



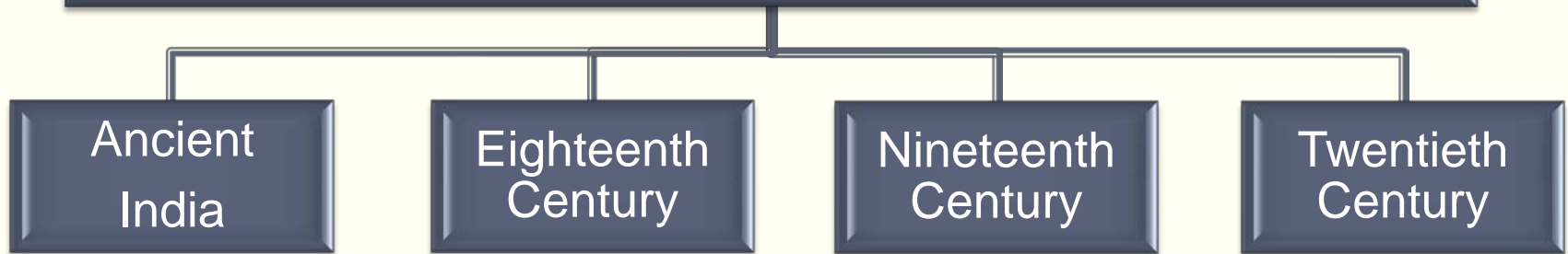
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# HISTORY OF ENTOMOLOGY IN INDIA

#history of different periods  
#entomologists to Govt. of India

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# The history of Entomology in India can be divided into four distinct periods



**Ancient Indian:**

- Honey has been known to us from pre-historic times. Honey finds mention in the **Vedas**, the **Ramayana**, the **quran** and many ancient books. **Rigvedas mentions honey as the choist food of god** (3000-5000 B.C)
- **Atharva veda** gives a brief account of **Lac**, the lac insects and usefulness values of lac. In **Mahabharata**, there is a reference of **Laksha Griha** *i.e*, a house of lac implies that lac had been cultivated in India from pre-historic times.
- **Silk** production is believed to have originated in **China** nearly 5000 years ago and slowly spread to India. An Indian prince sends a gift of silk cloth to a Persian ruler in 3870 B.C, indicating that Indians were familiar with the rearing of silkworm.
- In ancient scripts like Ramayana and Mahabharata, some of the terms used were related to insects. They are

**Pipilika – Ant,**  
**Pathanga – grasshoppers,**  
**Madhumakshika – honeybees,**  
**Umbakapalika - termite queen**



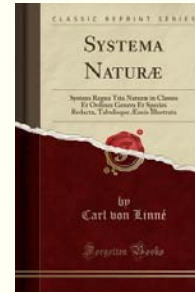
- The reference to insects ant, bees, beetles, flies etc. were found in Sanskrit dictionary, '**Amarakosa**' and in books like **Artha Sastra**, **Chanakya Sutra** etc.
- In Atharvaveda concerning the control of pests infesting crops, humans and animals.
- All these indicate that the ancient Indian was well acquainted with the insects.

**Eighteenth Century:**

- The literature in Entomology is scanty for the first 17<sup>th</sup> centuries A.D. The earliest record of Indian insects is that of **Carl Linnaeus** who included 28 species (12 insects only) in the **10<sup>th</sup> edition** of his “**Systema Nature**” (1758).



