

# Review on Beetles (Coleopteran): An Agricultural Major Crop Pests of the World

Dr. S. S. Patole\*

Associate Professor, Department of Zoology, V.V. M's S. G. Patil ASC College, Dhule (M.S.), India

\*Address for Correspondence: Dr. S. S. Patole, Associate Professor, Department of Zoology, V.V. M's S. G. Patil ASC College, Sakri Dist- Dhule (M.S.)- 424304, India

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**ABSTRACT-** The present review deals on major Coleopteran beetles of agricultural crop pests include 45 genera and 55 species from 15 families. Most of the beetles are pest of cereals and millets (3), oil seed crops (2), fibre crops (4), vegetables (11), temperate fruits (7), sub-tropical and tropical fruits (9), ornamental plants (2), plantation crop (8), spices (4) and stored grains (5). Among families; Curculionidae was dominated by 12 (21.8%) species followed by Chrysomelidae 10(18.18%), Cerambycidae 9(16.3%), Scarabaeidae 6(10.9%), Coccinellidae 3(5.4%), Apionidae, Bostrychidae, Brachidae, Buprestidae and Scolytidae each with two species (3.6%). Whereas families like Dermestidae, Lamiidae, Meloidae, Melonithidae and Tenebrionidae contribute each with a single species (1.8%).

**Key-words-** beetle, Coleopteran, Cereals, grains, Spices, Stored temperate fruits

## INTRODUCTION

The coleopterans include more species than any other order, constituting almost 25% of all known types of animal life forms<sup>[1]</sup>. About 4, 50,000 species of beetles occur representing about 40% of all known insects<sup>[2]</sup>. Such a large number of species poses special problems for classification. Among them, about 75% of beetle species are polyphagous in both larval and adult stages, and live in or on plants, wood as well as a variety of stored products<sup>[3,4]</sup>. Because many of these plants are important for agriculture, forestry and the household, beetles can be considered pests and some of them cause significant damage, particularly direct and indirect losses<sup>[5]</sup>. There are several studies on different families of coleopteran by different research workers<sup>[6,7]</sup>.

The pest problems originated with the origin of agriculture. As soon as the land was cleared of natural vegetation and replaced by a single species of food plant, human came into conflict with phytophagous insect<sup>[8,9]</sup>. It was reported that the insect pest problems in agriculture are probably as old as agriculture itself<sup>[10]</sup>. However, rapidly increasing population during the last century has necessitated intensification of agriculture through expansion of irrigation facilities, introduction of high yielding varieties (HYVs) and application of the increased amount of agrochemicals increased the production of land with a concomitant increase in the production lost to insect pest<sup>[11,12]</sup>.

Traditionally, the crops were grown only during the monsoon period and winter served as a closed season for crops as well as for pests in India<sup>[13,14]</sup>. Insect pest damage crop plants either by feeding or during the process of oviposition. Some of the insect pest species are host specific and they feed on plants of a single species called monophagous<sup>[10,15]</sup>. Although presently for every species of green plant, there is roughly a species of phytophagous insect. Most insect orders are not phytophagous but over half of insect species are phytophagous<sup>[13]</sup>.

Assessment of crop losses due to pest has been a difficult and often controversial subject<sup>[16]</sup>. The losses of crops caused by pests are quite high in developed as well as developing countries<sup>[4]</sup>. In North America, Europe and Japan, losses are estimated to be in the range of 10 to 30%, whereas in developing parts of the world, these are substantially higher<sup>[3,7]</sup>. The total losses to major field crops and the stored food grains are caused by insect pests are estimated at 336.6 billion rupees annually<sup>[14]</sup>. There is thus an urgent need to bring down the losses due to pests by following proper pest management strategies. In present review efforts have been taken for understanding of some major crop pest of the world especially coleopteran beetles. The detailed account of the major beetle pest of agricultural crops pertaining to their name, host plant, distributions, nature of damage and pest characteristics are presented in Table 1.

