Sugar cane is commercially grown in Hawaii, Fiji, Queensland, Java, the Philippines and Formosa. It is also propagated as a garden crop by native peoples in many other parts of the Pacific and especially by the numerous tribes of New Guinea. Entomologists have long studied and documented the sugar cane insects in the 6 commercial areas and the extensive literature covering their investigations gives a fairly complete index to the major pests and most of the minor ones. This literature indicates the importance of the various species in each of the 6 regions and discloses the pattern of distribution of the species. The most informative publications are listed below under ‘References’. Of particular value is Box’s *List of Sugar Cane Insects*, which records the many parasites and predators of a large number of the insect pests summarized herewith, together with the countries where they are known. There is yet a need for a thorough survey and published compilation of the species occurring on both wild and cultivated forms of the genus *Saccharum* in New Guinea, from whence the species *officinarum* is believed to have been dispersed.

From available records some 257 insect species are known to feed on living sugar cane within the Pacific. Of this total, 75 species have been listed as important and many that have been considered of minor importance in one country could probably assume a major status should they invade one or more of the other regions discussed herein. The history of the sugar cane leaf hopper *Perkinsiella saccharicida* Kirk. in Hawaii is a good example. Of the 99 species listed as feeding on cane in Formosa, 33 are considered important. Of 102 species in Java, 22 are serious, while of 83 known in the Philippines, 27 are classed as serious. Java, Formosa and the Philippines have many species in common, occurring in two or sometimes three of the countries. Thus 41 species are found in both Formosa and Java, 40 species in Formosa and the Philippines and 31 species are recorded in all three regions; 59 species are cited as attacking cane in Australia, of which 14 are serious; 33 in Hawaii, 9 of which are or have been important, while only 27 species have been listed for Fiji, of which 6 are at least potentially important. Approximately half of the species in the latter three countries occur elsewhere in the Pacific.

In proof of the need for the enforcement of effective quarantine measures between the six countries, it is of interest that of the 257 species of insects known to feed on sugar cane in the Pacific, 62 are found only in Formosa, 22 only in the Philippines, 40 in Java, 36 in Australia, 17 in Fiji and 13 only in Hawaii. However, a few of the above occur outside of the Pacific area.

Of the total, 134 species attack the leaf either as sap suckers or leaf defoliators; 11 feed on the bud; 75 injure the underground parts of the plant, while 37 species damage the stalk or young shoots. Only 3 species are recorded from all six countries. These are *Pseudaletia unipuncta* (Haw.), *Saccharicoccus sacchari* (Ckll.) and *Rhopalosiphum maidis* (Fitch).
The following summary shows the order and family to which each insect belongs, the countries where it is known, the part of sugar cane attacked and its importance in the several Pacific countries. It is hoped that summaries of the same general nature will be compiled by entomologists for India, Mauritius and Africa and secondly North and South America, together with the West Indies.

Entomologists have listed some 60 other insect species found on sugar cane in the Pacific, which are considered of doubtful or insignificant importance. These are not recorded in the present paper, nor are insects recorded as feeding on dead cane included. Parentheses have been omitted with author's names where genera have been changed.

ORTHOPTERA

ACRIDIDAE

*Oxya chinensis* Thunb. Important leaf damage in Hawaii; but now controlled by an imported parasite.

*Oxya velox* F. Minor leaf damage in Queensland, Java, Formosa and the Philippines.

*Oxya sp.* Of minor importance in Java to leaves.

*Oxya intricata* Stal. Minor leaf damage in Formosa and Philippines.

*Locusta migratoria* migratorioides Rch. & Fairm. Occasionally does heavy damage to leaves in Philippines and less in Queensland.

*Locusta migratoria manilensis* Meyen. Periodically causes heavy damage to leaves in Formosa and Philippines.

*Locusta cinerascens* F. Important damage to leaves in Philippines.

*Locusta migratoria* ph. solitaria F. Important leaf defoliator in Queensland occasionally but of moderate importance in Fiji and Formosa. It also occurs in Guam.

*Chondracris rosea* Degeer. Minor leaf damage in Formosa and Java.

*Atractomorpha psittacina* de Haan. A minor defoliator in Java, Formosa and the Philippines.

*Atractomorpha crenaticeps* Blanch. Minor damage to leaves in Java and of no importance in Queensland.

*Atractomorpha crenulata* F. Of minor importance in Java.