Carl Linnaeus

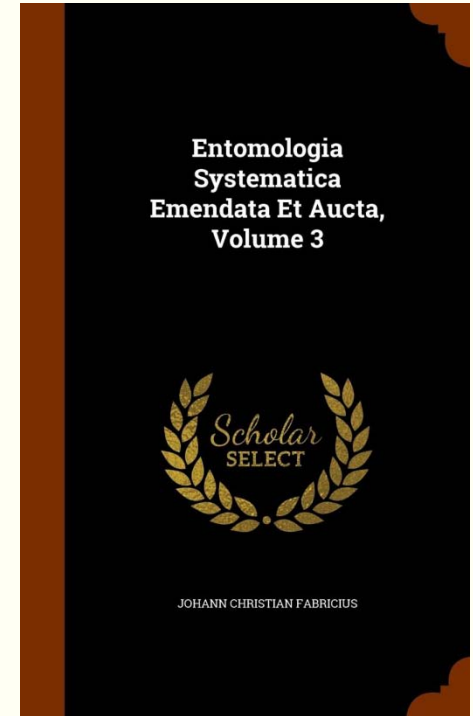


- The first regular work on Indian insects on **scientific lines** was initiated by **Dr. John Gerard Koenig** (1728-1785). He collected insects of Coromandel Coast and sent to C. Linnaeus and **J.C. Fabricius** for identification. Fabricius named the red cotton bug after Koenig as *Dydercus koenigi* (Fabricius). He also published a special account of the **termites** of Thanjavur District.



- **John Christian Fabricius** who received a large number of insect collection from some Christian missionaries and officials of East India Company and included more than 1000 Indian insect species in his publication “**Entomologia Systematica**” (1792-98).

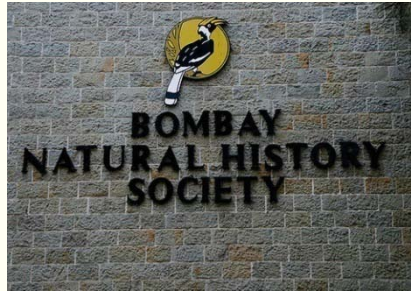
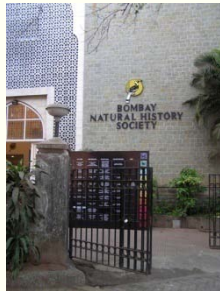
- **The Asiatic Society of Bengal was first scientific society established at Calcutta in 1785.** The society encouraged insect collection and exhibition of Indian insects and published entomological literature.



**Nineteenth Century:**



- **Buchanan** (Traveller) wrote on the “**Cultivation of lac in India**” and on “**Sericulture in some parts of South India**” (1800).
- **Denovan** published **Natural History of Insects** which was the first contribution on the insects of Asia and was **revised in 1842** by **West Wood**.
- The publication of the **Indian Museum notes** was started in **1889** and five volume were published between 1889-1903. These are the monumental publications in **Economic Entomology** and may even said to constitute the birth of **Applied Entomology in India**.
- **The Bombay Natural History Society** was founded in **1883** and since 1886 with the publication of the 1<sup>st</sup> issue of the **Journal of the Bombay Natural History Society**, numerous contributions on Indian Insects were published in the journal.
- The publication of the **Fauna of British Indian** series was started by the Govt. of India from London in 1892, the first of the series being on the moth fauna of India.

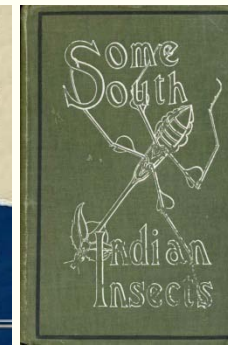
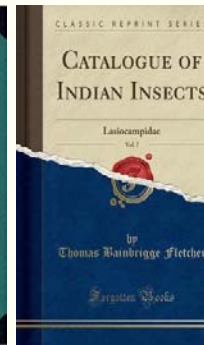
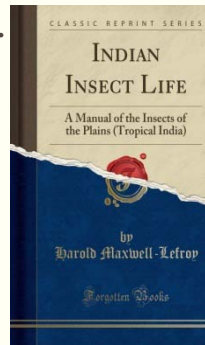
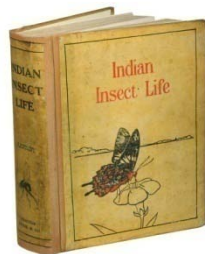


