BULLETIN

OF THE

MADRAS GOVERNMENT MUSEUM

EDITED BY
THE DIRECTOR OF MUSEUMS, MADRAS

GRASS-HOPPERS IN THE COLLECTION OF THE GOVERNMENT MUSEUM, MADRAS.

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NEW SERIES—Natural History Section Vol. IX. No. 2

PRICE Rs. 85-00

PREFACE

The different species of the family : ACRIDIIDAE represented in the collection of the Government Museum, Madra have been described in this book after examining and studyinn their external characters. Since some of the species have bee represented only by single specimens, and most of them are dry-preserved ones it was not possible to go into the details of the anatomical and genital structures. Therefore the morphologica characters of the different species were alone studied and examined. To a great extent Mr. Kirby's method of describing the species has been followed as it happened to be the only method possible to work on the Museum collection and material without destroying the valuable specimens there-in. All the photographs and the Indian-ink illustrations used in this book were prepared by the author himself.

My thanks are due to the staff of the Entomology Department Tamil Nadu Government Agricultural College,Coimbatore, Dr.A.R. Seshadri, and, Dr. T. N. Ananthakrishnan, for their guidance and valuable suggestions. I am also thankful to Thiru P. Jawahar, the Curator, and the rest of the staff of the Zoology Section and the staff of the photographic section for the kind co-operation extended to me towards the publication of this bulletin.

I am very much thankful to Dr. A. Daniel, Deputy Director, Zoological Survey of India, Madras for his personal encouragement and kindly furnishing a foreward to this scientific book.

I am highly thankful to Dr. S. T. Satyamurti, the former Director and Thiru N. Harinarayana, the present Director of Museums, Madras, for affording facilities and permitting me to publish this bulletin.

G. KESAVARAM.

FOREWORD

I am highly delighted to see the monumental systematic research work on the Grass-hoppers in the collection of the Government Museum, Madras carried out by Thiru G.Kesavaram, Assistant Director of Museums a id the former Curator, Zoology Section of the above museum. The author has made a thorough study of the external characters of the different available species and conducted some survey tours of important localities in South India before finalising this publication. The family: ACRIDIIDAE which comprises the Grass-hoppers is also interesting to the farmers since many of the species are destroyers of different types of crops. This book on the study of the External Morphology and Ecology of Grass-hoppers, I hope will not only add knowledge to the Systematic Zoology but also serve the Department of Agriculture in controlling these rapidly spreading insect pests.

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C-I 257-2—B

FAMILY ACRIDIIDAE.

INTRODUCTION.

The family Acridiidae with abou t5,000 species, is the largest Orthopteran family and, though found predominently in the hotter regions, includes those familiar to the temperate country side as well as the notoriously destructive locusts. In these insects stridulation takes place in several ways. The best-known method, seen for example in the Sub-family : Acridiinae, is by means of a ridge bearing many small peg-like projections on the inner side of each hind femur which is rubbed against the hardened radial vein of the closed tegmen, thus causing the latter to vibrate and produce a buzzing sound. The males stridulate by day and females of some species can also produce a sound though they possess a some-what reduced *stridulatory apparatus.* In the Sub-family Oedipodinae, stridulation is by the femoro-alary, but the row of peg-like projections lies on the secondary vein near the base of the tegmen and the femur bears a simple longitudinal ridge. Some other Acridids mostly, Oedipodines, are able to stridulate during night, apparently by friction between the hind wings and the under surface of the tegmina. A cracking sound results, which has been compared to that of burning stabble. The auditories are located one on each side of the basal segment of the abdomen. The ovipositor is not conspicuous and its valves are short and curved. By means of the latter organs the female excavates a hole in the ground or more rarely in the decaying wood. The eggs are then deposited (Fedecov, 1927; Shodgrass, 1935) until they form mass of 30 to 100 or more and during the process a glutinous substance or fluid is discharged around them which hardens to form the egg pod (Zimin, 1938; Waloff, 1950)—a water-proof protection, corresponding to the more perfect oothecae of Dictyopteran. Several of these masses are usually deposited by each female and the oviposition period in the Genus; *Melanoplus* extends, according to Riley, over a period of two months. There appears to be four to eight ecdyses in the life of a species and commonly one or two generations in the year. These insects are voracious devovers of vegetation during their young and adult stages. Iseley (1938) has shown that the Acridinae and the Oedipodinae are primarily grass feeders while the Catantopinae eat broad-leaved plants and more selective in their feeding habits.

The Family : Acridiidae are usually divided into about nine-sub-families (Uvarov, 1943). The Oedipodinae or Band winged grass-hoppers are more or less brightly coloured insects often with blue, yellow or red hind-wings crossed by a characteristic black faciae. The tegmina, however, are coloured and when closed the insect hormonises very closely with its environment.

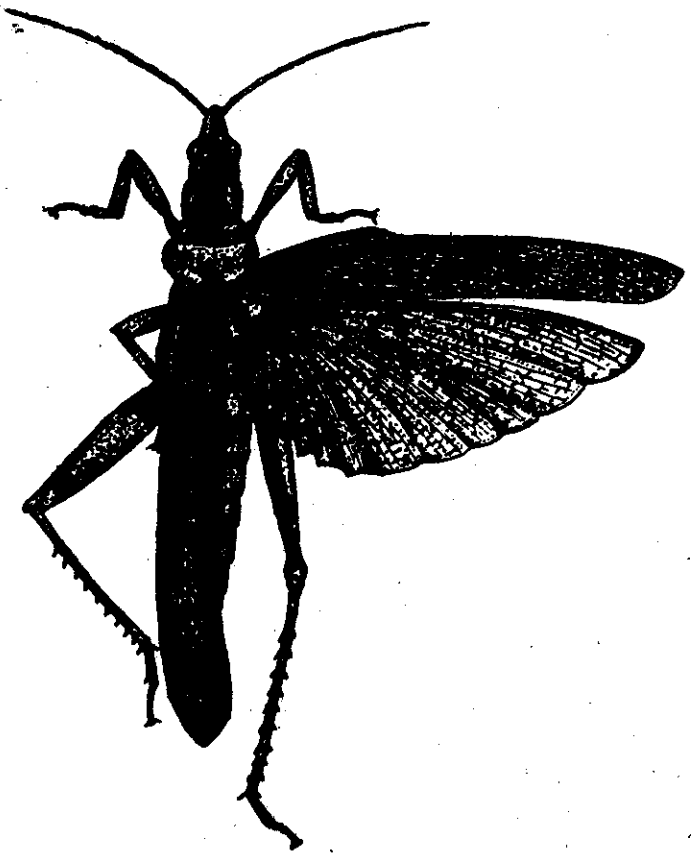
The term locust is correctly given to a few species of Acridids which are capable, under certain conditions not fully understood, of forming large swarms over wide areas causing great devastation of natural and cultivated vegetation where they feed. Uvarov (1921 ; 1928) has proposed a theory that each species of locust can exist in two main forms (phasis) which differ structurally and biologically. These are the gregarious forms or phase (phasis *gregaria*) and the solitary phase (phasis *solitaria*) and the two are often so to have been regarded by earlier taxonomists as separate species. Intermediates (phasis *transiens*) also occur during the transition of a population from one exteme to the other. The solitary phase characterised in its nymphal instars are being variable in colour, green, grey or brown and similar to the colour of its normal environment ; in the adult state, the pronotum is longer and crested while the hind femur is relatively long compared with the fore-wing. In gregaria forms the nymphal colouration is a bold pattern mainly of black and yellow or orange and the adult has a shorter, saddle-shapped pronotum and a relatively shorter hind femur. Biologically the most important difference between the phase is the higher activities and the gregarious tendencies of the *gregaria* phase. This is manifested in the nymphs by their habit of living in large batches which during the latter part of the day, march from place to place. In adults, the gregaria forms occur in large, more or less, dense swarms which may fly over great distances under the influence of the wind until the environment (fall in temperature) cause them to settle. Laboratory studies have shown that nymphs reared in isolated conditions are of the *solitoria* phase while the growing together of many young nymphs results in increased activity which in turn is associated with the development of the black pigment and usually of other characteristics attribute to the gregaria form. Further the high level of activity of the latter is promoted by the higher internal body temperature of the black *gregaria* nymphs which absorb more radient heat than do the green or brownish *solitaria* nymphs. The natural conditions which induce crowding and therefore cause ' gregarization ' and lead to locust plagues which are not completely clear, but in general it appears that the process takes place in restricted regions (out-break areas) where, as a result of flooding, or variable rainfall, the habitat is favourable to breeding are liable to irregularly periodic contractions in size. Swarms, originally in the outbreak areas, invade large regions and when they breed there, may give rise to solitaria or gregaria forms according to local conditions. After few years, however, the area affected by swarms becomes smaller and the locust plague ends. New plagues apparently originate only in the more or less permanent out-break areas and measures designed to prevent gregarization in these places are therefore fundamental to locust control.

The most important of the locust of the Old World are *Locusta migratoria*, with several subspecies, of which the African one has an out-break area in the flood plains of the Middle Niger *Nomadacris septumfasciata* (the Red Locust) with outbreak areas of which are not established with certainity but appear to vary with the rainfall in Pakistan, Arabia and possibly also much further in Africa. Other economically important locusts include the South American *Schistocerca paranensis*, the Meditaranian *Dociostaurus macrocanus* and the Indo-malasian *Patanga succincta*. The history of recent attempt at investigating and controlling the more injurious locusts is summerised by Uvarov (1951) while detailed account of the various aspects of their biology are given in the publication of the Antilocust Research Centre, London, and by Kennedy (1939) ; (1951).

There is a very large literature on Acridiidae, of which important taxonomic papers are those by Bolivar (1909 ; 1916), Brunner (1900–09) and Uvarov (1943) while biological topics are dealt with by Chesler (1938) Islley (1937–44), Tubtzov (1935), Shortwell (1941), Uvarov (1935, 1938, 1948) and others.

Three relatively small families closely associated with the Acridiidae may be mentioned here. The Pheymoridae (Rehn, 1941) include about 20 South African species remarkable for the inflated abdomen of the male which bears stridulatory ridges on the sides of the second abdominal tergum, and the relatively small hind legs. The Eumastacidae (Bolivar, Pieltain, 1930 ; Rehn, 1948) is mainly a tropical group of about 120 species which live among bushes. Oviposition in the soil has been observed in *Erianthus* which has six nymphal instars. The Pcoscopiidae (Mallo-Leitao 1939) consists of about 100 species endemic to South America. They are superficially similar to elongated Phasmids, enjoying a protective resemblance to the vegetation on which they live ; almost all are Apterous and they rarely jump.

In Acridiidae the head is usually short and broad. The compound eyes are placed one on each side, and sometimes approximate, very closely above. More frequently they are separated by a space as great or greater than their diameter, and they are sometimes raised above the level of the head. The head is usually horizontal, but is occasionally obliquely raised. The extremity curves into the face, or is separated from it by a transverse carina not unfrequently it is more or less produced between and beyond the antennae, and this prolongation is called the *Fastigium*. (The extreme apex of the fastigium is sometimes called the *scutellum of the vertex*).

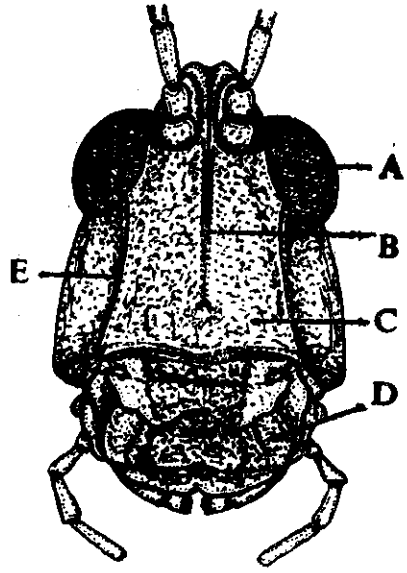


A

I DORSAL VIEW: WITH THE WINGS SPREAD OUT ON ONE SIDE.

II LATERAL VIEW.