*Aiolofius tasnulus* F. Minor leaf damage in Formosa, Java, Fiji, Philippines and Queensland. It is also in Guam.

*Trilophidia annulata* Thumb. Minor leaf damage in Philippines and Java. Of no importance in Formosa.

*Trilophidia cristella* Stal. Of moderate importance in Java and the Philippines as a leaf defoliator.

*Acrida turrita* L. Minor leaf damage in Java and Formosa.

*Acrida sp.* Minor leaf damage in Java.

*Hieroglyphus annulicornis* Shiraki. An important leaf defoliator in Formosa.

*Stenobothrus formosanus* Mats. Minor leaf damage in Formosa.

*Austracris gutulosa* Wilk. Minor leaf damage in Queensland and Fiji.

*Austracris proxima* Wilk. Minor leaf damage in Queensland.

*Gastrimargus musicus* F. Occasionally important leaf damage in Queensland.

*Gastrimargus marmoratus* Thumb. Minor leaf damage in Java.
Gastraipargus transversus Thunb. Minor leaf damage in Java and Formosa.

Acridium aeruginosum L. Minor leaf damage in Java.

Patanga luticollis Serv. Minor leaf damage in Java.

Valanga zehntneri Krauss. Minor leaf damage in Java.

Catactops splendens Thunb. Minor leaf damage in Formosa.

Euprepocnemis izhigakii Shiraki. Minor leaf damage in Formosa.

Tettigonidae

Elimaea chloris de Haan. Minor leaf damage in Java.

Macopoda elongata L. Minor leaf damage in Java and Philippines.

Phaneroptera sp. Minor leaf damage in Java.

Eucnosephalus varius Wlk. Minor leaf damage in Formosa.

Pseudorhynchus sonani Shiraki. Minor leaf damage in Formosa.

Tettigoniidae

Acridium aeruginosum L. Minor leaf damage in Java.

Patanga luticollis Serv. Minor leaf damage in Java.

_Valanga zehntneri_ Krauss. Minor leaf damage in Java.

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_Tettigoniidae_

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_Phaneroptera_ sp. Minor leaf damage in Java.

_Eucnosephalus varius_ Wlk. Minor leaf damage in Formosa.

_Pseudorhynchus sonani_ Shiraki. Minor leaf damage in Formosa.

Gryllotalpidae

Gryllotalpa africana Beav. Destroys buds and young shoots in seed-pieces underground. Of moderate importance in Formosa, Java and Philippines and Hawaii; but now controlled in Hawaii by an imported parasite.

Gryllotalpa formosana Shiraki. Rated an important pest in Formosa through damage to seed-pieces and young shoots.

Gryllidae

Brachytrupes portentosus Licht. Moderate damage to the buds above ground in Formosa.

Gryllus bimaculatus Degeer. Important damage to the cane buds in Formosa and moderate damage in Java and the Philippines.

_Acheta mirata_ Licht. Important damage to the buds in Formosa.

_Acheta testacea_ Wlk. Minor damage to the cane buds in the Philippines.

_Acheta oceanica_ Le Guill. Minor damage to the cane buds in Hawaii and Fiji.

_Acheta plebeja_ de Saussure. Minor damage to buds in Formosa.

Isoptera

_Coptotermes formosanus_ Shiraki. Causes serious damage to the stalk in isolated spots in Hawaii and Formosa. Damage uncommon.

_Heterotermes philippinensis_ Light. Occasionally found heavily damaging the stalk in the Philippines.

_Mastotermes darwiniensis_ Frogg. Causes serious damage to the stalk in Queensland.

_Termes meredianalis_ Frogg. Moderate damage to stalk in Queensland.

_Termes sp._ Reported serious damage to stalk at times in Java.

_Macrotermes gilvus_ Hagi. Considered serious in some soils in Java, through stalk damage. Not important in the Philippines.

_Capritermes nitobei_ Shiraki. Listed as a serious stalk pest in Formosa.

_Odontotermes formosanus_ Shiraki. An important stalk feeder in Formosa.

_Reticulitermes speratus_ Kolbe. An important destroyer of the stalk in Formosa.

Thysanoptera

_Thrips serratus_ Kobus. Of minor importance in Formosa and of no importance in Java and Philippines. A sap sucker on leaf.
*Thrips saccharoni* Moulton. Of moderate importance in Hawaii as a leaf sap sucker.

