

# An Invasion of *Achatina fulica* Bowdich in Chandrapur District (Vidarbha Region), Maharashtra (India).

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## ABSTRACT

The present paper first report of occurrence of *Achatina fulica* from Chandrapur District and after 35 years it is rediscovered from Vidarbha region as previously only reported from Nagpur district of Vidarbha region, Maharashtra State. *Achatina fulica* infested with plant species like *Dalbergia sissoo* DC., *Pongamia pinnata* (L.) Pierre, *Leucaena leucocephala* (Lam.) de Wit., *Ficus benghalensis* L., *Punica granatum* L., *Tinospora cordifolia* Willd. Miers, *Ziziphus jujuba* Mill., *Carrica papaya* L. and *Azadirachta indica* A. Juss. The invasion of *Achatina fulica* in Chandrapur is a major problem, mainly in urban areas but also increasingly in important natural areas.

**Keywords:** *Achatina fulica*, invasion, new records, Chandrapur, Vidarbha

## INTRODUCTION

*Achatina fulica* (Stylommatophora: Achatinidae) Giant African Land Snail, listed by the IUCN (International Union for Conservation of Nature and Natural resources) as one of the world's 100 most invasive species. *Achatina fulica* is the second worst invasive species terrestrial land snail native to East Africa invaded most part of world with most impact in subtropical and tropical regions[7].

*Achatina fulica* is known to consume more than 500 different plant species causing serious pest to home gardens, horticulture and small-scale agriculture crops [3,10,12] *Achatina fulica* introduced in Chouringhie

gardens of Calcutta, India in 1847 by British Conchologist William Henry Benson from Mauritius and from there in course of time it gets spread to many states of India [8].

*Achatina fulica* succeeded as an invasive alien species all over the world through several factors viz. polyphagous diet, voracious feeding, inadequate quarantine arrangement, high reproduction rate and its dispersal by humans with agricultural, horticultural, commercial products, animal food resource and as a pet, and for medicinal and ornamental purposes and accidental transport with military equipment. It is reported as an invasive alien from every continent of earth except Antarctica. [4,9,12,15].

## METHODOLOGY

### Study Area

The Chandrapur district is located between 19.30' N to 20.45'N Latitude and 78.46'E longitude, along the eastern edge of Maharashtra in 'Vidharbha' region. It borders with Marathwada region of Maharashtra in the West, Chhattisgarh in the East, Andhra Pradesh in the South and Madhya Pradesh in the North. Physiographically, Chandrapur district is situated within the river Wainganga and Wardha river basins, which are the tributaries of Godawari River [11].

### Methodology

Survey of invasive alien organism conducted in order to document invasive plant and animals from 2016-2019 in Chandrapur district, second author came across the serious infection of Giant Land Snail observed in two location in fully crowded city area. Scrutiny of pertinent literature regarding Giant Land Snail identified as *Achatina fulica* Bowdich (Stylommatophora: Achatinidae) [17-18]. In India, it is reported from Assam, Bihar, Manipur, Meghalaya, Nagaland, Orissa, Tripura and West Bengal (*Eastern India*); Karnataka, Kerala, Tamil Nadu (*Southern India*); Maharashtra (*Western India*); Andaman and Car Nicobar Islands (Bay Islands), but reported from Central India [13].

In Maharashtra *Achatina fulica* has been reported from Nagpur, Panchgani, Pune [13], Aurangabad [1]

Kolhapur [5]. Therefore, the present occurrence from Chandrapur District is presented here. Matured Giant Land Snail specimen collected from the location and preserved in formalin for the further study deposited in Department of Zoology, Janata Mahavidyalaya, Chandrapur.

## RESULTS AND DISCUSSION

Giant Land Snail collected from city area (N.19° 57.940' and E.079° 17.010') with high human density, photographs given below along the infested plant species from the locality, its Systematic position, Diagnostic characters, other scientific name, English name, common name, of the organism cited in the text. Present report of *Achatina fulica* Bowdich, is new distributional records from the Chandrapur district and after 35 years it is rediscovered from Vidarbha region. **(Photoplate No.1)**

### Systematic position [17]

Phylum- Mollusca

Oass -Gastropoda

Order- Stylommatophora

Family- Achatinidae

Genus-*Achatina*

Species- *fulica* Bowdich.

**Other Scientific Names** -*Lissachatina fulica* Bowdich

**English Name**- African Giant Snail, Kalutara Snail.

**Common Name** -Giant African Land Snail

**Diagnostic characters of *Achatina (Lissachatina) fulica fulica* Bowdich**

Giant Land Snail can be identified with pale yellowish colour ovate-conoid shell with brown transverse streaks. These streaks are irregularly decussated with fine spirals all over except on the last whorl. Light convex whorls present on shell and the last one nearly equals to half the entire length of the shell. Elliptic ovate aperture present on shell. Peristome is straight and margins connected by a callus or the parietal wall. Collumella is slightly concave and truncate [17-18].

In present survey it is noted that *Achatina fulica* infested with plant species like *Dalbergia sissoo* DC., *Pongamia pinnata* (L.) Pierre, *Leucaena leucocephala* (Lam.) de Wit,

*Ficus benghalensis* L., *Punica granatum* L., *Tinospora cordifolia* Willd.Miers, *Ziziphus jujuba* Mill. , *Carrica papaya* L. and *Azadirachta indica* A. Juss. It is also observed on the wall compounds and on the wall of houses , and in addition to impacting walls, nuisance in walking paths.(Photoplate No.2)

*Achatina fulica* observed that it is generally active in night showing the nocturnal habit and mostly resting on the tree trunk at day time on rainy and cloudy days . In sunny and hot days it seek on shaded and high humid places for shelter.

As one of the major threats to global biodiversity loss along with forestry, agriculture, livelihood, human and animal health is invasive alien species as they affect both environment and ecology in great extent[16]. Identifying the probable future distribution of invasive alien species is of great use for

the early detection, prioritization of regions for conservation of invasive species[2,6].

There is a need to create awareness among public and farmers to control invasion of such invasive Giant Land Snail , sanitation of area by cleaning the hiding places such as debris and bushes from fields to check[14].

*Achatina fulica* has not been considered a potentially serious large-scale agricultural pest; it is a concern in small-scale agriculture. It is also a public health concern as well as being a major public nuisance. Local control remains possible, although it will cause great financial and labor costs. The invasion of *Achatina fulica* in Chandrapur is a major problem, mainly in urban areas but also increasingly in important natural areas.



Photoplate 1 : *Achatina fulica* .A. Dorsal View,B. Ventral View. C.Resting on stem of *Leucaena leucocephala*





Photoplate 2 : *Achatina fulica* A. Resting on Ground in shade ,B. on *Ficus glomerata* C.Population of snail on *Ficus* Stem ,D. on *Dalbergia* plant stem

## CONCLUSION

The present communication is a first report of *Achatina fulica* from Chandrapur District and after 35 years it is rediscovered from Vidarbha region ,previously noted in 1984 from Nagpur. There is urgent need to control an invasion of this species in other parts and agricultural fields.

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