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**Table 1:** An agricultural major crop pest of the world

S. No.	Name and family	Host plants	Distribution and nature of damage	Pest characteristics
1	<i>Apion Corchori</i> Marshall (Jute stem weevil) Coleoptera: Apionidae	Jute	India and Bangladesh. Jute stem weevil can cause appreciable damage to the early-sown jute or crop grown for seed. Weevil makes a number of holes for oviposition	The weevil is small about 1.8 mm in length and 0.8 mm in breadth. Brown or dull black and has small whitish setae on its body
2	<i>Cycas formicarius</i> Fabricius (Sweet potato weevil) Coleoptera: Apionidae	Pest of sweet potato and allied species.	India. It is a pest both in the field and storage. Both the grubs and the weevil bore into the tubers and make them unfit for consumption	The pest is active during rainy season. The adult weevils are small, 5-6.5 mm in length, bluish-black in color with reddish brown prothorax and a long snout. The apodous grub is whitish with brown head and is 8.3 mm long
3	<i>Rhyzopertha dominica</i> Fabricius (Lesser grain borer) Coleoptera: Bostrychidae (Plate 1)	White, rice, maize, lentil, sorghum etc	Originally inhabitant of India. Also reported from Algeria, Greece, United States, New South Wales (Australia), Japan and China. Both adults and grubs cause serious damage to the grains by feeding inside them and reducing them to mere shells with many irregular holes	The larva is about 3 mm long, dirty white with a light brown head. The adult is a small cylindrical beetle measures about 3 mm in length and 1 mm in width
4	<i>Sinoxylon anale</i> Lesne (Grapevine beetle or Ghun) Coleoptera:Bostrychidae	Grapevine, Sal, teak, shisham etc.	India, France, Italy, USSR, Japan and China. The grubs and adult beetle make a circular hole, extending to the centre of the stem and then makes longitudinal galleries and forms a number of exits	The adult is sturdy, walks slowly and flies rarely. It is dark brown and measures 4.25 mm in length and 1.8 mm breadth. The grubs are thick yellow-white and curved
5	<i>Callosobruchus analis</i> Fabricius (Mung dhora) Coleoptera: Bruchidae	Mung, mash, moth, peas, cowpeas and other pulses	India, Myanmar, Germany and Rhodesia. The larva feed and breeds inside the grain, consuming the entire contents. Infected grain happens to be a foul smelling fungus	The larva is recognized by its creamy –white, oval, flabby body. The adult is an oval beetle. Female is chocolate color with black trapezoid. Male is uniformly chocolate with a tinge of straw
6	<i>Callosobruchus chinensis</i> Linnaeus (Gram dhora or Pulse beetle) Coleoptera: Bruchidae (Plate 2)	Notorious pest of gram, mung, moth, peas, cowpeas, lentil and arhar etc.	India, USA, Mauritius, Formosa, Africa, China, Philippines, Japan, Sri Lanka etc. The larva does the damage by feeding inside the grain. The damaged grain becomes unfit for human consumption and sowing	The larva is whitish with a light brown head and later on it acquires a creamy hue. It measure 6-7 mm in length. The adult beetle is 3-4 mm in length, oval, chocolate or reddish brown and has long serrated antennae
7	<i>Sphenoptera Lafertei</i> Thompson (Peach stem borer) Coleoptera: Buprestidae	Grubs are stem borer of peach, almond, apricot, cherry, loquat, pear and plum trees.	Widely distributed in Afghanistan, Pakistan and India. The grubs feed under the bark as well as bore deep into the wood. Plant turn pale and their growth are arrested. Attacked branches dry up and do not bear fruits	Beetles are blackish-bronze and are 10-13 mm long. The grubs are smoky dark or black, club shaped and attains 18-24 mm body length
8	<i>Sphenoptera perotetti</i> G. (Groundnut stem borer) Coleoptera: Buprestidae	Groundnut, Sesame, gram etc	This pest infests the groundnut crop in A.P., Bihar, Delhi, Gujrat, Kerala, Tamil Nadu, M.P., Maharashtra and	The adult is a small jewel like beetle, 10-12 mm in length with a striking metallic shine over a dark brown background. Full