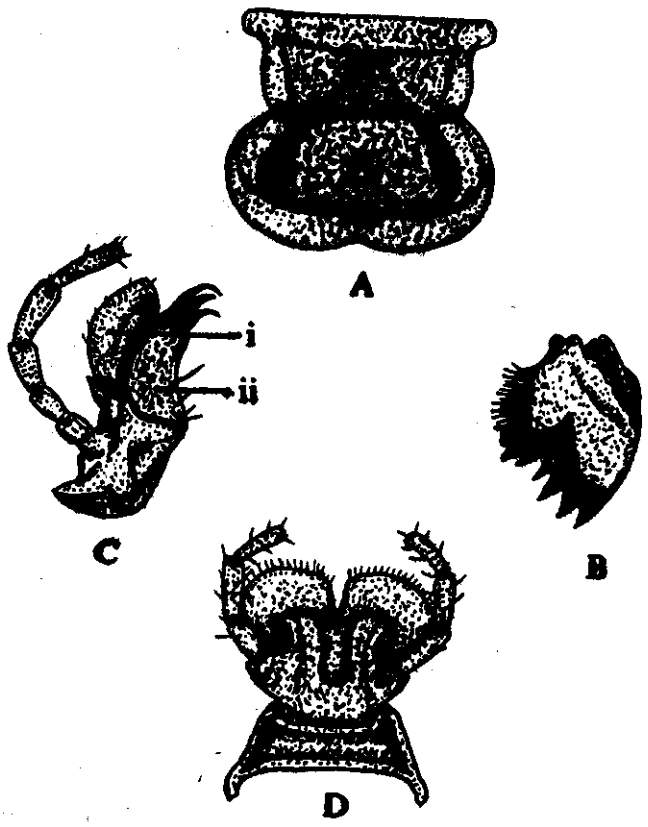
The antennae are generally placed between or below the eyes. There are usually three ocelli or simple eyes, the lateral ones placed between the eyes and the antennae and the middle one on the frontal ridge. The *frontal ridge* is the central part of the face. It is generally raised by a carina of each side. These carinae often curve outwards above each eye, and below the antennae they may either run parallel as far as the extremity of the lower part of the face (the Clypeus) or they may become obsolete below the level of the antennae or may diverge leaving a more or less triangular space. The middle of the frontal ridge is often more or less thickly punctured and is often deeply grooved; sometimes, however, it is flattened throughout with the carinae rarely marked. Under each eye there is frequently another straight or oblique carina, the lateral carina.



III PARTS OF THE HEAD.

A : COMPOUND EYE
B : FRONTAL RIDGE
C : CLYPEUS
D : MANDIBLE
E : LATERAL CARINA

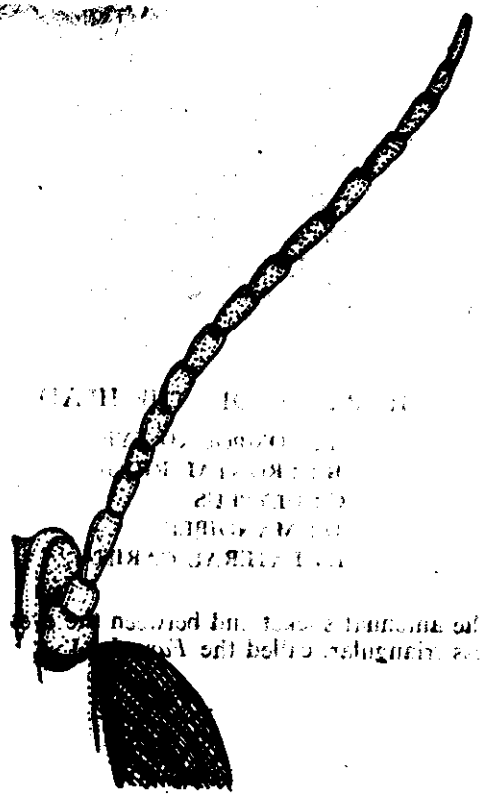
(On each side above the antennal socket and between the eyes and the fastigium, there is a space generally more or less triangular, called the *Faveolae*.)



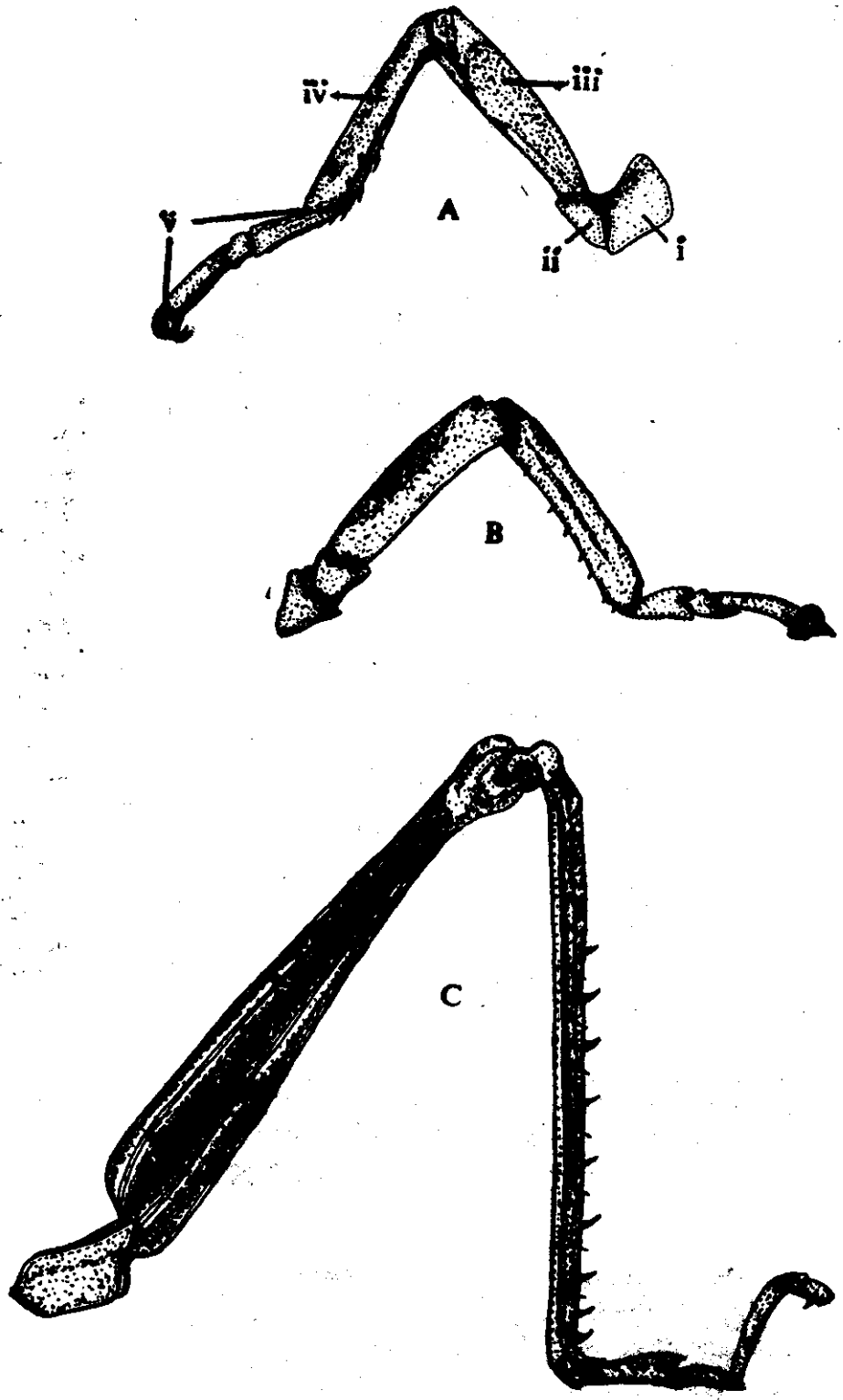
IV MOUTH PARTS.

A : LABRUM
B : MANDIBLE
C : MAXILLA—(i) GALEA (ii) LACINIA
D : LABIUM

The mandibles are strong pointed or bifid at the extremity, occasionally with a tooth or several teeth on the inner edge. The *maxillae* have a fleshy *galea*, which more or less wr asp round the lacinia; the later is curved and bifid, or may have three teeth at the apex. The *palpi* are of moderate length, with joints. The *labium* which in the MANTIDAE is extremely primitive and shows the maxilla-like structure, most distinctly is much modified in the ACRIDIIDAE, the *paraglossa* being greatly developed and the *Ligula* much reduced. The intermediate form is seen in Agroecia, one of the PHASGONURIDAE. The labial palpi are simple, and three jointed. The *labium* is leathery in texture and to a considerable extent shut in the mouth parts.



V POSITION OF THE ANTENNA AND ITS DIVISIONS.



VI A, B, C : THORACIC LEGS.

i COXA, ii TROCHANTER, iii FEMUR, iv TIBIA, v TARSUS.

The antennae are comparatively short with not more than twenty-four joints. The first or *scape*, is generally stouter and longer than second which is often more or less globular and is sometimes called the ring-joint. The remaining joints from the *flagellum* are sometimes long and uniformly cylindrical; sometimes the flagellum is much thickened towards the base and tapers more or less towards extremity; and more rarely the joints of the flagellum are flattened or some of the terminal joints are expanded or even form a club.

The pronotum is generally as broad as the head and its front edge slightly overlaps it. It is usually truncated or rounded behind, but is sometimes continued into a long process posteriorly especially in the ACRIDIINAE in which it frequently extends not only beyond the abdomen

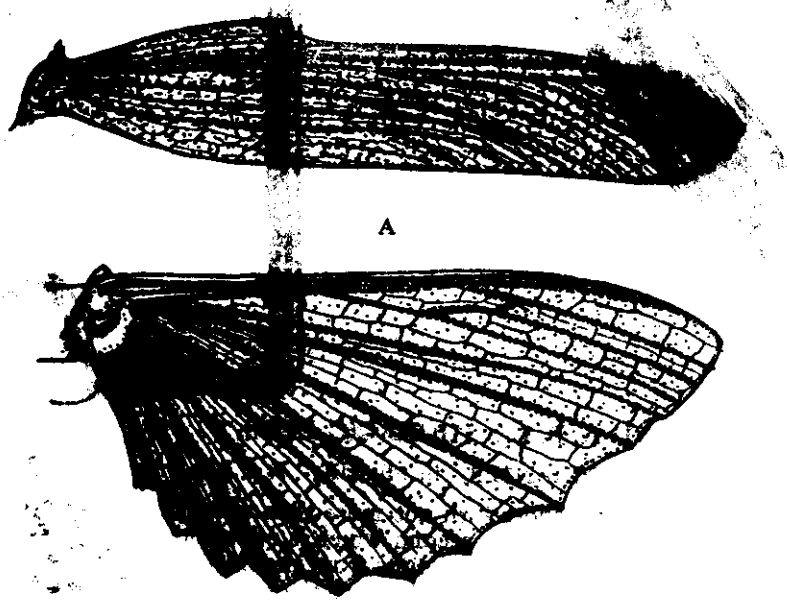
but even covers the whole of the wings. Pronotum above is sometimes flattended, in which case there is generally a central carina and two lateral carinae. In other cases the pronotum is cylindrical and arched above; when the lateral and sometimes the central are absent. Occassionally the central carina is raised into a ridge or humped and the spines project from the sides. On the upper surface of the pronotum we frequently meet with three or four transverse depressions or grooves, the position and extent of which is of some importance in classification, as it is also the shape of the deflexed lobes on the sides of the pronotum. (When there is a central carina it is sometimes complete, sometimes it is cut by one of the transverse grooves, and in some cases by two grooves.)

Behind the pronotum we find the mesonotum and metanotum followed by the nine segments of the abdomen. The first segment bears a curious structure on each side which is regarded as an organ of hearing. (It consists of a cavity covered by a transparent membrane filled with liquid and is connected with a nerve originating in the third thoracic ganglion.) Each segment, except the ninth is provided with a spiracle on each side. There is frequently a central carina and sometimes a row of teeth on the upper surface. In the male the 9th ventral segment forms a structure, called the *subgenital lamina* which is often bifid. There are also two terminal appendages called *cerci*, In the female the last segment bears two upper and two lower laminae or valves, which are often dentate and differ considerably in size and shape.

(Characters of importance for purposes of classification are found in the sterna. The prosternum may be simple or provided with a strong spine or tubercle which varies much in form. The mesosternum and metasternum have lobes on each side of the posterior margin, the shape and extent of which are of importance.)