**Twentieth Century:**

- **Lionel de Niceville** was appointed as the **first Entomologist to Govt. of India in 1901** with headquarter at the **Indian Museum, Calcutta**.
- **Harold Maxwell Lefroy** was appointed Entomologist to the Govt. of Indian in 1903 in place of Niceville but was posted at Surat, especially for the study of cotton pests. In 1905, when the Imperial (now Indian) Agricultural Research Institute was established at Pusa in Bihar. Lefroy was transferred there as the **first Imperial Entomologist**. Lefroy did pioneer work on Indian Insects and published two valuable books *i.e*, **Indian insect pests (1906)** and **Indian Insect Life (1909)**.
- **T. B. Fletcher** succeeded H. M. Lefroy as Imperial Entomologist in **1913**. He devoted his attention mainly to insect taxonomy and built up an excellent library and a valuable insect collection particularly of Lepidoptera. He also started the publication of the “**The catalogue of Indian Insect**”. He organised five All India Entomological Meeting at Pusa between 1915-1923. During his tenure, Govt. of Madras (TN) made extensive observations on Agricultural and Horticultural pests, which were later on embodied in his book, **Some South Indian Insects (1914)**.



Entomologists to Government of India	
Lionel de Niceville	1901
Harold Maxwell Lefroy	1903-1912
T. B. Fletcher	1913-1934
Muhammad Afzal Husain	1926
Hem Singh Pruthi	1934-c.1944
P.V. Isaac	c.1944-1947



- **E.P. Stebbing** was appointed **Imperial Forest Entomologist in 1900** and with the establishment of Forest Research Institute at Dehra Dun in 1906. Published book **Indian Forest Insects of Economic Importance: Coleoptera (1914)**.
- **The Zoological Survey of India** was started in **1916** in Indian museum at Calcutta.
- **The Entomological Society of India** was established in **1938** with **M. A. Hussian** as the **founder president**. The society started publication of its Journal, **Indian Journal of Entomology in 1939** with **Hem Singh Pruthi** as its **first Chief Editor**.
- **Dr. S. Pradhan** is consider the **“Father of modern applied entomology in India”**
  - Developed a **“Biometre”** a ready reckoner for estimating the amount of development or the no of generations in any given period and under any range of temp. fluctuation.
  - He propounded the famous **biotic theory** on the periodicity of **locust cycle**.
  - **Mode of action of DDT**
  - He was first to visualize country’s need for IPM and had organized on International seminar on integrated pest control in 1969.
- Prof. **A.S. Atwal** is considered **“Father of modern bee keeping in India”** because he was the **1<sup>st</sup> scientist to successfully introduce *Apis mellifera***.