*Anaphothrips sacchari* Moulton. Of minor importance in Philippines.

**Phloeothripidae**

*Podothrips lucassoni* Kruger. On stalk and leaves in Java, Hawaii and Queensland. Believed to feed on mites and as a cane pest at least of minor importance.

**HEMIPTERA**

(All Hemiptera listed are sap suckers on leaf, stalk or roots.)

**Lygaeidae**

*Phaenacantha australica* Kirk. Causes important leaf spotting and yellowing in Queensland.

*Phaenacantha saccharicida* Karsch. Causes important leaf spotting and yellowing in Java.

*Phaenacantha marcida* Horv. Causes important leaf spotting and yellowing in Formosa.

*Ischnodemus saccharivorus* Okajima. Causes important leaf spotting in Formosa.

**Coccidae**

*Coccus takanoi* Takahashi. Of moderate importance on stalk and leaf sheath in Formosa.

*Mizococcus sacchari* Takahashi. Of minor importance on roots in Formosa.

*Saccharicoccus sacchari* Ckll. Important on stalk in Java, Fiji, Philippines, Formosa, Queensland and Hawaii.

*Trionymus diminiatus* Leon. Of minor importance on stalk in Formosa.

*Pseudococcus saccharicola* Takahashi. Of minor importance on leaf bases in Formosa.

*Lecanopsis sacchari* Takahashi. Of minor importance on roots in Formosa.

*Dysmicoccus honensis* Kuwana. Of moderate importance on stalk in Formosa, Java, Philippines, Hawaii and Queensland.

*Dysmicoccus brevipes* Ckll. Of minor importance occasionally at leaf bases or more often on underground parts of the stalk near the surface. Recorded in Queensland, Fiji and Hawaii.

*Aulacaspis tegalensis* Zhnt. Important on the stalk in Java and of minor importance in Formosa and the Philippines.

*Aulacaspis madiunensis* Zhnt. Important on the stalk in Java but of minor importance in Queensland.

*Aulacaspis* sp. Important on stalk in Java.

*Margarodes* sp. Known as ‘Ground Pearls’ in Queensland where it occurs amongst the roots and of uncertain importance.

*Lecanium brugeri* Zhnt. Of minor importance on stalk in Java.

*Odonaspis secretu sacchariculuis* Zhnt. Of minor importance on stalk in Java and the Philippines.

*Chionaspis saccharifolii* Zhnt. Of minor importance on leaf in Java and the Philippines.

*Chionaspis depressa* Zhnt. Of minor importance on leaf in Java and the Philippines.

*Aclerdta takahashii* Kuwana. Of minor importance on stalk in Formosa.
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**APHIDIDAE**

*Apis sacchari* Zhnt. Important on leaf in the Philippines and of moderate importance in Formosa, Java, Queensland and Hawaii.

*Rhopalosiphum maidis* Fitch. Important as a vector of mosaic disease in Java, Formosa, Philippines, Hawaii, Queensland and Fiji.

*Oregma lanigera* Zhnt. Important on leaf in Java, Philippines and Formosa. It is also in New Guinea.

*Geoica lucifuga* Zhnt. Minor importance on roots in Formosa, Java, Philippines, Queensland.

*Tetraneura hirsuta* Baker. Of minor importance on roots in Formosa.

*Tetraneura radicicola* Strand. Of minor importance on roots in Formosa.

**ALEURODIDAE**

*Neomaskellia bergii* Sign. Of moderate importance on leaf in Formosa, Java, Philippines, Queensland, Fiji.

*Auleurodobus barodensis* Mask. Of minor importance on leaf in the Philippines.

*Auleurodes lactea* Zhnt. Of minor importance in the Philippines and Java, on leaf.

*Auleurodobus* sp. Of minor importance in Java on leaf.

**RICANIIDAE**

*Ricania flabellum* Noualhier. Of minor importance on leaf in Formosa.

*Ricania taeniata* Stal. Of minor importance in the Philippines and of no importance in Formosa. On leaf.

*Ricania proxima* Mel. Of minor importance on leaf in the Philippines.

**LOPHOPIDAE**

*Lophops carinatus* Kirby. Of minor importance in the Philippines on leaf but of no importance in Formosa.

**DERBIDAE**

*Proutista moesta* Westw. Important on the leaf in the Philippines and of minor importance in Formosa and Java. It is also in Guam.