The leg consists of five distinct sections, known as the coxa, trochanter, femur, tibia and tarsus. The front and middle legs are generally much shorter than the hind legs and much less strongly developed, though their femora are not unfrequently more or less widened or flattered and sometimes toothed or spined. The hind fermora are generally much thickened at the base, enabling the insect to leap.

The tibiae and tarsi are also frequently thickened and laminated, but more rarely the tibiae have nearly always a double row of spines on the upper surface, and two or more spines at the extremity, called *calcaria or spurs*. In the ACRIIDIDAE the tarsi are three-jointed, and first joint is generally the longest, and is frequently provided with three pads called *pulvilli* on the under surface. The last joint terminates in two claws, between which is a pad called the *arolium* (wanting in the ACRIDINAE) a word from which the origin could be discovered. The *tegmina* of the ACRIDIIDAE are generally compared long and narrow of a parchment-like consistency, and not folded. Many species have them much abbreviated in which case they are most commonly oval or elliptical and in some cases they are absent. They are usually more or less opaque, especially towards the base.



A

B

A: FOREWING.
B: HINDWING.

The wings are usually almost equal to the tegmina in length but are much broader and longitudinaly folded. In most cases they are hyaline or glossy, with darker nervures but are sometime stained with red or yellow or more rarely with blue or green. The nervuration will be better understood from the diagram than the description.

SYSTEMATIC LIST OF GRASS-HOPPERS IN THE COLLECTION OF THE GOVERNMENT MUSEUM, MADRAS.

Family ACRIDIIDAE.

Sub-family ACRIDIINAE.

Genus Scelimena, Serville.
Scelimena harpago, Serville.
Genus Systolederus, Boliver.
Systolederus, greeni, Bolivar.
Genus Mazerredia, Bolivar.
Mazerredia cristulata, Bolivar.
Genus Euparatettix, Hancock.
Euparatettix variabilis, Bolivar.
Euparatettix scaber, Thunberg.
Euparatettix corpulentus, Hancock.
Euparatettix personatus, Bolivar.
Genus paratettix, Bolivar.
Paratettix cingalensis, Walker.
Paratettix indicus, Bolivar
Genus Ergatettix, Kirby.
Ergatettix tarsalis, Kirby.
Genus Hedotettix, Bolivar.
Hedotettix attenuatus, Hancock.
Genus Coptotettix, Bolivar.
Coptotettix testaceous, Bolivar.

Sub-family TRYXALINAE.

Genus Acrida, Linnaeus.
Acrida turrita, Linnaeus.
Acrida lugubris, Burr.
Acrida exaltata, Walker.
Genus Acridella, Bolivar.
Acridella nasuta, Linnaeus.
Genus Paraphlaeoba, Bolivar.
Paraphlaeoba carinata, Bolivar.
Genus Aeolopus, Fieber.
Aeolopus tamulus, Fabricius.
Aeolopus affinis, Bolivar.

Sub-family OEDIPODINAE.

Genus Chloebora, Saussure.
Chloebora grossa, Saussure.
Genus Pternoscirta, Saussure.
Pternoscirta cinctifemur, Walker.
Pternoscirta bimaculata, Thunberg.
Genus Morphacris, Walker.
Morphacris citrina, Kirby.
Genus Lerina, Bolivar.
Lerina oedipodioides, Bolivar.
Genus Dittopternis Saussure.
Dittopternis zebrata, Saussure.
Genus Oedaleus, Fieber.
Oedaleus abruptus, Thunberg.
Genus Gastrimargus, Saussure.
Gatrimargus transversus, Thunberg.
Genus Locusta, Linnaeus.
Locusta danica, Linnaeus.
Genus Trilophidia, Stal.
Trilophidia annulata, Thunberg
Trilophidia turpis, Walker.
Genus Acrotylus, Fieber.
Acrotylus humbertianus, Saussure.
Genus Sphingonotus, Fieber.
Sphingonotus indicus, Kirby.

Sub-family PYRGOMORPHINAE.

Genus Chrotogonus, Serville.
Chrotogonus incertus, Bolivar.
Chrotogonus trachypterus, Blanchard
Chrotogonus oxypterus, Blanchard.
Chrotogonus saussurei, Bolivar.
Chrotogonus brachypterus, Bolivar
Genus Aularches, Stal.
Aularches milaris, Linnaeus.
Aularches scabiosae, Fabricius.
Genus Poecilocerus, Serville.
Poecilocerus pictus, Fabricius.
Genus Pyrgomorpha, Serville.
Pyrgomorpha brachycerca, Kirby.
Genus Atractomorpha, Saussure.
Atractomorpha crenulata, Fabricius.
Atractomorpha scabra, Thunberg.
Genus Orthacris, Bolivar.
Orthacris ruficornis, Bolivar.
Orthacris elegans, Bolivar.
Orthacris acuticeps, Bolivar.
Orthacris simulans, Bolivar.

Sub-family CATANTOPINAE.

Genus Oxya, Serville.
Oxya velox, Fabricius.
Genus Hieroglyphus, Krauss.
Hieroglyphus banian, Fabricius.
Genus Spathosternum, Karsch.
Spathosternum prasiniferum, Walker.
Spathosternum venulosum, Stal.
Genus Orthacanthacris, Karsch.
Orthacanthacris flavescens, Fabricius.
Orthacanthacris nigricornis, Burmeister.
Orthacanthacris violescens, Walker.
Genus Cyrtacanthacris, Walker.
Cyrtacanthacris rosea, De, Geer.
Cyrtacanthacris ranacea, Stall.
Genus Chondracris, Brunn.
Chondracris rosea, Uvarov.
Genus Schistocerca, Stal.
(or)
Gregaria, Forsk.
Schistocerca tatarica, Linnaeus
Genus Pelecinotus, Bolivar.
Pelecinotus brachypterus, Bolivar.
Pelecinotus cristagalli, Bolivar.
Genus Teratodes, Brulle.
Teratodes monticollis, Gray.
Genus Eucoptacra, Bolivar.
Eucoptacra premorsa, Stall.
Genus Catantops, Schaum.
Catantops acuticercus, Bolivar.
Catantops splendens, Thunberg.
Catantops humilis, Serville.
Catantops indicus, Bolivar.
Genus Brachyxenia, Kirby.
Brachyxenia scutifera, Walker.
Genus Heteracris, Walker.
Heteracris capensis, Thunberg.
Genus Tylotropidius, Stal.
Tylotropidius varicornis, Walker.
Genus Euprepocnemis, Fieber.
Euprepocnemis alacris, Serville.
Euprepocnemis pulchra, Bolivar.
Genus Paraeuprepocnemis, Brunner.
Paraeuprepocnemis pictipes, Bolivar.

SYSTEMATIC ACCOUNT.

FAMILY ACRIDIIDAE.

The Family ACRIDIIDAE includes the familiar Grass-hoppers and the notoriously destructive Locusts. Many of the Acridids are pale brown in colour and match with the colour of the soil surrounding them or the brown stems on which they sit. These insects have typical Orthopteran mouth parts such as the labrum, mandibles, maxillae and the labium. Head, thorax and abdomen are distinct in these insects. Two parts of wings are normally present and they are attached to the Meso and Meta-thoracic segments. Out of the three pairs of legs the last pair or the pair nearer to the abdomen are much longer and help in hopping from one place to another. The Acridids are predominently found in hotter regions and temporate country side among the grasses or crops.

The Family Acridiidae is divided into the following Sub-families:—

Sub-family ACRIDIINAE.
Sub-family EUMASTACINAE.
Sub-family TRYXALINAE.
Sub-family OEDIPODINAE.
Sub-family BATRACHOTETRIGINAE.
Sub-family PYRGOMORPHINAE.
Sub-family PAMPHAGINAE.
Sub-family CATANTOPINAE.

Sub-family ACRIDIINAE.

The Grass-hoppers included in this Sub-family possess a pronotum which is always produced backwards over the abdomen. The claws of the tarsi are not provided with an arolium or intermediate pad.

Genus **Scelimena**, Serville.

Scelimena, Serville, Ins. Orth. 1839, p. 762.
Scelimena, Bolivar, Ann. Soc. Ent. Belg. xxxi, 1887, pp. 184, 193, 215 ;
Scelimena, Hancock, Spol. Zeyl. ii. 1904, pp. 107, 118, 154.
Scelimena, Kirby, Gen. Ins. Orth. Tetrig. 1906, pp. 21, 23.
Scelimena, Sassure, Ann. Soc. Ent. France, (4)i. 1861, pp. 484.
Scelimena, Bolivar, Ann. Soc. Ent. France, IXX, 1902, pp. 581.
Scelimena, Kirby, Fau. Brit. Ind., Orth., 1914, pp. 21.

Antennae are inserted directly below the eyes. Borders of the hind tibiae and of the first joint of the hind tarsi are provided with wide lamellar expansions. Pronotum is very long and projecting greatly beyond the abdomen.

Body is rugose ; pronotum is usually much produced ; antennae are inserted in front of and below the level of eyes ; upper ocelli are slightly in front of the eyes ; frontal carinae are only slightly divergent below the eyes, produced, united below the frontal ocellus and suddenly forking at the lower extremity. Antennae are slender, filiform and uniform in thickness throughout. Eyes are large, prominent, raised above the vertex. Body is above with a slight carina, throughout granulated, and pronotum more or less rugose ; posterior angles are provided with a strong spine, curving outwards and more or less forwards. Tegmina are oval, rounded at the extremity ; wings large, considerably longer than broad. Femora are frequently dentated beneath ; hind tibiae and first joint of hind tarsi strongly lamellated.

The species of Scelimena differ considerably. They are aquatic in habit and their lamellated hind legs are doubtlessly employed as oars.

Scelimena harpago, Serville.
(Fig. No. 1).

Tetrix harpago, Serville, Inst. Orth (1839) pp. 763.
Tetrix harpago, Bolivar, Ann. Soc. Ent. Belg. xxxi. pp. 216, 217, pl. iv, Fig. 13.
Scelimena harpago, Mam. Dept. Agri. India, iv. 1912, pp. 132.
Scelimena harpago, Hancock, Rec. of Ind. Mus. xi. 1915, pp. 65.
Scelimena harpago, Uvarov. Spol. Zeyl. xiv. (1927), pp. 113.
Scelimena harpago, Kirby, Faun. Brit. Ind. (1914), pp. 23.

The hind femora are strongly spined beneath. The lateral lobes of pronotum possess only one spine and this spine is nearly straight. The lamellae of hind tibiae and the first joint of the hind tarsi are very wide and hyaline.

The whole body is dull brownish-black in colour and thickly granulated upto the thoracic segments. The eyes are large, prominent, separated by less than half their diameter ; between them runs a double carina. Antennae are black with white incisions placed considerably below and in front of the level of the eyes. Pronotum is broader than the head, with the front lateral angles obtusely rounded ; hinder angles having a strong yellow spine. Two short subsidiary carinae, one on each side of the median carina, are present at the base of the pronotum. Behind the level of the lateral spine the pronotum is raised. The pronotum tapers to the extrimity which is identical and extends to about one-fourth of its length beyond the abdomen. Front legs are black and its tibiae and tarsi are spotted with yellow ; front femora being slightly marked with two teeth above and below. Middle legs are black and possess sometimes teeth above, but bears two strong yellow teeth below. The hind femora possess a varying number of large and small yellow teeth beneath and the first joint of tarsi has a membrane on the whole of its length, forming a long oval structure. The second joint of the tarsi is of equal length. Tegmina are of oval shape, measuring about twice as long as broad and slightly narrowed towards the extremity. The wings are considerably longer than broad, hyaline, with a slightly bluish irredescence in fresh condition, brown along the costa, hind margins crenulated.

The only one specimen available in the collection of this museum was collected during 1932 and the locality from where it was collected is not known. The measurements of the specimen are shown in the illustration.

This species is found on the grassy regions in and around Bombay, United Provinces and Madras

Genus Systolederus, Bolivar.

Systolederus, Bolivar, Ann. Soc. Ent. Belg. xxxi. 1887, pp. 185, 194. 234.
Systolederus, Hancock, Spol. Zeyl. ii. 1904, pp. 108, 136.
Systolederus, Hancock, Gen. Ins. Orth. Tetrig. 1906, pp. 30,33.
Systolederus, Kirby, Faun. Brit. Ind. Orth. 1914, pp. 44.