9	<i>Aeolesthes holosericea</i> Fabricius (Cherry stem borer) Coleoptera: Cerambycidae	Cherry, mulberry apricot, crab apple, guava, peach, pear, plum and walnut etc.	Karnataka. The grub of this beetle bores in to the stem and root Polyphagous defoliating pest distributed in India, Sri Lanka, Bangladesh, Myanmar, Malaysia and Thailand. Newly hatched grubs feed on bark and make zig-zag galleries. They bore inside and feed on sap wood and damaged	grown grub is whitish in appearance The adults are dark brown, 38-45 mm long, having short mottled yellowish pubescence on the elytra. Antenna larger. Grubs are yellowish color and are clothed with fine bristles
10	<i>Apriona cinerea</i> Cheverlot (Apple stem borer) Coleoptera: Cerambycidae	Destructive stem borer of apple, peach, fig and other fruit trees	Pakistan, Afghanistan and India (Kashmir, H.P. and U.P.). Grubs bore through stem and affect plant vitality and productivity. Adult beetles feed on bark only	The adult beetles are 35-40 mm long, grey in color and have antennae larger than the body.
11	<i>Batocera horsfieldi</i> Hope (Long horned walnut beetle) Coleoptera: Cerambycidae	Walnut	Darjeeling, Kumaon hills, Kulu valley and Simla hills. The young grubs feed on the inner side of the bark making zig-zag tunnels	The grubs are 90-150 mm long and pale yellow in color. The beetles are 45-65 mm long, black in color with fine ashy or yellow-grey pubescence
12	a. <i>Batocera rufomaculata</i> DeGeer b. <i>B. rubus</i> Linnaeus (Mango stem borer) Coleoptera: Cerambycidae (Plate 3)	Serious pest of mango, fig, guava, jackfruit, mulberry, pomegranate, walnut etc.	Norht-western part of Indian sub-continent. Damage is caused by the grubs, killing a branch or entire tree	The full grown larva is a stout, yellowish-white, fleshy grub, measure about 6 cm in length. The adults are longicorn beetles, large and pale grayish color, 5 cm length and 2 cm in breadth
13	<i>Dorystenes hugelii</i> Redtenbacher (Apple root borer) Coleoptera: Cerambycidae	Root borer of Apple and others like apricot, cherry, peach, pear, walnut.	Kumaon region of Himalayas. As a result of the grubs feeding on roots, they are severed from the base and die	The grown grub is creamy-white with black head and mandibles, measure about 75-100 mm long. The adult beetles are chestnut in color
14	<i>Plocaederus ferruginea</i> Linnaeus (Cashew-tree borer) Coleoptera: Cerambycidae	Cashew tree	South India. The grubs damage the cambial tissue and hence the flow of sap is arrested	The adult is a medium sized dark brown beetle. The full grown grub is measures 7.5 cm
15	<i>Sthenias grisator</i> Fabricius (Grapevine girdler) Coleoptera: Cerambycidae (Plate 4)	Grapes, rose-bushes, mulberry etc.	Serious pest throughout the grape growing areas in the India. Beetles girdling branches of trees from 15 cm to 3 m above the ground	In spring adults are active during night. The full grown grub is 10-12 mm long
16	<i>Xylotrechus quadripes</i> Chevrolat (Coffee stem borer) Coleoptera: Cerambycidae (Plate 5)	Coffee	Southern India and Assam. Myanmar, Sri Lanka, Thailand, Indonesia and Philippines The larvae bore into the coffee stem, killing the young plants.	The adult is a blackish-brown beetle, about 1.25 cm long with prominent antennae. There is characteristic pattern of yellow bands on the elytra.
17	a. <i>Aulacophora foveicollis</i> Lucas (Red pumpkin beetle) b. <i>A. atripennis</i> Fabricius. (Blue pumpkin beetle) Coleoptera: Chrysomellidae (Plate 6)	Cucurbitaceous vegetables like Gourd, Tinda, Ghia tori, Cucumber, Pumpkin, and melon	Asia, Australia, Southern Europe and Africa, North-west India Damage is caused by grubs as well as by beetles. Grubs damages by boring into roots, stem and fruits. The adult are active during March-April when the creepers are very young	Grubs measures about 12 mm in length, creamy white with a slightly dark shield at the back. The adult beetle is small, 5-8 mm long with dorsally brilliant orange red and ventral black surface
18	<i>Di cladispa armigera</i> Colivier	Rice or paddy	It is a very serious pest of	Pest breeds actively from May to

