary checklist of moths from Akrani tehsil, Nandurbar District, Maharashtra. The survey was started from June 2019 to January 2022 from five

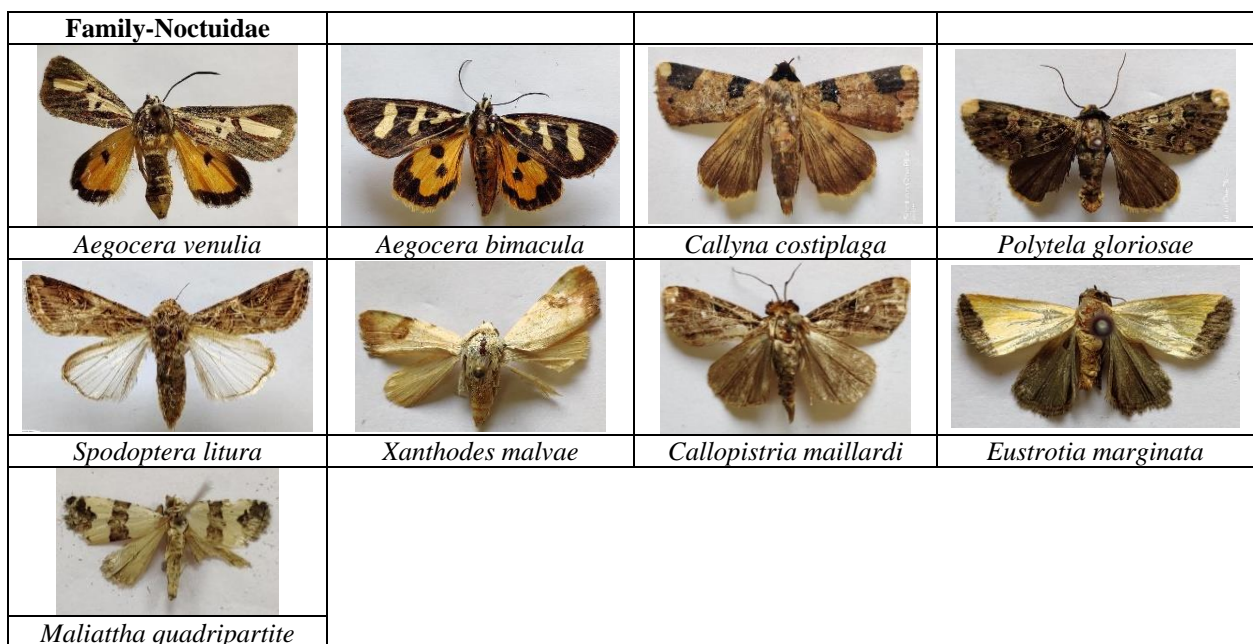
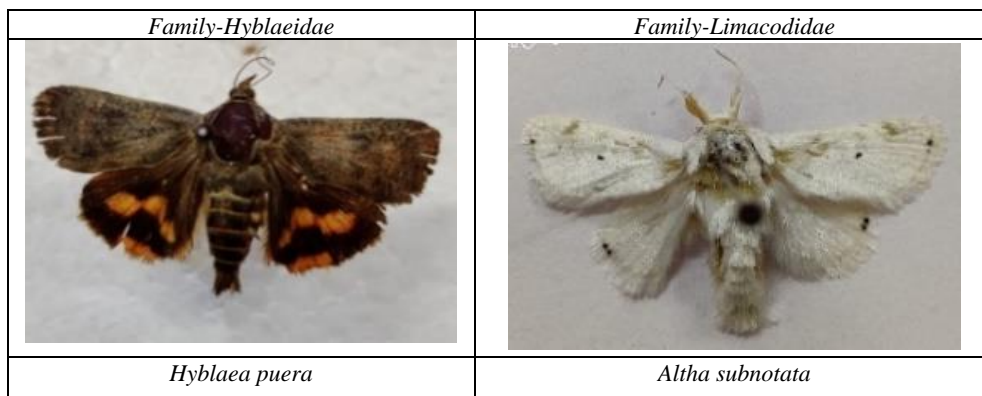
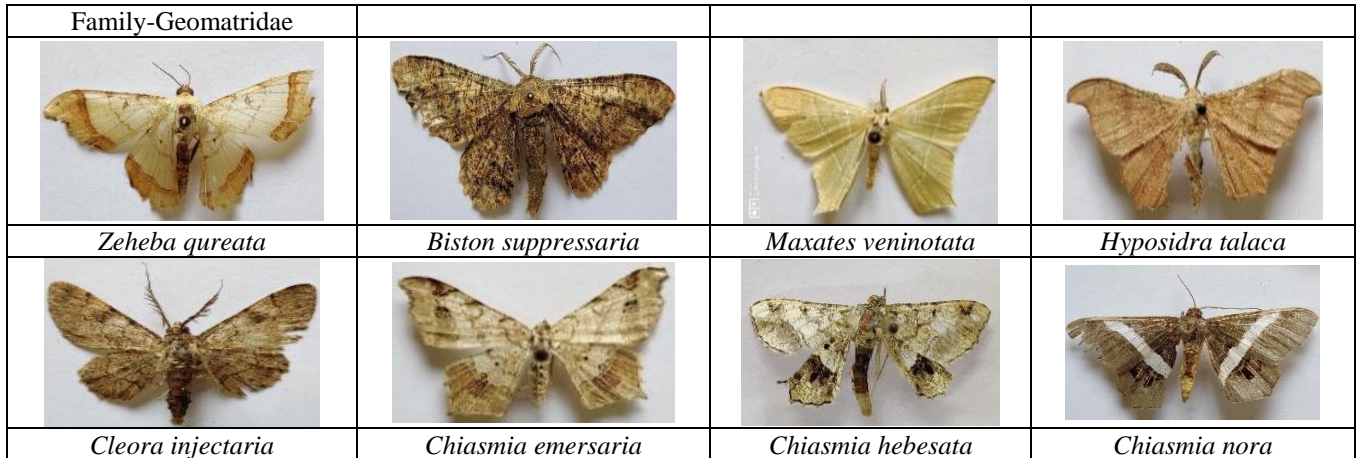
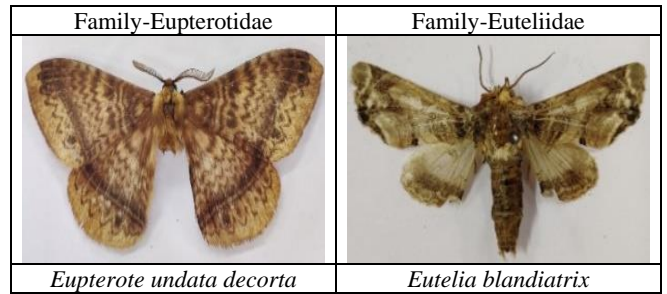
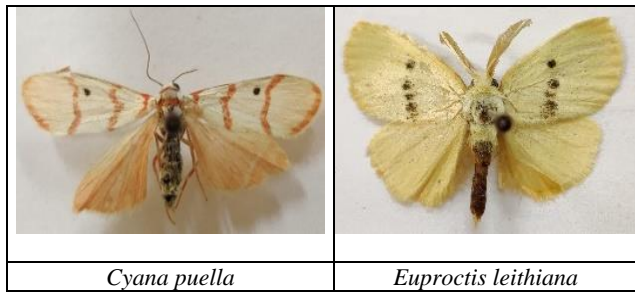
regions of the Akrani (Dhadgaon) i.e., Roshmal Bk., Umrani Kh., Telkhadi, Nigadi, Toranmal. The moths were collected by using light traps. Light trap was made by using 160W mercury vapour bulb. It was hung in front of 5'x 6' white cotton sheet tied between two trees at the said locations. The collected moths were euthanized with ethyl acetate vapours and brought to the laboratory for further studies. Then they were processed as per the standard techniques in lepidopterology. Then, it was relaxed, setting a specimen and labelling of moth's specimens. Then, it was pinned, and preserved dry in the laboratory. To identify the specimen, Leica EZ4E stereozoom microscope was used with photographic facility. The moths were identification and classification with the help of available literature i.e. (Chembakassery J.A *et al.*, 2021; Shubha Laxmi *et al.*, 2011; Bell and Scott, 1937; Sambath, 2011; Gurule and Nikam, 2013; Mitra *et al.*, 2019) [13, 1, 2]. Afterwards the specimens were duly registered and deposited in the National Zoological Collection, Zoological Survey of India, Western Regional Centre, Pune, Maharashtra, India (ZSI-WRC).