Pronotum possesses no acute lateral spines. The vertex is narrower than half the width of the eye.

Head is considerably higher than the pronotum. Eyes are larger, closely approximating above, and higher than the vertex. Antennae are slender and placed below the level of the eyes with the frontal carina slightly projecting between them. Pronotum is flattened above, acuminate behind and extends considerably beyond the hind femora. Median carina is indistinct, except in front. Tegmina is oval and the wings are as long as the pronotum. The front and middle pairs of legs are simple and the hind tibiae are spinose, the terminal spines being small. The first and third joints are of nearly equal length.

Systolederus greeni, Bolivar.
(Fig. No. 2.)

Systolederus greeni, Baliver. Ann. Soc. Ent. France, ixx, 1892, pp. 584.
Systolederus greeni, Hancock, Spol, Zeyl. ii, 1904, pp. 108, 137, 155, pl. ii, fig. 9.
Systolederus greeni, Gen. Ins. Orth. Tetrig. 1906, pp. 34, pl. ii, fig. 14
Systolederus greeni, Kirbi, Faun. Brit. Ind. Orth. 1914, pp. 45.

The body is of moderate size having a greyish brown colour. Eyes are much elevated and they are separated above by the median carina of the vertex. Antennae are inserted below the eyes with the frontal carina slightly projecting between the shoulders and very slightly raised. The lateral angles of the pronotum are almost rounded off with the median carina strongly marked, straight in front, less conspicious and undulating behind, the lateral carinae are absolate in front and before the extremity. The hinder process of pronotum extends considerably beyond the hind femora are slightly bifid at the extremity. The legs are more or less varied with grey, the front and the middle pairs of legs are compressed and simple. The hind femora are longer than the third. The first two pulvilli are of equal length and the third being considerably longer.

Twelve specimens of this species collected from Dhoni forest are represented in the wet collection of this museum. The date of collection is not known. This species is usually found on dry rocks away from moist area during January and March. They are distributed in the grassy crevices of the rocks in some parts of South India and Ceylon.

Genus Mazarredia, Bolivar.

Mazarredia, Bolivar, Ann. Soc. Ent. Belg. xxxi, (1887) pp. 185, 194, 236.
Mazarredia, Hancock, Spol. Zeyl. ii, (1904) pp. 108, 136.
Mazarredia, Kirby, Gen. Ins. Orth, Tetrig (1906) pp. 32, 42.
Mazarredia, Kirby, Faun. Brit. India. 1914 pp. 50.

Vertex is about as broad as the eye. Body is stout and the posterior angle of the lateral lobes of pronotum is truncated.

Head is not prominent. Vertex is about as wide as one of the eyes, often narrow in front, on each side with an oblong more or less compressed carina; face is slightly oblique. Frontal carina is scarcely forked behind the eyes, scarcely diverging in front, some times found slightly projecting between the antennae which are long and slender and slightly inserted in front of the eyes. The maxillary palps have the terminal joints narrow and compressed. Pronotum is smooth above, truncated in front and often humped between the shoulders with obtuse angles and the apex long and pointed. Hind margin of the lateral lobes are more or less laminated externally, distinctly truncated and acutely angulated, but not spinose and very rarely depressed. Tegmina is ovate, Wings are perfectly developed. Legs are long with front femora somewhat compressed and carinated above. The carinae are entire or slightly wavy. Hind tibiae are slightly expanded towards the tips and spinose. First and third joints of hind tarsi are of equal length.

Mazarredia cristulata, Bolivar.
(Fig. No. 3)

Mazarredia cristulata, Bolivar, Ann. Soc. Ent. France, ixx, 1902, pp. 584.
Mazarredia cristulata, Hancock, Rec. Ind. Mus. Xi, (1915) p. 102.
Mazarredia cristulata, Kirby, Faun. Brit. Ind., Orth., 1914, p. 52.

The median carina is crested or sinuated behind the shoulders and with a high crest.

The head is not raised and the body is of dark greyish brown in colour. The vertex is broader than the eye, but not narrowed in front; produced in the middle in front, the sides deflexed at an angle. The eyes are prominent. Frontal carina is compressed between the antennae; the median carina is crested or sinuated behind the shoulder and it also possesses a high raised crest. Pronotum is depressed, granulated, the median carina raised into an entire compressed crest on the front margin. It is not crenulated, wavy and sinuated behind the shoulders. The hinder process of the pronotum is very long with the hinder angle of the lateral lobes forming a short, narrow, rounded, oblique lobe. Tegmina are ovate and impresso-punctate. The wings are as long as the pronotum, brown externally with transverse pale nervures. The front femora are compressed, with granulated carina. The intermediate femora above the carina are compressed, granulated with a lobate crenulated carina towards the tip beneath. The upper carina of the hind femora is almost entire, crenulated with a row of raised tubercles, on the upper outer area. The tibiae are nearly straight and brownish, with the tip ferruginous, third joint of the hind tarsi are shorter than the first with the third pulvillus produced.

The only one specimen represented in the musuem collection was acquired from among the damp rocks in North Arcot on 8th September 1920. This species is found distributed in the Western Ghats of South India.

Genus Euparatettix, Hancock.

Euparatettix, Hancock, Sopl. Zeyl. ii, (1904) pp. 108, 111, 145.
Euparatettix, Hancock, Gen. ins. Tetrig. 1906, pp. 51, 55.
Euparatettix, Trans. Ent. Soc. Lond; 1907, pp. 238.
Euparatettix, Hancock, Rec. Ind. Mus. xi, 1915, pp. 124.
Euparatettix, Kirby, Faun. Brit. Ind., Orth. 1914, pp. 57.

Vertex and the eyes obviously are raised above the level of pronotum. The posterior femora are without conspicuous nodules on the outside.

Head is slightly raised. The vertex is rather narrow than the eye and elevated forward. Antennae are moderately long, inserted scarcely below the eyes. Pronotum is granulated with the lateral lobes rounded off. Median and lateral carinae are strongly developed, the basal carinae shorter. Pronotum is longer than the hind femora, but shorter than the wings. Tegmina are oval and granulated. Anteriror femorae are almost entire and hind femorae spinulose. First and third joints of hind tarsi are of nearly equal length. The pulvillus is nearly as long as the other two.

Keys to the species.

1. Middle carina of the pronotum is continuous to form front margin. A short raised line is present on each side between the shoulders and curved.	*variabilis*, Bolivar.
2. The pronotum is finely granular. The wings are slightly longer than the pronotum and projects out by about 1 m. m.	*scaber*, Thunberg.
3. The pronotum is feebly granular. The wings are longer than the pronotum and projects out by about 5 m. m. The carina is well marked and much elevated which extends throughout the length of the pronotum.	*corpulentus*, Hancock.
4. Frontal carina is rounded. Mediun carina of pronotum is well marked.	*personatus*, Bolivar.

Euparatettix variabilis, Bolivar.
(Fig. 4)

Paratettix variabilis, Bolivar, Ann. Soc. Ent. Belg. xxxi 1887, pp. 276, 277.
Euparatettix variabilis, Hancock, Mem. Dep. Agri. Ind. iv, (1912), pp. 150.
Euparatettix variabilis, Hancock, Rec. Ind. Mus. (1915), pp. 126.
Euparatettix variabilis, Morgan Hebard, Spol. Zeyl. xvii, (1932), pp. 26.

Body is brown and slightly rugose. Vertex is narrower than the eye, carinated in front on each side and the frontal costa is arched and found projecting between the eyes. Pronotum is much produced and its back is smooth, the middle carina being acutely compressed in front, with a raised line on each side of the disc between the shoulders. The tegmina are rounded at the tips. Wings are longer than the pronotum by 2 or 3 mm. Front femora are provided with the straight carina; middle femora are long and linear and the hind tarsi have two basal pulvilli which are acutely pointed at the tip, the third pulvillus is slightly longer than the second.

There are 3 (three) specimens of this species in the museum collection and they were collected during October 1932. The place of collection is not known. They are found distributed in the hilly forests of South India and Burma.

Euparatettix scaber, Thunberg.
(Fig. 5)

Euparatettix scabripes, Bolivar, Ann. Mus. Geneva xxxix, 1898 pp. 76.
Euparatettix scabripes, Bolivar, Ann. Soc. France, 1902, pp. 585.

The body is reddish brown and minutely granulose. Head is slightly raised. Vertex is rather narrower than the eye, separated behind from the occiput by transverse folds and slightly narrowed in front. The median carina is slender and abreviated behind, with a raised carinula on each side below the eye. Pronotum is finely granulose in texture, rather convex before and between the shoulders, middle carina subcompressed, undulated, the process at the base slightly exuvated the laterel carina granulose, when seen from above distinctly expanded and undulated. Tegmina are oblong and punctured. Wingrs are longer than the pronotum and varied outwardly with brown. Front femora are slightly wavy above; middle femora with the carina compressed and dialated, wavy ciliated beneath; hind femora are short, upper carina crenulated towards the tip, lobate, outer surface with rather compressed prominent ridges; the first joint of the hind tarsi is longer than the third; pulvilli are acute with the third shorter than the two basal ones together.

Only one specimen of this species is represented in the museum collection. It was collected on 19th October 1919. This species is found distributed in South India, East Bengal and Sumatra.

Euparatettix corpulentus, Hancock
(Fig. 6)

Euparatettix corpulentus, Hancock, Mus, Dept. Agri. Ind. iv, 1912, pp. 153.
Euparatettix corpulentus, Hancock, Rec. Ind. Mus. 1915, pp. 126.

Body is somewhat small as in the above species, with reddish brown colour. Head is slightly arised with the vertex some-what narrower. Pronotum is feebly granulated and projects out of the body behind. The Tegmen is small and oval. Wings are longer than the pronotum and project but of the pronotum by 5 mm. Hind femora are longer and stouter than the front two. Hind tibia is as long as the femur with 7 or 8 spines arranged on the upper carina and terminating in in obtuse tooth near the apex.

Two old incomplete, broken specimens of this species are represented in the museum collection. The date and place of collection are not known. This species is rarely distributed in South India and Ceylon.

Euparatettix personatus, Bolivar.
(Fig. 7)

Paratettix personatus, Bolivar, Ann. Soc. Ent. Belg. xxxi, 1887, pp. 188, 278.
Euparatettix personatus, Hancock, Spol. Zeyl. ii. 1904, pp. 108, 145, 146, 155, 156, 196 pl. ii. fig. 10. pl. iii. fig. 20.
Euparatettix personatus, Hancock, Gen. Ins. Orth. Tetrig. 1906, pp. 55. pl. iii. fig. 3.
Euparatettix personatus, Hancock, Trans. Ent. Soc. Lond. 1908, pp. 409.
Euparatettix personatus, Hancock, Spol. Zey. iv. 1910, pp. 148.
Euparatettix personatus, Hancock, Rec. Ind. Mus. 1915, pp. 125.
Euparatettix personatus, Candell, Proc. of the U.S. National Mus. Art. 3. 1927, pp. 22, 23.
Euparatettix personatus, Hebard, Spol. Zeyl. 17, pp. 26, 1932.
Euparatettix personatus, Kirby, Faun. Brit. Ind. Orth. 1914, pp. 58.

Body is rugose and reddish brown. Antennae are slightly longer. Head is prominent. The vertex is raised in front, narrower than the eye, the frontal costa is strongly arched in front end slopping at the base. Pronotum is narrow and pointed at the extremity and generally produced beyond the towards hind femur, but shorter than the wings. Median carina is complete and strongly marked, the hinder angle of the lateral lobes narrowly rounded. Tegmina are oval and rounded at the tips. Front-femora are slender and almost entire. Tibiae and tarsi are mostly blackish. Hind tibiae are blackish, often provided with spines. Pulvilli of first joint of hind tarsi are straight beneath the third, not much longer than the second.

Eight specimens of this species are represented in the museum collection. All of them were collected during 1932. This species is found frequently on grass lands and rice fields in South India and Ceylon.

Genus Paratettix, Bolivar.