- (Rice Hipsa)  
Coleoptera: Chrysomelidae (Plate 7)
- 19 *Galerucella birmanica* Jacoby (Singhara beetle)  
Coleoptera: Chrysomellidae (Plate 8) Serious pest of water nuts. Paddy at certain places in Punjab and Himachal Pradesh. Apart from the damage caused by larvae as leaf-miners, the adults also feed on green matter and produce parallel whitish streaks on leaves. Widely distributed in Pakistan, Sri Lanka, Myanmar and India. Both the grubs and adult beetles feed on leaves. Major damage is caused by grubs. Pest is active throughout the year
- 20 *Longitarsus nigripennis* Motshulsky (Pollu beetle)  
Coleoptera: Chrysomelidae Black pepper India. Both adult and the grubs cause damage to berries. Grubs boring into the berries and eating the contents completely within 10 days. Adults feed voraciously on tender leaves and make holes in them
- 21 a. *Phyllotreta cruciferae* Goeze  
b. *P. chotanica* Duviv  
c. *P. birmanica* Harold  
d. *P. oncera* Maulik  
e. *P. downesi* Baly (Cabbage flea beetles)  
Coleoptera: Chrysomelidae (Plate 9) Almost all cruciferous plants like mustard, raya, taramira, toria and vegetables like radish, turnip, cabbage, cauliflower and knoll-khol. Europe, USSR, North and South America, Australia, Japan and India. The adults mostly feed on the leaves by making innumerable round holes in the host plants. The stem, flowers and even pods may also be attacked. The old, eaten away leaves dry up, while the young leaves are rendered unfit for consumption
- 22 a. *Epilachna dodecastigma* Wiedem.  
b. *E. vigintioctopunctata* Fabricius  
c. *E. demurilli* (Hadda beetles)  
Coleoptera: Coccinellidae (Plate 10) First two species attack on Solanaceous plants like brinjal, tomato and potato while *E. demurilli* attack on cucurbitaceous vegetables. Throughout India. Both the adults and grubs cause damage by feeding on the upper surface of leaves
- 23 *Alcidodes porrectirostris* Marshall (Walnut weevil)  
Coleoptera: Curculionidae Destructive pest of English Walnut. Himalayan region in Kumaon, Kulu and Kashmir. The adults feed on buds and flowers but the grubs feed inside the fruits and are extremely destructive in causing premature dropping
- 24 *Cosmopolites sordidus* Germar (Banana weevil) Banana South-east Asia (India), Australia, Hawaii Islands, The adults are about 1.3 cm long, shiny black with elongated
- October and hibernate during winter. In May, the beetle lay eggs. On hatching, the young grubs feed as leaf minor. The attached leaves turn membranous with blotches and finally die
- The full grown grubs are about 6 mm in length, the upper surface is black and lower surface is yellow. The beetles are about 6 mm long and 3 mm broad. They are yellowish brown to dark brown with black eyes and large hump is the middle of the body
- The adult is a small shining, yellow and blue flea beetle with stout hind legs. The full grown grub is yellowish with a black head and it measures 5 mm in length
- The adult beetle is metallic blue in color with a greenish hue. The body is elongate narrow in front but broad distally. The beetle is round at the anal end. The male is smaller (1.8 mm) than female beetle (2.0 mm)
- Beetles of all three species are about 8-9 mm in length and 5-6 mm in width. *E. dodecastigma* are deep copper-colored and have six black spots on each elytron whose tip is more rounded. *E. vigintioctopunctata* beetles are deep red and usually have 7-14 black spots on each elytron whose tip is somewhat rounded. *E. demurilli* beetles have a dull and light copper colored. Each of their elytron bears six black spots surrounded by yellowish rings. Grubs of all three species are about 6 mm long, yellowish in color and have six rows of long branched spines
- The adult weevil is about 10 mm long, pitch black when young and turn dark brown with age. The grub is legless, with a pale-brown head, 15 mm in length