Family-Crambidae			
			
<i>Omiodes diemenalis</i>	<i>Maruca vitrata</i>	<i>Diaphania indica</i>	<i>Eoophyla peribocalis</i>
			
<i>Terastia egialealis</i>	<i>Cydalima laticostalis</i>	<i>Pagyda salvalis</i>	<i>Pygospila tyres</i>
			
<i>Agathodes ostentalis</i>	<i>Cirrochrota brizoalis</i>	<i>Sameodes cancellalis</i>	<i>Spoladea recurvalis</i>











		
<i>Orphanostigama abruptalis</i>	<i>Rehimena phrynealis</i>	<i>Eurrhyarodes tricoloralis</i>


Family-Erebidae			
			
<i>Rajendra perotteti</i>	<i>Rajendra biguttata</i>	<i>Creatonotos gangis</i>	<i>Macrobrochis splendens</i>
			
<i>Eudocima materna</i>	<i>Nygmia icillia</i>	<i>Hypocala deflorata</i>	<i>Episparis liturata</i>
			
<i>Grammodes stolidia</i>	<i>Mocis undata</i>	<i>Anticarsia irrorata</i>	<i>Culasta indecisa</i>
			
<i>Syntomoides imaon</i>	<i>Digama marchalli nebulosa</i>	<i>Orvasca subnotota</i>	<i>Brunia antica</i>



Family-Notodontidae		Family-Nolidae
		
<i>Bireta longivitta</i>	<i>Antheua exanthemata</i>	<i>Earias vittella</i>

Family-Saturniidae	
	
<i>Antheraea mylitta</i>	<i>Actias selene</i>

Family-Sphingidae			
			
<i>Psilogramma increta</i>	<i>Marumba dyrus</i>	<i>Marumba spectabilis</i>	<i>Marumba indicus</i>
			
<i>Agrius convolvuli</i>	<i>Hippotion celerio</i>	<i>Thereta silhetensis</i>	<i>Nephele hespera</i>
			
<i>Agnosia microta</i>	<i>Agnosia orneus</i>		

Family-Uraniidae

<i>Micronia aculeate</i>

**Results and discussion**

In the study the collection of moth specimens was done from Akrani Tehsil (Nandurbar district) of Maharashtra. The list of moths presented here is preliminary step. A more detailed study is required to study the entire biodiversity present in this area. The present study is based on the recent field study carry out from Akrani tehsil &

review of literature, so in this region, the study reported in records of 89 species of 77 genus, 14 families; of these, Bombycidae (01 genus, species 01), Crambidae (17 genus, species 17), Erebiidae (genus 21, species 23), Eupterotidae (genus 01, species 02), Euteliidae (genus 02, species 02), Geometridae (genus 08, species 11), Hyblaeidae (genus 01, species 01), Limacodidae (genus 02, species 02), Noctuidae (genus 10, species 12), Notodontidae (genus 03, species 04), Nolidae (genus 01, species 01), Saturniidae (genus 02, species 02), Sphingidae (genus 07, species 10), Uraniidae (01 genus, 01 species). Among the moths collected, Erebiidae is most collected family followed by Crambidae family, Noctuidae, Geometridae, Sphingidae, Notodontidae, Euteliidae, Saturniidae, Limacodidae, Eupterotidae, Bombycidae, Hyblaeidae, Nolidae and Uraniidae. Moths are very important for pollination and they are also important as

environmentally, economically to us. A complete fauna of this district with proper scientific documentation. Taxonomic survey will be carried out to record the moth