Paratettix, Bolivar, Ann. Soc. Ent. Belg. xxxi, 1887, pp. 187, 195, 270.
Paratettix, Hancock, Spol, Zeyl, ii. 1904, pp. 108, 110, 144.
Paratettix, Hancock, Gen. Ins. Orth. Tetrig. 1906, pp. 52, 55.
Paratettix, Facobs & Bianchi, Pram. Loznos. Ross. Imp, 1902, pp. 175, 211.
Paratettix, Trans. Ent. Soc. Lond., 1907, pp. 236.
Paratettix, Kirby, Faun. Brit. Ind. Orth. 1914, pp. 60.

Pronotum is very long and rather narrow, the posterior prolongation is very narrowly cruciform possessing subparallel sides. Vertex and eyes are very little raised above the level of the pronotum. Vertex is narrower than the width of the eye.

Body is slighlty rugose, granulose and slightly narrow behind. Vertex is not broader than the eye horizontally, carinated in the middle, more or less concave on the sides, bounded in front by sinuous carinulae and scarcely produced between the eyes. Frontal carina is curved between the eyes, sloping towards the base and rarely sinuated. Antennae are filiform, long, 14-jointed, placed slightly below the eyes. Palpi are not dilated and they are concolorous. Pronotum is rather flattened, truncate in front and generally produced beyond the hind femorae. The middle carina is slightly raised with the lateral lobes bisinuated behind. The lower sinus is straight or pointed with the tips rounded off and the hind lateral angles turned down. Tegmina are oval and punctured. Wings are generally longer than the pronotum. Front femorae are compressed carinated above and usually undulated. The third hind apical tibiae are distinctly expanded and spinose. The first joint of the hind tarsi is longer than the third. The pulvilli are acuminate, flattened below, and third pulvillus is generally longer than the first two together.

Paratettix cingalensis, Walker.
(Fig. 8)

Tettix cingalensis, Walker, Cat. Derm. Salt. B.M,v, 1871, pp. 827.
Paratettix variegattus, Bolivar Ann. Soc. Ent. Belg. xxxi, 1887, pp. 188, 272, 280.
Paratettix variegattus, Hancock, Spol. ii, 1904, pp. 108, 144.
Paratettix cingalensis, M. Hebard, Spol, Zey, xvii, 1932, pp. 26.
Paratettix cingalensis, Kirby, Faun. Brit. Ind. Orth., 1914, pp. 63.

Body is brownish in colour. Head is raised with the vertex truncated in front which is as abroad as the eye. The frontal costae are sloping towards the base in front. Pronotum is much longer than the hind femora, rugulose, punctate, and sometimes spotted. The middle carina is compressed, continuous and strongly marked, raised and regularly arched in front. A short carina is present on each side along the anterior margin of the front lobe. Each carina is followed by a short transverse one. Lateral carina are incurved in front and with a short carina thrown off opposite the curve. Hind lobes of the lateral angles are narrowly round and truncate at the tips. Wings are hyaline, brown on the costa with indistinct pale spots towards the extremity and they are much longer than the pronotum. Front femora are slightly wavy. Hind femora are crenulated above, with a small lobe before the tip. Tibiae are pale, spotted with brown. Hind tibiae are spined Pulvilli are at the tips, the third being longer than the second.

Only one specimen is represented in the museum collection. The place and date of collection of this specimen is not known. It is usually found on dry shrubs and grassy lands in South India and Ceylon.

Paratettix indicus, Bolivar.

(Fig 9.)

Paratettix indicus, Bolivar, Ann. Soc. Ent. Belg. xxxi, 1887, pp. 188, 272, 281.
Paratettix indicus, Bolivar, Ann. Soc. Ent. France, lxx, 1902, pp. 585.
Paratettix indicus, Kirby, Faun. Brit. Ind. Orth., 1914, pp. 64.

Body is pale reddish brown in colour. Vertex is slightly narrowed in front. The frontal costa is somewhat sinuated behind the antennae and slightly produced before the eyes. Pronotum is smooth, rather depressed and very obtusely tectiform with the middle carina only slightly raised. The carina on the femora are entire. The pulvilli of the hind tarsi are sharply pointed and the third pulvilus is longer than the first two together.

Only one specimen is represented in the wet collection and it was collected from Ganjam. The date of collection is not known. Its distribution has been recorded from China and South India.

Genus Ergatettix, Kirby.

Ergatettix, Kirby, Faun. Brit. Ind. Orth. 1914, pp. 69.

Eyes are normally prominent, separated by a space equal to nearly one of them. Antennae are slender, moderately long, inserted just below the eyes, beneath which the front projects slightly Pronotum is somewhat rugose, the median carina being distinct, undulating and extending beyond the hind femora and the abdomen which are of equal length, but rather shorter than the wings. Beyond the level of the abdomen the pronotum is very slender. The femora of the front and middle legs are compressed and widened towards the base. Hind tibiae are provided with the terminal spines. First joint of the hind tarsi is much longer than the third, with four moderate equal pulvilli beneath.

Ergatettix tarsalis, Sp. Nov.

(Fig. 10.)

Ergatettix tarsalis, Kirby, Faun, Brit. Ind. 1914, pp. 70.

The body is somewhat of small size with dark brown or reddish brown colour. In a fresh specimen the pronotum possesses a pale transverse black band, or two large spots just behind the level of the hind coxae. Hind femora often possess one or two black spots above towards the extremity. Hind tibiae are black with two white bands.

Only one specimen of this species collected from Chilka lake, Barkuda is represented in the wet collection. This is somewhat a rare species and is found haunting the vicinity of water among the grasses. This is rarely found in Bengal during certain wet seasons.

Genus Hedotettix, Bolivar.

Hedotettix Bolivar, Ann. Soc. Ent. Belg. xxxi, 1887, pp. 188, 195.
Hedotettix, Hancock, Spol, Zeyl, ii, 1904, pp. 108, 111, 148.
Hedotettix, Hancock, Gen. Ins. Orth. Tetrig., 1906, pp. 52, 60.
Hedotettix, Trans. Ent. Soc. Lond., 1907, pp. 240.
Hedotettix, Hancock, Rec. Ind, Mus., 1915, pp. 116.
Hedotettix, Kirby, Faun. Brit., Ind., 1914 ,pp. 71.

Vertex is as wide or wider than the eyes. Wings are well developed.

Body is slender, brownish, nearly smooth or only slightly granulated. Head is not prominent. Vertex is as wide or wider than the eye, carinated in the middle, generally expanded and transversely carinated in front with frontal costa arched between the antennae, and not situated between the eyes. Antennae are filiform, rather short, not signated between the eyes. Pronotum is truncate and obviously angulated in front, long and pointed behind. The median carina is slightly compressed and continuous. Hinder angles of the tegmina are rounded at the tip and sometimes pointed. Wings are generally as long as the pronotum. Legs are compressed. The femora are entire or indistinctly undulated. The hind femora possess granulated carina. The tibiae are regularly spined. The first joint of the hind tarsi is long and the third joint is shorter than the first.

Hedotettix attenuatus, Hancock.

(FIG. 11.)

Hedotettix attenuatus, Hancock, Spol. Zeyl, ii, 1904, pp. 108, 141, 151, pl. iii, FIG. 18.
Hedotettix attenuatus, Hancock, Gen. Ins. Orth. Tetrig., 1906, pp. 60 fig. 23.
Hedotettix attenuatus, Hancock, Rec. Ind. Mus., 1915, pp. 123.
Hedotettix attenuatus, Uverov, Spol. Zeyl, xiv, 1927, pp. 114.
Hedotettix attenuatus, M. Hebard, Spol. Zeyl., xvii, 1932, pp. 27.
Hedotettix attenuatus, Kirby, Faun, Brit, Ind., Orth, 1914, pp. 73.

Body is considerably small and slender with a shade of light green and when fresh a broad longitudinal stripe of emerald green runs along the back. The vertex is narrower than the eyes. The median carina of the pronotum is hardly compressed. Legs are compressed. The front femora are indistinctly undulated. The hind femora are grunulated on the carina.

Only one specimen of this species is represented in the collection. It was collected during 1922 and the place of collection is not known. It is found on the green bushes along the Western Ghats of South India and in Ceylon.

Genus Coptotettix, Bolivar.

Coptotettix, Bolivar, Ann. Soc. Ent. Belg, xxxi, 1887, pp. 188, 195, 287.
Coptotettix, Hancock, Gen. Ins. Orth. Tetrig. 1906, pp. 52, 65.
Coptotettix, Hancock, Spol. Zeyl, ii, 1904, pp 108, 111, 152.
Coptotettix, Hebard, Spol. Zeyl. xvii, 1932, pp. 26.
Coptotettix, Hancock, Rec. Ind. Mus. 1915, pp.116.
Coptotettix, Kirby, Faun, Brit, India, Orth. 1914, pp.. 74.

Pronotum is only tectiform at its widest part. The median carina is very fine and the marginal carinae are also on the same level as the median carina.

Body is brownish, granulated or less rugose. Head is not prominent. The vertex is smooth and narrowed in front. The frontal carinulae are interrupted internally or recurved. The frontal costa is rounded and somewhat produced. Antennae are long, filiform and inserted between the eyes. Pronotum is truncated in front and produced behind as far as the hind femora or very long and pointed. The median carina is almost always depressed and very rarely rigid. Tegmina is oblong. The wings are often abbreviated. Front femora are generally long with paralled carinae. The hind femora are long with the carinae entire or crenulated. The first joint of the hind tarsi is longer than the third.

Coptotettix testaceus, Bolivar.

(FIG. 12.)

Coptotettix testaceus, Bolivar, Ann. Soc. Ent. Belg. xxxi, 1887, pp. 189, 288, 291.
Coptotettix testaceus, Hancock, Spol. Zeyl, ii, 1904, pp. 108, 153.
Coptotettix testaceus, Hancock, Rec. Ind. Mus., 1915, pp. 121.
Coptotettix testaceus, Kirby, Faun., Brit, Ind, 1914, pp. 77.

Body is small, brown, with slightly yellow shade (testaceous yellow). Head is not prominent. Vertex is not narrower than the eye when seen from above. The frontal costa is arched and slightly sinuated before the median ocellus. Antennae are inserted between the eyes. Pronotum is produced beyond the abdomen, rather convex between the shoulders with the round tubercles, depressed before the shoulders, with the frontal marginal, lateral carinae short. The hind part of the pronotum contains scattered elongated wrinkles and the lateral lobes are triangular at the hinder ends, with the tip narrowly sub-truncate. Tegmina are oblong with the tips rounded. Wings are well developed. Femora are banded with brown, narrow and long with the carinae, slightly wavy. Hind femora are strongly granulose. The front joint of the hind tarsi is much longer than the third and distinctly serrulated above. The third pulvillus is shorter than the first two.

Only one specimen of this species is represented in the collection. The date and place of collection are not known. It is found distributed in the woods of South India and Ceylon.

Sub-family TRYXALINAE.

The antennae are longer than the front femora. The prosternum is unarmed. Fastigium of the vertex is horizontally produced or sloping beneath and forming an angle with the frontal ridge.

Genus Acrida, Linnaeus.

Gryllus, Linnaeus, Syst. Nat. (ed. x), 1758, pp. 427.
Truxalis, pt. Fabricius, Syst, Ent., 1775, pp. 279.
Tryxalis, Bulle, Hist. Nat. Ins. 1835, pp. 216.
Tryxalis, Serville, Ins. Orth., 1339, pp. 578.
Tryxalis, Bolivar, Focaelie Jeunes Mat. xxiii, 1893, pp. 161.
Acrida, Stall, Recuns, Orth. i, 1873, pp. 88.
Acrida, Burr, Trans, Ent., Soc. Lond., 1902, pp. 149, 155.
Acrida, Kirby, Faun, Brit, Ind., Orth., 1914, pp. 97.

Head is conically ascending. Fastigium is broad, laminate and truncate at the extremity. The eyes are near the apex. The sexes are similar externally. Front margin of tegmina is opaque and densely reticulated.