	Coleoptera: Curculionidae (Plate 11)		Tropical and south Africa and tropical America. The damage done by the weevil is through the destruction of corm tissue	and slightly curved snout and longitudinal straight elytrae
25	<i>Diocalandra frumenti</i> Fabricius (Coconut weevil) Coleoptera: Curculionidae (Plate 12)	Coconut palm, date palm, oil and nipa palms and sorghum.	South India, Sri Lanka, Myanmar, Malaysia, Thailand, Indonesia and Philippines. The grubs attack all parts of the coconut palm particularly the roots, the leaves, and fruit stalks. As a result there is premature fruit fall	The adults are small weevil, 6-8 mm in length, shiny blackish with four large reddish spots on elytra. Life cycle completed in 10-12 weeks
26	<i>Echinocnemus oryzae</i> Marshall (Paddy root weevil) Coleoptera: Curculionidae	Rice	Serious pest of rice in southern India. It was first recorded in the northern parts in 1953 at Sirsa (Haryana). Also found in Patiala district of Punjab. The grubs feed on root hairs of crop, affecting plant growth. The infected crop remains stunted and killed	Pest is active only from September and passes rest of period as pupa in the soil. Weevil emerge in July with first shower of rain and are seen sitting on rice plant and start to lay the eggs. The grubs lead an aquatic life and feed on the root hairs
27	<i>Myllocerus lactivirens</i> Marshall (Almond weevil) Coleoptera: Curculionidae	Almond, pear, apricot, ber, citrus, falsa, loquat, mango, peach, plum and pomegranate.	Widely distributed in India. The weevils congregate on ventral surface of leaves, nibble irregular holes and gradually eat away the entire leaf lamina. Leaving only the mid-ribs	Weevil is small 3-4 mm long and pale metallic green in color. The full grown grubs are creamy white, 4 mm long, stout body without legs
28	<i>Myllocerus undecimpertulatus</i> Faust (Cotton Gray weevil) Coleoptera: Curculionidae (Plate 13)	Cotton. Also feed on bajra, sorghum, maize, guava, arhar, groundnut etc.	Found throughout India. Both adults and grubs cause damage. The plants are attacked by the weevil which are prominent above the ground whereas the grubs which are feed on the underground parts. The adults feed on leaves, buds, flowers and young bolls cut prominent round holes	The weevils are grey and are 3-6 mm long. The grubs are white, legless, cylindrical, 8 mm in length. The weevil appears in April-May and lay eggs in soil. They breed 3-4 times in a year
29	<i>Pempherulus affinis</i> Faust (Cotton stem weevil) Coleoptera: Curculionidae	Cotton	India, Myanmar, Thailand and Philippines. In india, it occurs in Tamil Nadu, A.P., Karnataka, Kerala, Bihar, Odisha, Rajasthan U.P., Gujrath and Assam. The pest causes serious damage to Cambodia cotton in South India. The grubs feed on soft tissue of cotton stem. Plant mortality up to 25%	Greyish black weevil emerges from the stem killing the plants. The adult is a dirty brown or grayish-black weevil, about 3 cm in length. The grub is slightly curved, creamy white with a distinct head
30	<i>Prodiotes haematicus</i> Chevr (Rhizome weevil) Coleoptera: Curculionidae	Cardamom	Widely found on cardamom plants in various states of South India. Grubs make severe tunneling and feeding inside the rhizomes result in death of plant	The adult is a brown weevil measure 12 mm in length
31	<i>Rhynchophora ferruginea</i> Olivier (Red palm weevil) Coleoptera: Curculionidae (Plate 14)	Coconut palm and date palm.	India, Pakistan, Bangladesh, Sri Lanka, Malaysia, Philippines and New Guinea. The larvae bore and feed on the soft tissue and cause severe damage	The weevil is reddish-brown, cylindrical with a long curved snout. The male has tuft of hairs along the dorsal surface of snout