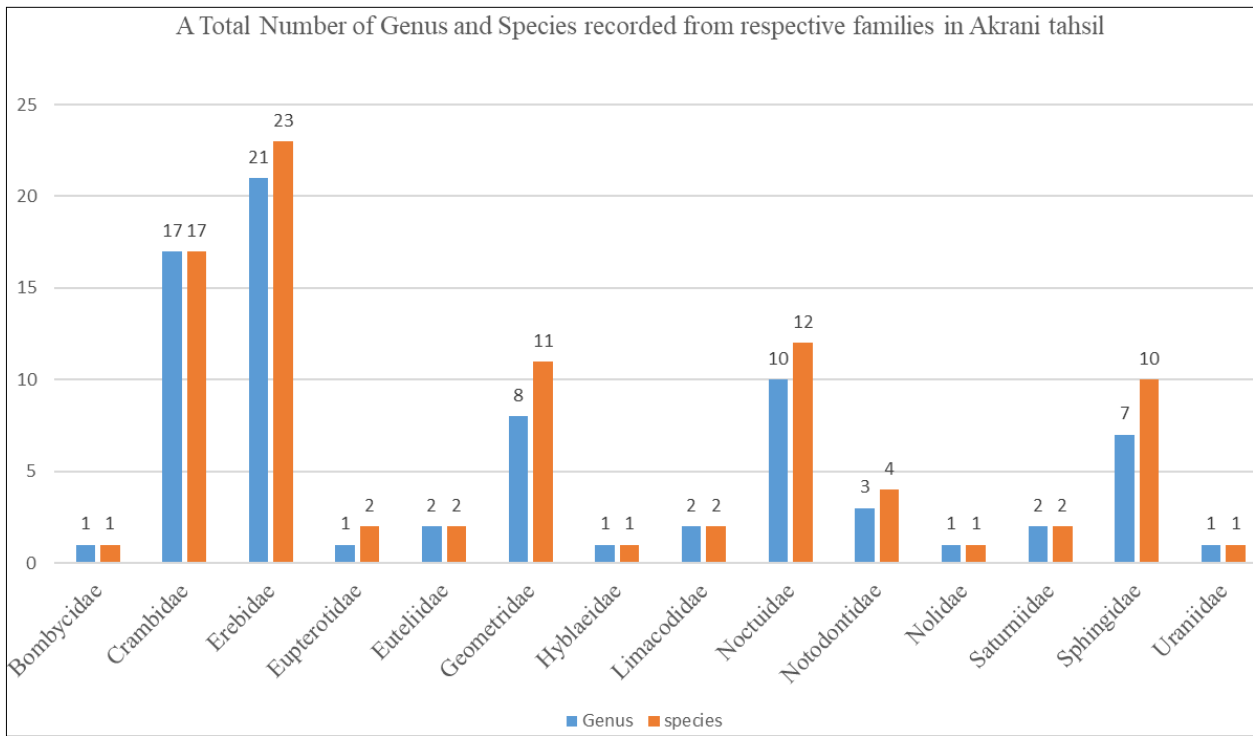


Fig 1: A Total Number of Genus and Species recorded from respective families in Akrani tahsil.

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Table 1: Diversity of Moths List from Akrani tahsil:

Sr.no	Family	Subfamily	Name of the Genus & species
1.	Bombycidae	Bombycinae	1) <i>Trilocha varians</i> (Walker,1855)
2.	Crambidae	Spilomelinae	2) <i>Pygospila tyres</i> (Cramer,1780)
		Spilomelinae	3) <i>Omiodes diemenalis</i> (Guenee,1854)
		Spilomelinae	4) <i>Terastia egialealis</i> (Walker,1859)
		Spilomelinae	5) <i>Maruca vitrata</i> (Fabricius,1787)
		Spilomelinae	6) <i>Diaphania indica</i> (Saunders,1851)
		Acentropinae	7) <i>Eoophyla peribocalis</i> Walker,1859
		Spilomelinae	8) <i>Agathodes ostentalis</i> (Geyer,1837)
		Spilomelinae	9) <i>Pagyda salvalis</i> Walker,1859
		Spilomelinae	10) <i>Rehimena phrynealis</i> (Walker,1859)
		Spilomelinae	11) <i>Orphanostigama abruptalis</i> (Walker,1859)
		Spilomelinae	12) <i>Glyphodes bicolor</i> (Swainson,1821)
		Spilomelinae	13) <i>Spoladea recurvalis</i> (Fabricius,1775)
		Spilomelinae	14) <i>Sameodes cancellalis</i> (Zeller,1852)
		Spilomelinae	15) <i>Cydalima laticostalis</i> (Guenee,1854)
		Spilomelinae	16) <i>Cirrhochrista brizoalis</i> (Walker,1859)
		Spilomelinae	17) <i>Eurrhyarodes tricoloralis</i> (Zeller,1852)
		Spilomelinae	18) <i>Botyodes asialis</i> Guenee, 1854
3.	Erebidae	Arctiinae	19) <i>Rajendra perotteti</i> (Guerin-Meneville,1844)
		Arctiinae	20) <i>Rajendra biguttata</i> (Walker,1855)
		Arctiinae	21) <i>Cretonotos gangis</i> (Linnaeus,1763)
		Calpinae	22) <i>Eudocima materna</i> (Linnaeus,1767)
		Arctiinae	23) <i>Syntomoides imaoon</i> (Cramer,1779)
		Arctiinae	24) <i>Olepa suryanal rekhhae</i> Kalawate,2020
		Pangraptinae	25) <i>Episparis liturata</i> Fabricius,1787
		Erebinae	26) <i>Mocis undata</i> (Fabricius,1775)
		Erebinae	27) <i>Grammodes stolidia</i> (Fabricius,1775)
		Lymantriinae	28) <i>Orvasca subnotota</i> Walker,1865
		Erebinae	29) <i>Hypocala deflorata</i> (Fabricius,1794)
		Lymantriinae	30) <i>Nygmia icillia</i> (Stoll, [1790])
		Arctiinae	31) <i>Macrobrochis splendens</i> (Butler,1877)