Head is elongated and sloping upwards. Fastigium of the vertex extends considerably in front of the eyes. It is broader than the space between them and roundly truncate at the extremity. Beneath the extremity there is a double carina, traversing up to the end of the clypeus, and enclosing the median ocellus. Below the eyes, and about 2/3 of the length from the tip of the fastigium are antennae which are short, broad, depressed and tapering. Behind each antenna runs a lateral carina below the eye and there are two more behind each eye, besides a slight median carina. The faveolae of the vertex are small, triangular and inferior. Pronotum is tricarinate above and with obscure carinae on the sides. Lateral carinae are straight, atleast on the front area, the upper carina of the lateral lobes being parallel to the dorso-lateral carina, or slightly diverging from it towards the front border. Tegmina and wings are long, narrow and pointed. Tegmina are similar in both the sexes, i.e., with the mediasternal and scapular areas not expanded and irregularly reticulated and coloured. The third radial nervure of the tegmina and the first branch of the radial nervure of the wings are branching at or before the middle. Front legs, the hind legs and abdomen are long. Hind tibiae are provided with the upper interior spur nearly one-half shorter than the lower one. Claws of the lower tarsi are short with the arolium large.

Keys to the species.

1 Wing-cells are not centred with fuscous. Body and tegmina are without pinkish markings. Pronotum is without black lines. — *turrita*, Linn.

♀ Tegmina are very narrowly edged with pinkish-brown colour. Wing-cells are centred with ♂ fuscous. — *lugubris*, Burr.

Tegmina are without coloured margin. Length of the body is usually 50 mm. .. .. .. *exaltata*, Walk.

Acrida turrita, Linnaeus.
(Fig. 13.)

Gryllus Acrida turrita, Linnaeus, Sys, Nat. (ed, X), 1758, pp. 427.
Gryllus Acrida nasutus, pt. Linnaeus, Mus, Ludov. Ulnic, 1758, pp, 118
Truxalis nasutus, Fabricius, Syst, Ent., 1775, pp. 279
Acrida turrita, Kirby, Trans. Ent. Soc. Lond,, 1902, pp. 61
Acrida turrita, Kirby, Faun, Brit, Ind. Orth, 1914, pp. 98

Body is green in colour. Tegmina are long, narrow and pointed, extending beyond the abdomen when closed. Head is slender and longer than the pronotum by the length of the fastigium in front of the eyes. Wings are hyaline and pointed at the exremity.

One good specimen and two damaged and discoloured ones are represented in the dry collection. The places and dates of collection are not known. This species is found among bushes and shrubs in small woody regions. It is found distributed in South Africa and throughout Asia.

Acrida lugubris, Burr
(Figs. 14 & 15.)

Acrida lugubris, Burr. Trans, Ent. Soc. Lond., 1902, pp. 157, 170
Acrida lugubris, Kirby, Faun,, Brit, Ind,, Orth., 1914, pp. 99

Body is thin, elogated and green in colour. Head is only slightly longer than the pronotum and the antennae are about as long as the head and pronotum together. Tegmina are green, hardly longer than the wings and moderately pointed ; often narrowly bordered with pink, and with a few dusky spots towards the extremity. Wings are hyaline and tessellated with brown.

Four old and one disoloured specimens of this species are available in the dry collection. It is found distributed throughout the Madras State and some parts of Kashmir.

Acrida exaltata, Walker
(Figs. 16 & 17.)

Truxalis exaltata, Walker, Ann. Nat. Hist. (3) iv. 1859, pp. 222
Tryxalis brevicollis, Bolivar, Feuille, Feunes. Nat, xxiii, 1893, pp. 162, 164
Tryxalis brevicollis, Bolivar, Ann. Soc. Ent. France ixx. 1892 pp. 588
Acrida brevicollis, Burr. Trans, Ent, Soc. Lond., 1902, pp. 157, 170
Acrida exaltata, Kirby, Faun. Brit. Ind. Orth., 1914, pp. 99
Acrida exaltata, Uvarov, Spol. Zeyl., xiv, 1927, pp. 97

This species resembles the previous species in size and colour. Head and pronotum are of about equal length. Tegmina are obtusely pointed, scarcely longer than the hind femora. Wings are yellow, hyaline and the cells in the posterior part cloudy.

Three adults and four juvenile specimens of this species are represented in the dry collection, out of which three only are complete. This species is also found in the same vicinity as the previous species.

Genus Acridella, Bolivar.

Acridella, Bolivar, Feuille, Jeunes. Nat. xxiii, 1893, pp. 163.
Acridella, Kirby, Faun, Brit. Ind., Orth, 1914, pp. 100

From the margin of the tegmina in the male it is partly transparent and traversed by regular transverse nervures. Sexes are not similar.

The genus-Acridella resembles the genus-Acrida in general characters, but the tegmina are differently formed in each sex. In the males the mediasternal and the scapular areas are enlarged towards the middle of the tegmina, and their spaces are usually transparent, and traversed by more or less regular nervures. The third radial nervure of the tegmina and the first branch of the radial nervure of the wings branch beyond the middle of the tegmina and the wings respectively. The lateral carinae of the pronotum are flexuous and curved upwards in front, being convex and divergent towards the metanotum. The upper inner terminal spur of the hind tibiae is one half shorter than the lower inner spur. The claws of the tarsi sometimes half as long as the third joint of the tarsi. The arolium is small. The wings are generally brightly coloured always with the transverse nervures thickened.

Acridella nasuta, Linnaeus.
(Figs. 18 & 19.)

Gryllus Acrida nasutus, Linnaeus, Syst, Nat. (ed, x), 1758, pp. 427.
Truxalis scalaris, Klug, Symb. Phys, 1830, pl. xv. fig. 2–4,.
Truxalis miniata, Klug, Symb, Phys, 1830, pl. xviii, fig, 3, 4 (nec, 1, 2),.
Truxalis variablis, Klug, Symb. Phys., 1830, pl, xvii, fig, 3–6.
Truxalis procera, Klug, Symb, Phys., 1830, pl, xvi, fig. 2, 3.
Truxalis conspurcata, Klug, Symb. Phys., 1830, pl, xvii, fig, 1.
Truxalis unguiculata, Rambur, Faun, Andal, ii, 1839, pp. 72.
Acrida nasuta, Stal, Ricins, Orth, i, 1876, pp. 99.
Acridella nasuta, Kirby,, Faun, Brit, India, Orth,, 1914, pp, 100.
Acridella nasuta, Uvarov, Trans., Ent., Soc. Lond., 1924, pp, 415.

Body is rather slender and coloured greenish brown. Head and pronotum are darker above han on the sides. Head is as long as or longer than the pronotum, and the fastigium contains a central ridge. Pronotum is considerably raised behind with the lateral carinae edged with black. Median carinae are almost obsolete and when seen laterally are found two wavy carinae on the upper part of the plura, and on the hinder half an oblique white line below them. Antennae are broadly flattened, tapering at the extremity. Tegmina are narrow, pointed, longer than the wings, green with the costal area subhyaline especially in the male ; a brown bar, undulated above, and followed by the detached spots running longitudinaly through the middle of the wings. The inner marginal area is often reticulated with reddish colour in the tegmen of the male. Wing are moderately broad, pointed at the tips, hyaline or yellowish hyaline, with all the oblique nervures tessellated with black. The basal half of the wing of female is red and often in the male and its extreme base being marked with a bluish tinge.

Seven specimens of this species are represented in the dry collection. Most of them are collected from South India and the dates of collection are not known. This species is usually found sitting on the brownish-green twigs or the bushes in the hilly regions. It is distributed throughout India, Ceylon, Burma, South Europe, Africa, Western Asia, etc.

Genus Paraphlaeoba, Bolivar.

Paraphlaeoba, Bolivar, Ann, Soc. Ent, France, ixx, 1902, pp, 592, 593
Paraphlaeoba, Kirby. Faun, Brit., Ind., Orth, 1914, pp. 108.

Lateral carinae of the fastigium are acute. Foveolae are absent. Pronotum is truncate behind. Tegmina are lanceolate.

The carinae of the vertex are acute without foveolae. The pronotum is truncated both in front and behind. The rudimentary tegmina are more or less pointed.

Paraphlaeoba carinata, Bolivar.
(Fig. 20.)

Paraphlaeoba carinata, Bolivar, Ann, Soc, Ent, France, ixx, 1902, pp. 593, 594.
Paraphlaeoba carinata, Kirby, Faun. Brit, ind. Orth, 1914, pp. 108.

Body is greyish brown with grey pubescence. Frontal ridge is sulcated, nearly up to the base, indistinctly punctured towards the clypeus, Fastigium of the vertex is convex, triangular, with no transverse sulcus; median carinae are not intersected in front. The surface of the pronotum is nearly smooth with the metazona impress-punctate. The lateral carinae are parallel, pale interrupted by the usual sulcus and bordered with brown externally, the lateral margin sinuated in front, and roundly subangulated in the middle. Tegmina are extending to the first segment of the abdomen, acutely lanceolate, rather convex, with the lower margin more or less sinuated before the tip and reddish-brown beneath. Wings are rudimentary. A broad brown band is seen on either side of the abdomen. Internally this brown band is lined with yellow shade.

Only one specimen of this species is represented in the collection. This specimen was collected from Anaimalai on 26th October 1967. This is found among the dry twigs and distributed in many parts of Madras State.

Genus Aeolopus, Fieber.

Aeolopus, Fieber, Lotos. iii, May 1853, pp. 100.
Aeolopus, Fieber, Sys, Eur, Orth, 1854, pp. 11.
Epacromina, Fischer, Orth, Eur., Nov, 1853, pp, 296., 300.
Aeolopus, Kirby, Sys. Cat. Orth, iii, 1910, pp. 120,
Aeolopus, Kirby, Faun. Brit, Ind., Orth., 1914, pp. 121.

Intercalated vein is present in the middle of the cell or nearer the radial vein.

Vertex is triangular, extending as far in front of the eyes and the length of the head behind, concave above, the foveolae being longer than broad, punctured and not continous. The front is continuous, but rarely sulcated, lateral carinae running from below the antenna to the clypeus, and a short carinae running obliquely forwards below the eye. Cheeks are more strongly punctured than the rest of the face. Antennae are filiform and rather longer than the head and pronotum. The pronotum is constricted in front and tricarinate, with the lateral carinae incurved, slightly marked, generally with a pale border. Three sulcei are present, the hinder most only cutting the median carina and placed a little before the middle of the pronotum. Tegmina are long, obtusely rounded at the extremity with the mediasternal nervure extending to the tip and the mediasternal area expanded at the base and traversed by an accessory nervure. Wings are sufficiently broad, ra her shorter than the tegmina, and subhyaline. Hind femora are slender, as long as the abdomen, red or yellow, with dark bands or spots. Tibiae are red or blue with yellow and brown bands and spines. Hind tibiae have small aroli. The first abdominal segment is provided with an open tympanum. The supra-anal lamina in the male is divided from the anal segment by a transverse sulcus. The anal segment is longitudinally sulcated and the lamina is rounded. Valves o fthe ovipositor are rather long, free and unarmed.

Keys to the species.

Apical half of the hind tibiae is red	*tamulus.*
Apical half of the hind tibiae is blue	*affinis.*

Aeolopus tamulus, Fabricius.
(Figs. 21 & 22.)

Gryllus tamulus, Fabricius, Ent. Syst. supp. 1798, pp. 195,
Gryllus dorsalis, Thunberg, Mem. Acad. Petersh, v, 1815, pp, 229,
Gamphocerus tricoloris, Burmeister, Handh. Ent., ii, 1838, pp, 649.
Epacromia simulatrix, Walker, Cat. Derm Salt., B.M, iv, 1870, pp, 773.
Epacromia tamulus, Bolivar, Ann. Soc., Ent., France, IXX, 1901, pp. 600.
Aeolopus tamulus, Kirby, Faun. Brit. Ind., Orth, 1914, pp, 122.
Aeolopus tamulus, Uvarov, Spol, Zeyl, xiv, 1927, pp. 99.

The body is of moderate size and it is coloured some-what greenish brown with two parallel brown stripes on the vertex, running within each eye to the back of the head and a broad brown band running from the back of each eye to the end of the pronotum, and extending over more or less of the pleura which is then marked with several white spots. Upper side of the dark band is generally broader with a slender white line in front, which afterward inter-sects it, turning obliquely outwards. Tegmen is rather long, varied with brown and subhyaline. The mediasternal area possess two alternate long brown and whitish spaces and the outer-most of each is broader. Below the first brown space runs a bright green stripe to the first white stripe and below the green stripe are often seen some small white spots on the light srown background. The outer part of the tegmen is subhyaline, more or less spotted with brown. The wings are greenish hyaline, more or less dusky towards the hind margin. Hind femorae are vlender, as long as or longer than the abdomen and greenish yellow or reddish, banded transbersely with brown. Hind tibiae are yellow towards the base, with a black spot before and behind, blue towards the middle, and red towards the apical half.