*Diostrombus politus* Uhler. Of minor importance on leaf in Formosa.


*Kamendaka saccharivora* Mats. Of minor importance on leaf in Formosa.

**MEENOPLIIDAE**

*Nisia atrovenosa* Leth. Of minor importance on leaf in Formosa.

**DELPHACIDAE**

*Sogota furcifera* Horv. Of minor importance on leaf in Formosa.

*Nilaparvata oryzae* Mats. Of minor importance on leaf in Formosa.

*Perkinsiella saccharicida* Kirk. Important on leaf and stalk because a vector of Fiji disease in Queensland and a potential vector in Formosa, Java and Hawaii. Also in Mauritius.

*Perkinsiella vastatrix* Bredd. Important in the Philippines as a vector of Fiji disease and potentially so in Formosa and Java. Occurs on leaf and stalk.

*Perkinsiella thompsoni* Muir. Of minor importance on leaf in Java. It is also in Guam.
Perkinsiella vitiensis Kirk. Important on leaf and stalk in Fiji where it is a vector of Fiji disease. Also in Samoa.
Eumetopina flavipes Muir. Of minor importance on leaf in the Philippines.
Eumetopina hrygeri Bredd. Of minor importance on leaf in Java.

Tropiduchidae
Catullia subtestacea Stal. Of minor importance on leaf in the Philippines.

Dictyopharidae
Dictyomorpha hectica Haupt. Of minor importance on leaf in the Philippines.

Cydnidae
Lactistes rastelli Schiodte. Of minor importance on roots in the Philippines.
Neostibaropus formosanus Esaki. Of minor importance on roots in Formosa.
Stibaropus molginus Schiodte. Of minor importance on roots in Java and the Philippines.

Cicadellidae
Cicadella parathaon Kirk. Of minor importance on leaf in Queensland.
Cicadella spectra Dist. Of minor importance on leaf in the Philippines and of no importance in Formosa and Queensland.
Scaflhoideus sp. Of minor importance on leaf in Philippines.
Draeculacephala mollices Say. Of minor importance on leaf in Hawaii.

Lepidoptera

Eucosmidae
Eucosma schistacea Sn. An important stalk borer in Java, Formosa and the Philippines. It is also in Guam.

Pyralidae
Chilotraea infuscataella Sn. A serious borer in the stalk, particularly in young shoots, in Formosa, Java and the Philippines.
Proceras venosatus Wlk. An important stalk borer in Formosa, Java and the Philippines.
Scirpophaga nivella F. An important stalk borer in Formosa, Java and the Philippines.
Emmalocera umbricostella Rag. A shoot borer of moderate importance in Formosa.
Cnaphalocrocis medinalis Guenée. A leaf roller of minor importance in the Philippines and of no importance in Formosa.
Lamprosena sp. A stalk borer of minor importance in Formosa.
Marasmia trapexalis Guenée. A leaf roller of minor importance in Java and the Philippines.
Pyrausta colesalis Wlk. A leaf roller of minor importance in Java.
Hedylepta accepta Butl. An important leaf roller in Hawaii.
Fossifrontia sp. A stalk borer of minor importance in Queensland.

Psychidae
Clania pryeri Leech. A minor leaf defoliator in Formosa.
Acanthopsyche saccharivora Sonan. A minor leaf defoliator in Formosa.
LIMACODIDAE

Parasa bicolor Wlk. An important leaf defoliator in Formosa and of minor importance in Java.

SATYRIDAE

Melanitis leda L. A minor leaf defoliator in Formosa, Java, the Philippines and Fiji.

Mycalesis visala zonata Mats. A minor leaf defoliator in Formosa.

Mycalesis mineus L. A minor leaf defoliator in the Philippines.

Mycalesis horsfieldi Moore. A minor leaf defoliator in Java.

HESPERIIDAE

Pelopidas mathias F. An important leaf defoliator in Formosa but of minor importance in Queensland, Java and the Philippines.

Telicota augias L. A minor leaf defoliator in Formosa and Java.

Pallotis sub-sp. kresti Macl. A minor leaf defoliator in Queensland.

Telopidas conjuncta H.S. A minor leaf defoliator in Java.

Pamphila dana Kollar. A minor leaf defoliator in Java.