		Erebinae	32) <i>Achaea janata</i> (Linnaeus,1758)
		Eulepidotinae	33) <i>Anticarsia irrorata</i> (Fabricius,1781)
		Aganainae	34) <i>Psimada quadripennis</i> Walker,1858
		Calpinae	35) <i>Culasta indecisa</i> Moore,1881
		Arctiinae	36) <i>Brunia antica</i> (Walker,1854)
		Aganainae	37) <i>Digama marchalli nebulosa</i> Walker,1864
		Aganainae	38) <i>Digama hearseyana similis</i> Moore,1878
		Arctiinae	39) <i>Nepita conferta</i> (Walker,1854)
		Arctiinae	40) <i>Cyana puella</i> (Drury, 1773)
		Lymantriinae	41) <i>Euproctis leithiana</i> (Moore,1879)
4.	Eupterotidae	Eupterotinae	42) <i>Eupterote undata decorta</i> (Moore,1884)
			43) <i>Eupterote fabia</i> Cramer,1780
5.	Euteliidae	Stictopterinae	44) <i>Lophoptera squammigera</i> Guenee,1852
		Euteliinae	45) <i>Eutelia blandiatrrix</i> Guenee,1852
6.	Geometridae	Ennominae	46) <i>Zeheba aureate</i> Moore, [1887]
		Ennominae	47) <i>Biston suppressaria</i> (Guenee,1857)
		Ennominae	48) <i>Chiasmia nora</i> (Walker,1861)
		Ennominae	49) <i>Chiasmia eleonora</i> (Cramer,1780)
		Ennominae	50) <i>Chiasmia emersaria</i> (Walker,1861)
		Ennominae	51) <i>Chiasmia hebesata</i> Walker,1861
		Ennominae	52) <i>Hyposidra talaca</i> (Walker,1860)
		Geometrinae	53) <i>Pingaso chlora</i> Stoll,1782
		Geometrinae	54) <i>Maxates veninotata</i> (Warren,1894)
		Ennominae	55) <i>Cleora injectaria</i> Walker,1860
		Ennominae	56) <i>Petelia medardaria</i> Herrich-Schaffer, [1855]
7.	Hyblaeidae		57) <i>Hyblaea puera</i> (Cramer, 1777)
8.	Limacodidae	Limacodinae	58) <i>Miresa bracteata</i> Butler,1880
			59) <i>Altha subnotata</i> Walker,1865
9.	Noctuidae	Agaristinae	60) <i>Aegocera venulia</i> (Cramer,1777)
		Agaristinae	61) <i>Aegocera bimacula</i> (Walker,1854)
		Amphipyriinae	62) <i>Callyna costiplaga</i> Moore,1885
		Amphipyriinae	63) <i>Callyna siderea</i> (Guenee,1852)
		Noctuinae	64) <i>Polytela gloriosa</i> (Fabricius,1781)
		Plusiinae	65) <i>Chrysodeixis acuta</i> (Walker,1858)
		Heliothinae	66) <i>Heliothis peltigera</i> (Denis & Schiffermuller,1775)
		Noctuinae	67) <i>Spodoptera litura</i> (Fabricius,1775)
			68) <i>Xanthodes malvae</i> Esper,1796
		Eustrotiinae	69) <i>Eustrotia marginata</i> Walker,1866
		Eustrotiinae	70) <i>Maliattha quadripartite</i> Walker,1865
		Eriopinae	71) <i>Callopietria maillardi</i> (Guenee,1862)
10.	Notodontidae	Ceirinae	72) <i>Bireta longivitta</i> (Walker,1856)
		Phalerinae	73) <i>Antheua exanthemata</i> Moore 1883
		Phalerinae	74) <i>Phalera combusta</i> Walker,1855
			75) <i>Phalera grotei</i> Moore,1859
11.	Nolidae	Eariadinae	76) <i>Earias vittella</i> (Fabricius,1794)
12.	Saturniidae	Saturniinae	77) <i>Actias selene</i> (Hubner,1806)
		Saturniinae	78) <i>Antheraea mylitta</i> (Drury,1773)
13.	Sphingidae	Macroglossinae	79) <i>Nephele hespera</i> (Fabricius,1775)
		Smerinthinae	80) <i>Marumba dyrus</i> (Walker,1856)
		Smerinthinae	81) <i>Marumba indicus</i> (Walker,1856)
		Smerinthinae	82) <i>Marumba spectabilis</i> Butler,1875
		Sphinginae	83) <i>Psilogamma increta</i> (Walker, [1865])
		Sphinginae	84) <i>Agrius convolvuli</i> (Linnaeus,1758)
		Smerinthinae	85) <i>Agnosia orneus</i> (Westwood,1847)
		Smerinthinae	86) <i>Agnosia microta</i> (Hampson,1907)
		Macroglossinae	87) <i>Theretra silhetensis</i> (Walker,1856)
		Macroglossinae	88) <i>Hippotio celerio</i> (Linnaeus,1758)
14.	Uraniidae	Microniinae	89) <i>Micronia aculeata</i> Guenee,1857