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|----|---|--|--|--|
| 32 | <i>Sitophilus oryzae</i> Linnaeus<br>(Rice weevil)<br>Coleoptera: Curculionidae (Plate 15)                  | Rice, wheat, maize and other stored grains   | Throughout world.<br>Both adult and grub cause damages. Heavy damage cause in the monsoon. The weevil destroys more than they eat  | The full grown larva is 5 mm in length and is plump, fleshy legless creature having white body and a yellow-brwon head. The adult is a small reddish-brwon beetle about 3 mm in length with a cylindrical body and a long, slender, curved rostrum                 |
| 33 | <i>Sternochetus magniferae</i> Fabricius<br>(Mango stone weevil)<br>Coleoptera: Curculionidae (Plate 16)    | Mango  | It is widely distributed throughout the tropics.<br>Larvae feeding in pulp sometimes heal over but fruit get spoiled when the weevil makes an exit through ripe or near ripe mangoes                                       | The adult is short stoutly built, ovoid, dark brown weevil found inside the stone of mango fruit or in its pulp  |
| 34 | <i>Tanymecus indicus</i> Faust<br>(Ghujhia weevil)<br>Coleoptera: Curculionidae                             | Wheat, barley, gram and mustard  | Widely distributed in Indian Sub-continent. Adult beetle cut the germinating seedlings at the ground levels  | The pest is active from June to December and passes rest of year as a grub or pupa in soil. It has only one generation in a year   |
| 35 | <i>Trogoderma granarium</i> Everts<br>(Khapra beetle)<br>Coleoptera: Dermestidae (Plate 17)                 | Wheat and other grains like sorghum, barley, gram, rice, maize etc.                | India, Pakistan, England, Germany, USA and Israel.<br>The greatest damage is done in summer from July to October. Grubs eat the grain near the embryo and proceed inwards and reducing the grain to a mere frass           | Full grown larva is about 4 mm in length and is brownish with yellow brown transverse bands across the body which has long hairy bristles. The adult is a small dark-brown beetle, 2-3 mm long with retractile head and clubbed antennae                           |
| 36 | <i>Nupserha bicolor postbrunnea</i> Dutt<br>(Jute Stem girdler)<br>Coleoptera: Lamiidae                     | Jute, Dhaincha and mesta.  | India and Bangladesh.<br>The main damage is caused by the adult beetle while preparing sites for egg-laying on the stem. It results breakage of fibre length at several places   | Medium sized, bright colored and cylindrical- bodied beetle. There is only one generation in a year  |
| 37 | <i>Mylabris phalerata</i> Pallas<br>(Banded Blister beetle)<br>Coleoptera: Meloidae (Plate 18)              | Flowers of <i>Hibiscus Rosa-sinensis</i> , <i>Ruellia indica</i> and other plants. | Wide distribution.<br>Active from July to September. Adult devours the plant completely  | Prominent large beetle has six alternating bright orange and black bands, against the general dark background of the body. It is 3 cm in length  |
| 38 | <i>Leucopholis coneophora</i> Burm<br>(Coconut white grub)<br>Coleoptera: Melonithidae (Plate 19)           | Coconut, tapioca, yam, colocasia, sweet potato and banana.                         | South India particularly in Kerala.<br>The beetles defoliate the host plant. Grub continuous feeding on roots, vitality of plant reduced and color become yellowish  | The beetles are chestnut colored and measures 16 mm in length. Grubs are whitish colored   |
| 39 | a. <i>Adoretus pallens</i> Arrow<br>b. <i>A. nitidus</i> Arrow<br>(Ber beetles)<br>Coleoptera: Scarabaeidae | Ber and grapevine  | Distributed in Northern India and Pakistan.<br>During night beetles make round holes in the leaves and defoliate. Such tree does not bear any fruit  | Adult beetles are bright yellow color and yellowish-brown shiny wings  |
| 40 | <i>Holotrichia cansanguinea</i> Blan.<br>(White grub)<br>Coleoptera: Scarabaeridae                          | Groundnut. Also infest to sorghum, maize, Chilli, Okra, Bringal and sugarcane.     | Gujarat, Haryana, H.P., Rajasthan and Punjab.<br>The grubs eat away the nodules, the fine rootlets and main root, ultimately killing the plant. At night the beetle feed on foliage and may completely defoliate the plant | The grubs are mostly found in the upper 5-10 cm layer of soil. When full grown, they are about 35 mm long and are white, having a brown head. The adults are dull brown and measure about 18 mm in length. Adults formed in November remain in soil till next June |
| 41 | <i>Holotrichia insularis</i> Brenske<br>(white grub)<br>Coleoptera: Scarabaeridae                           | Tamarind, Ber, Gauva, jamun, mango etc.  | Gujarat, Rajasthan, Haryana and Punjab<br>The nymph feed on rootlets resulting in gradual withering  | The adults are brownish black convex beetles. The full grown grubs are white, fleshy, curved, 38-44 mm long and 6-9 mm   |