Parnara guttulus mangala Moore. A minor leaf defoliator in Java and the Philippines.

Arrhenes marnas Feld. A minor leaf defoliator in Queensland.

NOTODONTIDAE

Anticyra combusta Wlk. A minor leaf defoliator in Formosa, Java and the Philippines.

ACRIBIDAE

Acidalia sp. A minor leaf defoliator in Java and of no importance in Formosa.

SPHINGIDAE

Leucothea lineata Westw. A minor leaf defoliator in Java and Formosa.

ACRITIDAE

Creatonotus gangis L. A minor leaf defoliator in Java and the Philippines but of no importance in Formosa.

Diacrisia strigulata Wlk. A leaf defoliator in Java of minor importance.

ACRODIDAE

Parnara guttulus mangala Moore. A minor leaf defoliator in Java and of no importance in Formosa and Fiji.

Spodoptera exempta Wlk. This was an important leaf defoliator in Hawaii until controlled by imported parasites. It is considered of moderate importance in the Philippines and Queensland.

Spodoptera mauritia acromaticus Guenée. A leaf defoliator of secondary importance in Java, Formosa, Philippines and Queensland but of no importance to cane in Hawaii.

Sesamia inferens Wlk. A top borer of definite importance in Java, Formosa and the Philippines.

Pseudalecia unipuncta Haw. An important leaf defoliator in Java, Formosa, Philippines, Queensland, Fiji and Hawaii; but at present of declining importance in Hawaii.
Cirphis loryt Dup. An important leaf defoliator in Formosa and the Philippines; but of moderate importance in Queensland, Fiji and Java.  

_Pseudaltea ambycasis_ Meyr. A leaf defoliator once considered of minor importance in Hawaii.  

_Pseudaltea macroarisis_ Meyr. A leaf defoliator once considered of minor importance in Hawaii.  

_Moecs frugalis_ F. A leaf defoliator of minor importance in Formosa, Java, Philippines and Queensland.  

_Rivula biocularis_ Moore. A leaf defoliator of minor importance in Formosa.  

_Sessamia uniformis_ Dudg. A top borer of moderate importance in the Philippines. This is also in India.  


_Autocarsia irrorata_ F. A leaf defoliator of minor importance in Fiji.  

_Spodoptera pectin GUENÉE. A leaf defoliator of minor importance in Java.  

_Euxoa interjunctonis_ GUENÉE. A leaf defoliator of minor importance in Java.  

_Phragmatiphila truncata_ Wlk. A borer in young shoots, of importance in Queensland. It is also in New Guinea.  

_Chasaris rhodias_ Turner. A leaf defoliator of minor importance in Queensland.  

_Agrothis epsylon_ Hfn. Sometimes the larvae do considerable damage to germinating sugar cane in Hawaii.  

_Agrothis disloca_ Wlk. A leaf defoliator of minor importance in Hawaii.  

_Agrothis crinigera_ Butl. A leaf defoliator of minor importance in Hawaii.  

**Lymantriidae**  

_Psalis pennatula_ F. A leaf defoliator of minor importance in Formosa and Java.  

_Laelia subrufa_ Sn. A leaf defoliator of minor importance in Java and the Philippines.  

_Laelia adara_ Moore. A leaf defoliator of minor importance in Java.  

_Laelia suffusa_ Wlk. A leaf defoliator of minor importance in Java and the Philippines.  

_Euprostis holoxutha_ Turner. A leaf defoliator of minor importance in Queensland.  

_Euprostis virguncula_ Wlk. A minor leaf defoliator in Java and the Philippines.  

_Euprostis flavula_ Cram. A minor leaf defoliator in Java.  

_Aroa sorus_ Hubn. A minor leaf defoliator in Java.  

**Tiphidae**  

_Ereunetis flavistriata_ Wlsm. Moderately important in Hawaii and Fiji. Feeds on the buds.  

_Trachycentra calamias_ Meyr. A minor, small borer in the stalk in Fiji.  

_Trachycentra chlorogramma_ Meyr. A minor, small borer in the stalk in Fiji.  

**Lyonetidae**  


_Opogona_ sp. A minor bud worm in Queensland.  

_Opogona dimidiatella_ Zell. A minor bud worm in Java and the Philippines.  

**Amathusiidae**  

_Discophora ogina_ Hb. A minor leaf defoliator in the Philippines.  