Edward Percy Stebbing



Muhammad Afzal Husain



Hem Singh Pruthi



Dr. S. Pradhan



Prof. A.S. Atwal

## History of Entomology

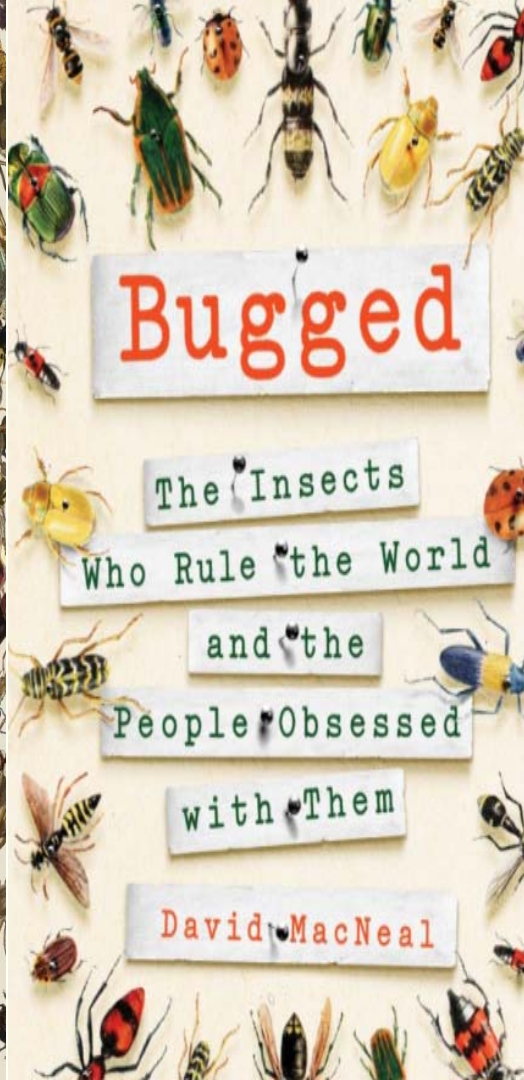
- Entomology (**Entomon = Insect; Logos = Study**) is the branch of science that deals with the study of insects.
- The word insect is derived from **insecare** which means “**to cut in to**”.
- Insects belong to the Phylum Arthropoda which is the biggest phylum of Animal kingdom. Insects appeared 350 million years ago, much earlier than human beings who appeared on earth only 150 000 years ago. They are initially aquatic and later became terrestrial .
- There is much variation in size, shape of the insects
- Insects are distributed every where from cooler parts to hottest tropics. They live in water, land, air, deserts, high mountains etc.
- They can be seen in crop plants, gardens, libraries, museums, stores etc.,
- Aristotle made investigation about flies, honey bees, ants etc.
- 1745- 1808 : “J.C. Fabricius” made an extensive study of Indian insects for the first time and classified insects into 3 orders based on the type of mouth parts.
- 1758 : The beginning of the modern Indian entomology with the publication of 10<sup>th</sup> edition of ‘Systema Naturae’ by ‘Carolus Linnaeus’ where only 12 Indian insects were included and it forms the first record
- 1767-1779: “J.G. Koenig” initiated the first regular scientific work on Indian insects and supplied the insect specimens to systematists like Linnaeus, Fabricius, Cramer and Dury
- 1782: “Dr. Kerr” published an account of Lac insects
- 1840: “Rev Hope” published a paper “Entomology of the Himalayas and India”
- 1893: “Dr. Rothney” published the book ‘Indian ants’ (Earliest record of biological pest control in India *i.e* white ants attack on stationery items kept free by red ants.)
- 1897: **Sir Ronald Ross**, an IMS officer, in-charge of a Madras regiment stationed in Begumpet (Secunderabad) made the discovery of the **malarial parasite in a dissected *Anopheles* mosquito.**

## History of Entomology

- 1901 : “Lionel de Niceville” was appointed as first entomologist to Govt. of India.
- 1903 : “Maxwell Lefroy” succeeded as the second entomologist.
- 1906: publication of ‘Indian insect pests’ by “Maxwell Lefroy”
- 1909: publication of Indian insect life’ by “Maxwell Lefroy”
- 1914 : “T.B Fletcher” , the first Govt Entomologist of Madras state wrote a book ‘Some South Indian insects’.
- 1914: E.P.Stebbing, the first imperial forest entomologist published “Indian forest insects of economic importance :coleoptera
- 1937 : A laboratory for storage pests was started at Hapur, U.P.
- 1937: Entomology division was started in IARI, New Delhi
- 1939-Establishment of locust warning organization after the locust plague during 1926-32
- 1940: T.V. Rama Krishna Ayyar, wrote a book ‘Hand book of Economic Entomology for South India’
- 1953: National Malaria eradication programme was launched
- 1960-“The desert locust in India” monograph by Y. Ramachandra Rao
- 1963: ‘Text book of Agricultural Entomology’ - H S Pruthi
- 1968: ‘General Entomology’ – M S Mani
- 1969: ‘Insect Pests of Crops’- S Pradhan
- 1975: ‘Elements of Economic Entomology’ - B. Vasantharaj David and T. Kumara Swami
- 1975: Insects and Mites of crops in India- M R G K Nair
- 1976: ‘General and applied Entomology’- K.K. Nayar, N. Ananthakrishnan and B. Vasantharaj David.

Thank You





# Bugged

The Insects  
Who Rule the World  
and the  
People Obsessed  
with Them

David MacNeal

*I Appreciate You*



*You are the most thoughtful person  
I know and I'm so very thankful for you.*