<p>42 <i>Oryctes rhinoceros</i> Linnaeus (Rhinoceros beetle) Coleoptera: Scarabaeidae (Plate 20)</p>	<p>Coconut and other Palms</p>	<p>and drying up plants South-east Asia, the Philippines and southern China, Mauritius. Adult stage is harmful feeds on the crown of the coconut tree</p>	<p>wide and are found in soil The stoutly built beetle has a pointed horn on its head, is elongate and cylindrical 4-5 cm. it has well developed wings and can fly long distance</p>
<p>43 <i>Hypothenemus hampei</i> Ferrari (Coffee-berry borer) Coleoptera: Scolytidae (Plate 21)</p>	<p>Robusta and Arabica Coffee</p>	<p>South-east Asia, Sri Lanka, Indonesia and Africa Adult makes holes around ripped berries and make them unfit for marketing</p>	<p>The white legless, brown headed grubs feed by tunneling in the tissues. The adult female is larger (2.5 mm) than the male (1.6 mm). Males are flightless</p>
<p>44 <i>Xylosandrus compactus</i> Eichhoff (Coffee shot-hole borer) Coleoptera: Scolytidae</p>	<p>Coffee</p>	<p>Sothern India Both adult and the larva produce a large number of pin holes in the bark. They make tunnel through the bark and cause wilting of the branch</p>	<p>Adult is a cylindrical dark-brown beetle. Larva is whitish and apodous</p>
<p>45 <i>Tribolium castaneum</i> Herbst (Rust red flour beetle) Coleoptera: Tanebrionidae (Plate 22)</p>	<p>White flour. Also feed on dry fruits and pulses.</p>	<p>Worldwide Both larvae and adult cause damage. The greatest damage is during the hot and humid monsoon season</p>	<p>The matured larvae are reddish yellow color and hairy measures 6 mm in length. The adult is a small reddish-brown beetle measures about 3.5 mm in length</p>