_Discophora celinde_ Stoll. A minor leaf defoliator in Java.
EUPTEROTIDAE

Dreata petola Moore. A minor leaf defoliator in Java.

COSMOPTERYGIDAE

Cosmopteryx pallifasciella Sn. A leaf miner in Java and the Philippines of minor importance.

Cosmopteryx dulcivora Meyr. A leaf miner of minor importance in Fiji, Queensland, Java and the Philippines.

TORTRICIDAE

Harmologa miserana Wlk. A minor leaf defoliator in Queensland.

GELECHIIDAE

Ephysteris chersaea Meyr. A small borer in young shoots, of minor importance in Queensland.

COLEOPTERA

ELATERIDAE

Lacon musculus Cand. Important in Formosa, where it attacks the seed-pieces and underground parts of the stalk.

Lacon variabilis Cand. Important in parts of Queensland, where it destroys the germinating buds of planted seed-pieces.

Lacon stricticollis Fairm. Of minor importance in Fiji, where it feeds on the buds of planted seed-pieces.

Platyxyrus formosanus Mats. Of minor importance in Formosa, where it attacks the buds of planted seed-pieces.

Melanotus tamsuyensis Bates. Considered important in Formosa, where it feeds on the buds of the seed-pieces.

Agoniscus obscuripes Gyll. Of minor importance in its attack on planted seed-pieces in Formosa.

Sephitus formosanus Schwarz. Reported important in its attack on planted seed-pieces in Formosa.

Simodactylus cinnamomeus Boisd. Listed as important as a destroyer of buds on planted seed-pieces in Fiji. Of lesser importance in Hawaii.

Conoderus exsul Sharp. Of moderate importance in Hawaii, where it attacks the buds of planted seed-pieces.

TENEBRIONIDAE

Eutochia lateralis Boh. Of importance in Java in its damage to planted seed-pieces; but of slight importance in Hawaii and the Philippines.

Opatrum acutangulum Fairm. A minor enemy of roots in Java and the Philippines; but of small importance.

Dasus depressus Fabr. Reported feeding on roots but of little importance. Occurs in Java and the Philippines.

HISPIDAE

Monochirus callicanthus Bates. A leaf miner of minor importance in the Philippines; but of no importance in Formosa.
Asamangulia wakkeri Zehnt. A leaf miner of slight importance in Java and of no importance in the Philippines.

Asamangulia sp. A leaf miner of little importance in Java.

Rhadinosg parvula Motsch. A leaf miner of little importance in Java.

Diadispa armigera Oliv. A leaf miner of little importance in Java and of no importance in Formosa.

**PRIONIDAE**

Dorysthenes hydropicus Pascoe. Important in Formosa, where the larvae bore into young shoots at ground level.

**CURCULIONIDAE**

Tanymecus circundatus Wied. Important through its damage to roots in Formosa.

Baris saccharivora Mats. Causes minor damage to roots in Formosa.

Episomoides albina Mats. Causes important damage to roots in Formosa.

Platyphorus guttatus Mats. Causes minor root damage in Formosa.

Rhynchophorus ferrugineus Oberli. A minor stalk borer in Java and Formosa.

Rhabdoscelus obscurus Boisd. An important stalk borer in Queensland, Fiji and Hawaii. Its presence in Formosa uncertain. It is known in a number of Pacific Islands on coconut and cane.

Trochorrhophalus strangulatus Gyll. A stalk borer of moderate importance in Fiji and the Philippines, though sometimes abundant in cane on Negros Island, Philippines.

Asynonychus godmani Crotch. The adult is a minor leaf defoliator in Hawaii.

**MELOLONTHIDAE**

Ancylonycha geilenkeuseri Brenske. Grubs cause minor root damage in Formosa.

Ancylonycha horishana Niijima & Kinoshita. Grubs cause important root damage in Formosa.

Ancylonycha sauteri Moser. Grubs cause minor root damage in Formosa.

Ancylonycha helleri Brenske. Grubs cause important root damage in Java.

Ancylonycha leucophthalma Wied. Grubs cause important root damage in Java.

Ancylonycha vidua Sharp. Grubs cause important root damage in the Philippines; but of moderate importance in Java.

Microtrichia formosana Moser. Grubs cause minor root damage in Formosa.

Leucopholis irrorata Chevr. Grubs cause important root damage in the Philippines.