Only one specimen is represented in the dry collection and its place and date of collection are not known. It is found distributed throughout the Madras State on dry grass lands.

Aeolopus affinis, Bolivar.
(Figs. 23 & 24.)

Epacromia affnis, Bolivar, Ann. Soc. Ent. France, ixx, 1902, pp. 600.
Aeolopus affinis, Kirby, Faun. Brit. Ind. Orth., 1914, pp. 122.

Body is of moderate size as in the other species and is slightly darker rufous brown in colour. Antennae are very short and thin. Scutellum of the vertex is subtriangular, obtusely rounded off in front. The costal ridge is flattend and punctured. The pronotum with the median carina is considerably expanded beyond the middle, the sutures being indistinct and the hinder border obtusely angulated. The abdomen is yellowish with irregular rows of dark dorsal spots. The hind femora are rather short and broad, yellowish, banded with dark brown. The hind tibiae are reddish towards the base, with the apical half blue. Tegmina extend one-third beyond the hind femora and subhyaline, varied with darker and lighter shades of brown and also with yellowish and whitish spots along the costa. Wings are greenish hyaline.

Two old specimens of this species are represented in the dry collection, one of which was collected during 1930. The place of collection is not known. Usually it is found on the grass lands and mainly distributed in Madras and Bombay States and rarely found in other parts, in between these two States.

Sub-family OEDIPODINAE.

The fastigium of the vertex is rounded towards the front which is nearly vertical. The front costa is obtuse. The posterior tibiae are deprived of spines and the second abdominal segment is smooth.

Genus Chloebora, Saussure.

Chloebora, Saussure, Mem. Soc. Geneve, xxviii, (9), 1884. pp. 54, 132.
Chloebora, Saussure, Mem. Soc. Geneve, xxx, (1), 1888, pp. 18, 19, 33.
Chloebora, Bolivar, Ann. Soc. Ent. France, ixx, 1902, pp. 604.
Chloebora, Kirby, Faun. Brit. Ind., Orth., 1914, pp. 130.

The body is robust. The tegmina are relatively broad with square or oblong cells.

The body is robust. Antennae are filiform, moderately thick, as long as the head and pronotum together in the female, and rather longer in the male. Vertex is slopping into the clypeus, with scarcely an indication of a division. The face is quadricarinate, the central pair commencing on the inner side of the upper surface of the eyes, curving inwards within the antennae and running downwards without extending to the end of the clypeus. The outer carinae running from the eyes opposite the antennae curve forwards and backwards to the outer lower corner of the clypeus. Pronotum is provided with a strongly raised median carina and it is not divided by the slightly indicated sulci, with the hinder extremity subtriangular and obtusely truncated at the end. The lateral lobes of the pronotum are higher than the length with the front and hind borders nearly parallel and the lower margin convex. Tegmen is long, nearly parallel sided, slightly expanded on the costa near the base, opaque and very thickly reticulated beyond the middle, the outer area being subhyaline and more or less closely reticulated. The wings are sufficiently broad, rather shorter than the tegmina, opaque at the base and hyaline on the margins. Hind femora are thick, moderately long, very slightly serrulated on the upper carinae. Hind tibiae are spinose and puberscent. Mesosternal lobes are separated by a wide oval space between the narrowly curved foveolae at the extremity of the mesosternum.

Chloebora grossa, Saussure.
(Figs. 25 & 26)

Chloebora grossa, Saussure, Mem. Soc. Geneva, xxviii (9), 1884, pp. 132.
Chloebora grossa, Saussure, Mem. Soc. Geneva, xxx (1), 1888, pp. 33.
Chloebora grossa, Bolivar, Ann. Soc. Ent., France, ixx 1902, pp. 604.
Chloebora grossa, Kirby, Faun. Brit. Ind., Orth. 1914, pp. 130.

Body is brownish grey with slight yellow tinge. Head is large, smoother at the sides and the face is verctical and slightly arched. Vertex is broad between the eyes and is carinated at the base of its scutellum, which is smooth and broadly truncated in front. The facial ridge is punctate rugulose, subparallel-sided, and slighly narrowed by the vertex. The temporal region is triangular and lanceolate. The pronotum is indistinctly tuberculated in front and middle of the central area, obtusely angulated anteriorly, and bluntly rectangular behind. The median crest is continuous, subocular (seen laterally), tectiform in the front area, very slighly intersected by the principal sulcus. The lateral lobes are smooth between the sulci and sparingly punctured. The

lower margin of these lobes are arched with the front margin oblique or slightly sinuated. Tegmina extend as far as the middle tibia mottled with black towards the base with the apical hyaline and reticulated. The ulnar area of the tegmen is much broader than the median area, with an incomplete arched intercalated nervure. Wings are (?) yellow at the base, hyaline beyond, with a narrow brown marginal border. Hind legs are long with their femora obsoletely banded with brown ; its lower margin arched, the upper being very finely serrulated and the basal half dilated. The hind tibiae are red with a pale ring at the base. Arolia are small and membranous. Ten spines, (5 large and 5 rudimentary,) are present in the outer row of the hind tibia.

Only one specimen is represented in the dry collection. The place and date of collection are not known. It is found distributed in South India and the foot of Himalayas amon he grass lands.

Genus Pternoscirta, Saussaure.

Pternoscirta, Saussure, Mem. Soc. Geneva, xxviii (9), 1884, pp. 52, 127.
Pternoscirta, Saussure, Mem. Soc. Geneva, xxx (1), 1888, pp. 18.
Prionista, Stal (nec Leach), Recens, Orth. i, 1873, pp. 116, 127.
Pternoscirta, Kirby, Faun. Brit. Ind., Orth., 1914, pp. 134.

Transverse veins of the apical part of the tegmina are oblique and arranged zig zag.

The body is rugose with a short head. The carinae found on either side of the frontal ridge are not very prominent, and strongly approximating between the antennae. Tegmina are brown varied with paler markings on the basal half, then with a large subhyaline patch, and more or less varied with brown and subhyaline beyond, the veins being arranged in oblique quadrilaterals, angulated towards each other at the longitudinal nervures. Wings are often coloured at the base with no central black band ; hyaline beyond the middle, with the dusky colour. Legs and the under-surface of the body are pilose.

Keys to the species.

Wings are red at the base	—*cinctifemur*, Walker.
Apical half of the tegmina, contains only a row of brown spots near the front margin.	—*bimaculata*, Thunberg.

Pternoscirta cinctifemur. Walker.
(Figs. 27 & 28)

Acridium cinctifemur, Walker, Ann. Mag. Nat. Hist. (3), iv. 1859, pp. 223.
Oedipoda saturata, Walker, Cat. Derm. Salt. B.M. iv, 1870, pp. 740.
Pternoscirta saturata, Saussure, Mem. Soc. Geneve, xxx (1), 1888, pp. 36.
Pternoscirta humbertiana, Saussure, Mem. Soc. Geneve, xxxiii (9), 1884. pp. 127.
Pternoscirta cinctifemur. Kirby, Faun. Brit. Ind. Orth., 1914. pp. 134.

Head and pronotum are tranulose ,brown mottled with pale markings. The abdomen is somwhat blackish. A continuous median carina is present which extends the pronotum and the abdomen. Pronotum is slightly produced and obtusely rounded behind. Tegmina are narow, brown, slightly expanded on the costa near the base and rounded at the extremity, two large pale spaces—one just beyond the costal expansion, and the other paler just beyond the midale with the basal area closely reticulated and speckled with grey and the outer area being brown, varied with subhyaline spaces, often obliquely reticulated and forming a short transverse lines. Wings are reddish-rose in colour on the basal half, then clouded hyaline, darker towards the margins, which become brown towards the apex and sometimes forming two irregular spots Hind femora are buff or bluish grey outside with small dark brown spots. It is banded with dark brown above and on the inner side, with two pale bands before the black knees. Hind tibiaeare black, banded with yellow at the base and blue beyond, with nine spines. Hind tarsi are yellow.

Only one specimen is repesented in the dry collection. Its date and place of collection are not known. It inhabits open grassy lands and distributed thtoughout South India and Ceylon.

Pternoscirta bimaculata, Thunberg.
(Figs. 29 & 30)

Gryllus bimaculatus, Thunberg, Mem. Acad. Petersh, v, 1815, pp. 23[illegible].
Epacromia turbata, Walker, Cat. Derm Sal. B.M. Iv, 1870, pp. 776.
Acrotylus humbartianus, Saussure, Mem. Soc. Geneve, xxviii (9), 1884, pp. 187, 189
Pternoscirta bimaculata, Kirby, Faun. Brit. Ind., Orth ,,1914, pp. 136.

Body is considerably small with the surface greyish, tawny brown, whitish beneath and pubescent. Scutellum of the vertex is provided with black carinae and terminating in a transverse carina. Frontal ridges are sulcated, punctured, and with the cheeks granulated. Pronotum is short, with a blackish band behind the eyes, extending over a great part of the pleura, but divided by a large triangular pale spot in front and a large round one in the middle. The lobes are deflexed and much higher than long. Abdomen is mostly black above. Tegmina are brown with the apical half containing only a row of brown spots near the front margin and the area hyaline. Wings are subhyaline, with the base yellow, the costa being brown beyond the middle portion, and the marginal half clouded with brown, except below the dark costal line. Front legs are yellow, ringed with black. Hind femora are banded with dark brown and yellow. Hind tibiae are dark brown at the base and possessing nine black-tipped spines.

Five specimens are represented in the collection, out of which three are old ones, fresh one collected from Anaikatti on 26th October 1966 and the other one from Walayar collected on 27th October 1966. This species is found on the open grass-lands and distributed throughout South India and Ceylon.

Genus Morphacris, Walker.

Morphacris, Walker, Cat. Derm. Salt. B.M. iv ,1870, pp. 700.
Cosmorhyssa, Stal, Recens, Orth. i, 1873, pp. 116, 121.
Cosmorhyssa, Saussure, Mem. Soc. Geneve, xxviii (9), 1884, pp. 50, 123.
Cosmorhyssa, Saussure, Mem. Soc. Geneve, xxx (1), 1888, pp. 18, 37.
Morphacris, Kirby, Faun. Brit. Ind., Orth, 1914, pp. 137.

Pronotum is well-marked with median carina and with numerous rugae.

Body is somewhat small size, normally with light yellowish brown colour and slightly long and slender. Scutellum of the vertex is depressed with a median carina, terminating in front in a slight ridge between the antennae. The costal ridge is slightly prominent, and sulcated. The lateral carinae are obsolete. Pronotum is provided with the median carina which is strongly marked. The principle sulcus is indistinct and placed considerably before the middle and behind it are several strong continuous carinae on each side. Tegmina are long, narrow slightly expanded on the cost towards the base, the post-radial area extending to the middle. Wings are yellow or red at the base, seperated by a dark band from the outer hyaline area. Femora are long, rather short, and not serrulated.

Morphacris citrina, Kirby.
(Figs. 31 & 32)

Morphacris citrina, Kirby, Sys. Cat., Orth. iii, 1910, pp. 219.
Cosmorhyssa sulcata, Saussure, (nec. Thunb), Mem. Soc. Geneve, xxviii (9), 1884, pp. 124.
Cosmorhyssa sulcata ,Sausrure, Mem. Soc. Geneve, xxx (1), 1888, pp. 37.
Morphacris citrina, Kirby, Faun. Brit. Ind., Orth., 1914, pp. 137.

Body is somewhat smaller with uniformly light brown colour. Head is brown, darker above and along the frontal ridge. The upper part of the sides of the face, below the eyes and to the end of the clypeus besides the costal ridge is yellowish. Pronotum is brown with a blackish-brown band on the pleura, marked below with a raised yellow line. Abdomen is yellow with a shining black spot above near the base. Legs are brown with two longitudnal black bands covering much of the surface. Hind tibiae are yellow with a dark band near the base. Tegmina are brown, paler towards the inner margin, on which a few dark dots are visible. The outer area is subhyaline, slightly shining and reticulated with square cells. Hind wing is sulphur yellow at the base, bordered by a broad blackish brown band and the outer area being hyaline and somewhat clouded towards the extremity.