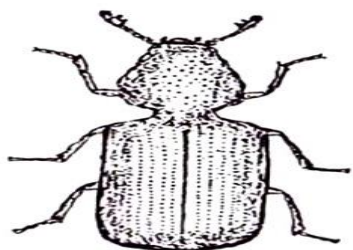


Plate-1: Lesser grain borer

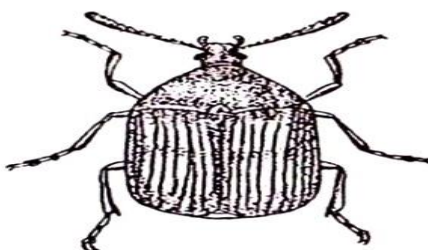


Plate-2: Gram dhora

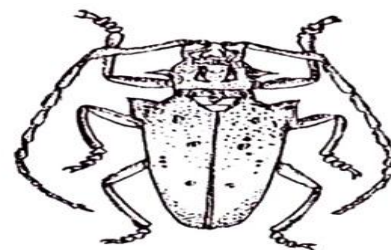


Plate-3: Mango stem borer



Plate-4: Grapevine girdler



Plate-5: Coffee stem borer

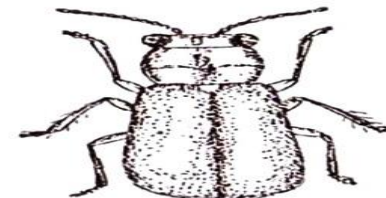


Plate-6: Red pumpkin beetle

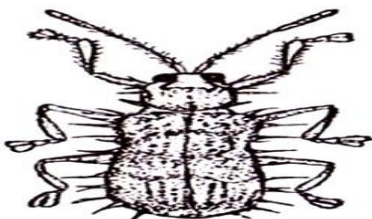


Plate-7: Rice hispa

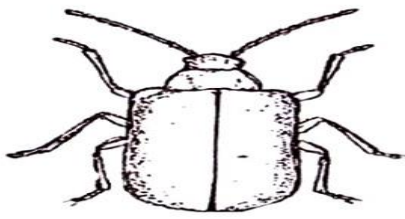


Plate-8: Singhara beetle

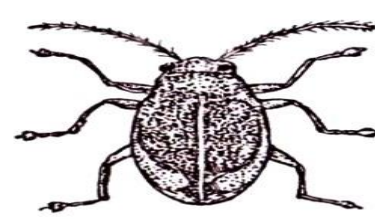


Plate-9: Cabbage flea beetle

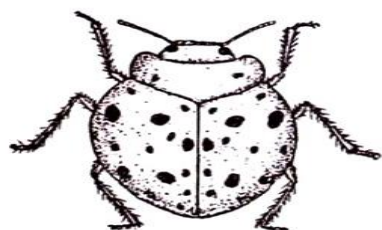


Plate-10: Hadda beetle

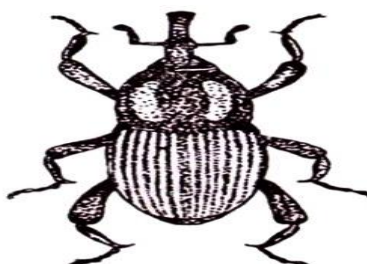


Plate-11: Banana weevil

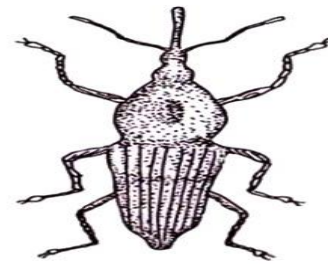


Plate-12: Coconut weevil

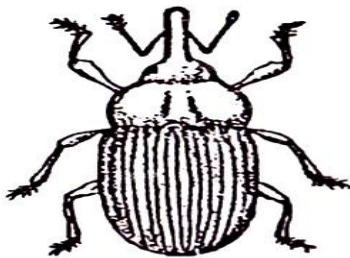


Plate-13: Cotton grey weevil

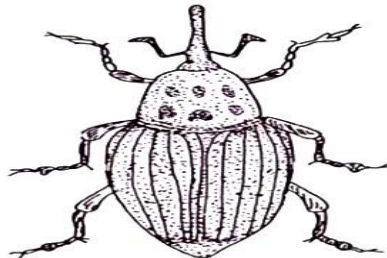


Plate-14: Red palm weevil

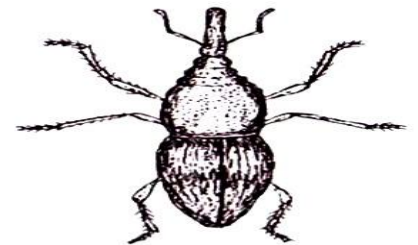


Plate-15: Rice weevil

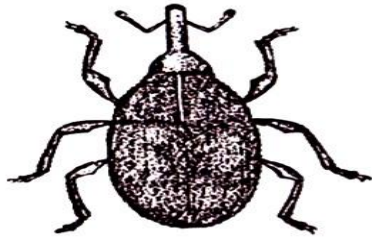


Plate-16: Mango stone weevil

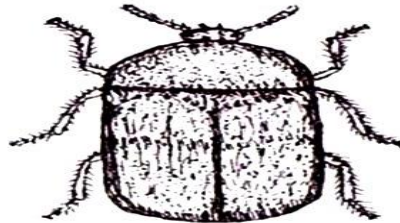


Plate-17: Khapra beetle



Plate-18: Banded blister beetle

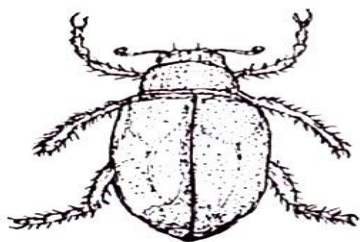


Plate-19: Coconut white grub



Plate-20: Rhinoceros beetle

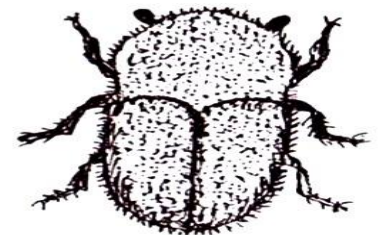


Plate-21: Coffee berry borer

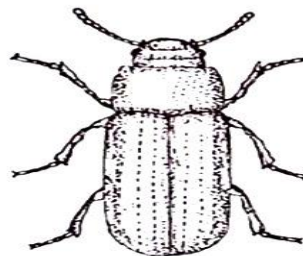


Plate-22: Rust red flour beetle

Fig. 1: Plate 1 to 21 of Agricultural crop pests of the world

## CONCLUSIONS

A review on present study indeed coleopteran beetles of major agricultural crop pest includes 45 genera from 15 different families. Most of beetles are pest of different crops viz., cereals, oilseeds, vegetables, fruits, plantation crops and stored grains etc. Family wise number of pest species showed Curculionidae was dominated by 12 species followed by Chrysomelidae (10), Cerambycidae (9), Scarabaeidae (6), Coccinellidae (3), Apionidae, Bostrychidae, Brachidae, Buprestidae and Scolytidae each with two species and other families like Dermestidae, Lamiidae, Meloidae, Melonithidae and Tenebrionidae contribute each with single species.

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