## Summary

The current taxonomic study reported in the collection and identification of 89 species of 77 genus, 14 families of moths. This is the first time reported from Akrani tehsil (Dhadgaon) Maharashtra (India). so over all the presence preliminary study is a small step towards a complete taxonomic understanding of moths from Akrani tahsil (Dhadgaon). In upcoming, complete exhaustive survey

covering the whole district would be taken up to properly documentation the moth diversity of the studied region.

## References

1. Bell TRD, Scott FB. Fauna of British India: Moths-5. Dr. W. Junk B.V. Publishers, The Hague, 1937, 533.
2. Gurule S, Nikam S. The moths (Lepidoptera: Heterocera) of Northern Maharashtra: a preliminary

- checklist. *Journal of Threatened Taxa*, 2013:5(12):4693-4713.
3. Hampson GF. The Fauna of British India including Ceylon and Burma, Moths – volume 1. Taylor and Francis, London, 2013, 527.
  4. Hampson, G.F. 1894. The Fauna of British India including Ceylon and Burma, Moths- volume 2. Taylor and Francis, London, 609pp.
  5. Hampson GF. The fauna of British India including Ceylon and Burma, Moths - volume 3. Taylor and Francis, London, 1895, 546.
  6. Hampson GF. The fauna of British India including Ceylon and Burma, Moths - volume 4. Taylor and Francis, London, 1896, 595.
  7. Kalawate AS. On a collection of Moths (Lepidoptera: Heterocera) from the northern Western Ghats of Maharashtra, India. *Zoology and Ecology*, 1896:28(3):231-251.
  8. Muhammad Aslam. Diversity, Species Richness and Evenness of Moth Fauna of Peshawar, Pak. *Entomol. Department of Zoology, Islamia College University Peshawar, NWFP, Pakistan*, 2009:31(2).
  9. Pawara SN *et al.* A Preliminary checklist of moths from Nandurbar, Maharashtra, India, *Journal of The Maharaja Sayajirao University of Baroda Journal*, ISSN: 0025-0422(UGC CARE Group I Journal), 2021, 55(1).
  10. Pawara SN *et al.* Diversity of hawkmoths (Lepidoptera: Sphingidae) of Nandurbar, Maharashtra, India, *Insect Environment Quarterly Journal*, 2021, 24(2)
  11. Srivastava A. Taxonomy of moths in India. Published by International Book Distributors, Deheradun, India, 2002, 1-334 .
  12. Shubhalaxmi V, Chaturvedi N. Abundance and distribution of moths of the families Saturniidae and Sphingidae in Sanjay Gandhi National Park. *Journal of the Bombay Natural History Society*, 1999:96(3):379-386.
  13. Chembakassery JA *et al.* A Report on the Moth (Lepidoptera: Heterocera) Diversity of Kavvai River Basin in Kerala, India, *Journal of Threatened Taxa (JoTT)*, 2021, 13(2).