Leucopholis rorida Fabr. Grubs cause important root damage in Java.

Apogonia destructor H. Bos. Grubs cause important root damage in Java.

Rhophaea subniter Arrow. Grubs cause moderate root damage in Fiji.

Rhophaea vestita Arrow. Grubs cause important root damage in Fiji sometimes.

Rhophaea consanguinea Blackb. Minor root damage in Queensland.

Dermolepida albohirtum Waterh. Grubs cause serious root damage in Queensland.

Lepidiota stigma Fabr. Grubs cause important root damage in Java.

Lepidiota fronsch Blackb. Grubs cause important root damage in Queensland.

Lepidiota trichosterna Lea. Grubs cause important root damage in Queensland.


Lepidiota caudata Blackb. Grubs cause minor root damage in Queensland.
**ENTOMOLOGY**

*Lepidiota consobrina* Gir. Grubs cause minor root damage in Queensland.
*Lepidiota wilsoni*. Grubs cause minor root damage in Queensland.
*Lepidiota grisea*. Grubs cause minor root damage in Queensland.
*Pseudoholophylla surfuracea* Burm. Grubs cause important root damage in South Queensland.

**Rutelidae**

*Anomala limbifera* Ohaus. Grubs cause important root damage in Formosa.
*Anomala erubescens* Ohaus. Grubs cause minor root damage in Formosa.
*Anomala expansa* Bates. Grubs cause minor root damage in Formosa.
*Anomala cupripes* Hope. Grubs cause minor root damage in Formosa.
*Anomala trachypygus* Bates. Grubs cause minor root damage in Formosa.
*Anomala humeralis* Burm. Grubs cause important root damage in the Philippines.
*Anomala suicatula* Burm. Grubs cause minor root damage in the Philippines.
It is also in the Caroline Islands and Guam.
*Anomala anoguttata* Burm. Grubs cause important root damage in the Philippines.
*Anomala orientalis* Waterh. Grubs caused important root damage in Hawaii until controlled by parasites.
*Mimela testaceoviridis* Blanch. Grubs cause minor root damage in Formosa.
*Adoretus sinicus* Burm. Grubs cause minor root damage in Formosa, Philippines and Hawaii and adults feed on leaves.
*Adoretus versus tus* Har. Grubs reported to cause minor root damage in Fiji.
*Adoretus luridus* Blanch. Grubs cause minor root damage in the Philippines.
*Euchlora pulchripes* Lansb. Grubs cause important root damage in Java.
*Euchlora viridis* Fabr. Grubs cause important root damage in Java.
*Anoplognathus boissiduvali* Boisd. Grubs cause important root damage in Queensland.

**Dy nasi tidae**

*Alissonotum impressicole* Arrow. Grubs cause important root damage in Formosa.
*Alissonotum crassum* Arrow. Grubs cause important root damage in Formosa.
*Alissonotum pauper* Burm. Grubs cause important root damage in Formosa and the Philippines.
*Heteronych us morator* Fabr. Adult causes minor damage by boring in base of young shoots in Java and the Philippines.
*Metanastes vulgiovagus* Olliff. Adult does minor damage to young shoots in Queensland by boring in at base.
*Dasygnathus australis dej eani* Macl. Grubs cause minor damage to roots in Queensland.

**Eumolpidae**

*Rhyparida morosa* Jac. Adult causes minor leaf damage in Queensland.
*Rhyparida limbatipennis* Jac. Adult causes minor leaf damage in Queensland.

**Scolytidae**

*Xyleborus torquatus* Eichh. Adult causes minor damage in Fiji by boring in stalk.
**Nitidulidae**
*Carphophilus humeralis* Fabr. In parts of Hawaii the adults and larvae infest planted seed-pieces and interfere with germination.

**Diptera**

**Stratiomyidae**
*Meloporia rubriceps* Macq. Larvae accumulate about root area and suspected of some importance. Occurs in Queensland.

**Agromyzidae**
*Agromyza panicis* De Meij. A leaf miner of small importance in Java.

**Tipulidae**
*Tipula* sp. Larvae rarely bore in sprouting buds of seed-pieces in Java.

**Acarina**

**Tetranychidae**
*Oligonychus indicus* Hirst. A minor leaf pest in Java, Philippines, Hawaii and Formosa.

*Tarsonemus spinipes* Hirst. A minor pest on the stalk in Hawaii.

**References**