Two specimens are represented in the dry collection and the dates and places of collection are not known. This species is usually found among the open grass-lands jumping from one place to another. It is widely distributed throughout India, Ceylon, Syria and Abbyssinia.

Genus Lerina, Boliver.

Lerina Bolivar, Ann, Soc. Ent., France, Ixx, 1902, pp. 602.
Lerina, Kirby, Faun, Brit, Ind., Orth., 1914, pp. 138.

Internal calcaria of the posterior tibiae are usually equal. Tegmina are narrow with square or elongated cells, and two yellowish white bands across.

Body is light yellowish-brown in colour and very slender. Head is smooth, front shining, with the frontal ridges sulcated. Tempora are trigonal, lanceolate extending to the tip of the vertex, with the ridges acute, Scutlleum of the vertex is subtransverse, carinated on the sides next to the eyes, distinctly narrowed in front and truncated. Ocelli are distinct from the margin of the vertex. Antennae are filform. Pronotum is truncated in front, rectangular behind, smooth above and carinated, the carina interseted before the middle by the principal sulcus. Pronotum has a sinus in front, the laternal carinae being compressed before the sulcus, with smooth rounded lobe. The deflexed lobes are higher than longer, with the hinder angles rectangularly rounded. Tegmina are longer than the hinder femora, narrow, sub-paralle-sided, with the discoidal area membranous from the central tegmina to the tip, regularly reticulated with long rectangular cells. Two or three broad brown bands running across the length of the tegmina. Its basal half is submembranous and irregularly reticulated with an intercalated nervure approximating to the median nervure, axillary, nervure being free. Wings are provided with discoidal nurvure emitting two branches second closely approximating to the front ulnar vein. Its disc is hyaline with a curved brown band. Space between the meta-sternal lobes is very narrow in the male, half as narrow as the space between the mesosternal lobes. Hind femora are short, very broad at the base, with the upper carina very slightly serrulated. Tibiae possess eight outer and nine inner spines, outer spurs being rather shorter than the inner, and not pilose. Sub-genital laminae are conical and very short.

Lerina oedipodioides, Bolivar.
(Figs. 33 & 34.)

Lerina oedipodioides, Bolivar, Ann. Soc. Ent., France, ixx, 1902, pp. 603.
Lerina oedipodioides Kirby, Faun, Brit. Ind., Orth., 1914, pp. 138.

Body is pale yellowish-brown in colour and the head and pronotum are spotted with darker brown. Tegmina are provided with three brown bands. Wings are hyaline, pale yellow at the extreme base with a subfused brown marginal band behind, not extending to the tip. Hind femora are brown, broadly pale at the base and with a narrow pale ring before the tip. Hind tibiae are brown, with a narrow space near the base and a broad one near the tip being pale.

Only one specimen of this species is represented in the dry collection. It was collected at a village between Trichi and Tanjore during June 1925. It is found distributed on the hilly grass lands of the southern half of the Madras State.

Genus Dittopternis, Saussure.

Dittopternis, Saussure, Mem., Soc., Geneve, xxviii (9) 1884, pp. 52, 125.
Dittopternis, Saussure, Mem., Soc., Geneve, xxx (1) 1888, pp. 19 44.
Dittopternis, Kirby, Faun. Brit. Ind., Orth. 1914, pp. 139.

Thorax is rather short. The basal half of the tegmina is opaque, transverse veins in the apical part of the tegmina are erect with the cells squarish-oblong. Wings do not possess fascia. The tegmina are narrow. Internal calcaria of the posteriae are usually equal.

Body is usually brown in front and lighter behind. Head is broad and granulated. Scutellum of the vertex is 5 sided, longer than broad, sulcated in front and the lateral carinae do not extend behind the eyes. Frontal ridges are broadly sulcated, parallel sided and continuous. Antennae are longer than the head and pronotum. Pronotum is granulose with the median carinae bituberculated in front and deeply cut by the principal sulcus. Hind border is rectangular with the tip rounded off, and the deflexed lobes being nearly square, with borders slighly sinuated. Tegmina are long, narrow, densely reticulate, and opaque upto about beyond the middle, then membranous and subhyaline, with complete intercalated nervures. Wings are hyaline with the base coloured bluish brown and a curved band on the hind wing. Hind femora are denticulated and the hind tibiae provided with nine or ten spines.

Dittopternis zebrata, Saussure.
(Figs. 35 & 36.)

Dittopternis zebrata, Saussure, Mem. Soc. Geneva, xxviii, (9), 1884, pp. 125, 126.
Dittopternis zebrata, Saussure, Mem. Soc. Geneve, xxx (1), 1888, pp. 44.
Dittopternis zebrata, Kirby, Faun, Brit. Ind., Orth., 1914, pp. 140.

Body is fulvus brown, strongly rugose and granulated. The tip of the pronotum is not very acute, the margins being lightly wavy, the hinder angle of the lateral lobes is rather narrow, and extending obliquely backwards with hinder margins rounded. Tegmina are dotted and spotted with black, and dotted with grey at the tip. Wings are hyaline with the longitudinal brown nervures, yellow at the base, followed by a subfused brown band and with the margin brown streaked and hyaline in the male. Hind tibiae are blue with spines tipped with black.

Only one specimen is represented in the dry collection and it was collected at Chombalarin Made, Malabar District on 23rd December 1925. It is found distributed on the hilly grass lands in South India, Burma and Ceylon.

Genus Oedaleus, Fieber.

Oedaleus, Fieber, Lotos, iii, 1853, pp. 126.
Oedaleus, Kirby. Faun. Brit., Ind., Orth., 1914, pp. 142.

The pale markings on the pronountum are arranged to form an 'X' shape.

Body is sufficiently small and brown in colour. Head is slightly larger than the pronctum in width. Frontal scutellum is longer than broad, and truncated in front with a slight medium carina continued backwards over the vertex, the frontal ridge being parallel sided, sulcated and the tempora small and original. Pronotum is short, greenish brown with incomplete white cruciform marks. It is strongly carinated entire with the median sulcus visible on the side of the pronotum before the middle. Hind border of the pronotum is rectangular or obtusely angulated. Tegmina are long and narrow, brown on the basal half with white markings, then subhyaline with brown markings and intercalcated area subsequal. Wings are yellowish at the base, with a broad dark central band. The upper margins of the hinder femora are generally entire.

Oedaleus abruptus, Thunberg.
(Figs. 37 & 38.)

Gryllus abruptus, Thunberg, Mem., Acad. Peteresb. v. 1815, pp. 233.
Gryllus abruptus, Thunberg, Mem., Aead. Peteresb, ix. 1884, pp. 396, 412, pl. xiv fig. 5.
Pachytylus Oedaleus abruptus. Stal. Recens. Orth, i. 1873, p. 127.
Oedaleus abruptus, Saussure, Mem. Soc. Geneve. xxviii (9), 1884, pp. 110, 117.
Oedaleus abruptus., Saussure. Mem. Soc. Geneve, xxx (1), 1888, pp. 40.
Oedaleus abruptus, Kirby, Faun. Brit. Ind., Orth., 1914, pp. 144.

Body is considerably small and coloured light brown. Scutellum of the vertex is long, narrow, sub-triangular and pointed. Pronotum is brown and more or less short and pointed. The white cross-markings are found above and oblique brown stripes are noticed on the sides of the head and pronotum. The pronctum is angulated behind with the principal sulcus which is placed much before the middle. Tegmina are brown with three bands upto the middle and beyond the middle is subhyaline. Wings are very pale, greenish towards the base, with brownish central fascia more or less extended, the outer are being hyaline and more or less marked with brown. Tibiae are pale reddish brown fading towards the base.

Only one specimen of this species is represented in the dry collection and it was collected during 1932 by Det. G. M. Henry. Its place of collection is not known. It is found in paddy fields and widely distributed throughout India, Ceylon and China.

Genus Gastrimargus, Saussure.

Gastrimargus, Saussure, Mem. Soc. Geneve, xxviii (9), 1884, pp. 109, 110.
Gastrimargus, Saussure. Mem. Soc. Geneva, xxx (1), pp. 37.
Gastrimargus, Kirby. Faun. Brit. Ind., Orth., 1914, pp. 144.

Pronotum possesses a strong crest or it is acutely tectiform, without rugae. Wings are not black at the apex.

These insects resemble Oedaleus species in many characters ; but are of large size, with the pronotum long, pointed behind and longitudinally or obliquely striped with green or brown, and whitish. Femora are generally serrulated above. Tegmina possess the costal space more narrower above the intercalated area than the lower one. Wings are generally yellow or blue, with a broad central band of dark brown and apical area hyaline.

Gastrimargus transversus, Thunberg.
(Figs. 39 & 40.)

Gryllus transversus, Thunberg. Mem. Acad. Petersb., v. 1815, pp. 233.
Gryllus transversus, Thunberg. Mem. Acad. Petersb., ix, 1824, pp. 396, 412.
Oedipoda citrina, Burmeister, Hanb., Ent., ii. 1838, pp. 648.
Oedaleus marmoratus, var. *minor*. Saussure, Mem. Soc. Geneve, xxx (1), 1888, pp. 39.
Gastromargus transversus, Kirby. Faun. Brit., Ind., Orth., 1914. pp. 145.

Body is greenish brown, with dorsal surface greenish in colour. Antennae are reddish brown in colour. Behind each eye a pale spot runs to the back of the head, bordered above and below with black, which is generally continuous on the front of the pronotum. In a brightly coloured specimen there is an ill-defined pale band and below this again a black patch from the back of the head runs to the middle of the pleura, with a pale spot in front and behind. Pronotum is acutely angulated behind with a strong pale median carina, sometimes bordered with black or with a black spot on each side at the extremity and with a posterior green band. Abdomen is greenish brown in colour. Tegmina are long and narrow, the inner margin greenish, the rest of the tegmina brown with pale whitish markings, especially two or one transverse markings nearer the base. The outer half of the tegmina is more or less blotched with brown. Wings are shorter than the tegmina and coloured bright sulphur yellow at the base with a black central band curving round the anal angle. Beyond this the wing is hyaline, more or less blakish at the tip. Hind femora are longer and slinder greenish or yellowish, spotted or dotted with black and serulated above. Hind tibiae are reddish and greenish at the base with the spines tipped with black.

Nine specimens (six old and three fresh) are represented in the collection. The six old ones were collected from different places at different dates. The three fresh ones were collected from Coimbatore District, i.e., two from Anaikatti and one from Marudamalai. In the wet collection three specimens each one collected from Horsely Konda, Chittoor and Mysore are represented. This species is found both in open grass lands as well as paddy fields. It is distributed in South India, Baltistar in Kashmir State, Garhwal in United Provinces, Sylhet in Assam, Bengal, Jawa, etc.

Genus Locusta, Linnaeus.

Locusta, Linnaeus. Syst. Nat. (ed. x), 1758, pp. 431.
Locusta, Schrank. Enum. Ins., Aust., 1781, pp. 246.
Gryllus, Fabricius, Syst. Ent., 1775, pp. 287.
Acrydium, Latreille. (nec. Geoffroy), Hist. Nat. Crust. Inst. iii. 1802, pp. 282.
Acrydium. Latreille, (nec. Geoffroy), Hist. Nat. Crust, Inst. xii. 1804, pp. 149.
Pachytylus, Fieber. Kelch. Grundi. Kenntu. Orthopt. 1852, pp. 5.
Locusta, Kirby. Faun. Brit. Ind., Orth., 1914. pp. 146.

Basal and apical portions of the tegmina are both subhyaline.

Body is of large size. Antennae are longer than the head and pronotum. Fastigium of the vertex is broad, not depressed, sub-carinated and passing over into the frontal ridge which is broad and hardly sulcated. Pronotum is more or less constricted in front stongly ridged ; carinae hardly intersected by the principal sulcus, which is placed above the middle and angulated behind; the hinder edges of the deflexed lobes being very slightly slopping. Tegmina are very long, subhyaline more or less striped with brown. Wings are hyaline without dark central band. All the tibiae are spinose. Hind femora are rarely serrulated and the rectus being broad and pilose. The inner margins of the mesosternal lobes are nearly straight and mesosternal lobes widely separated. First segment of the abdomen bears the tympanum which is slightly exposed.

Locusta danica, Linnaeus.
(Figs. 41 & 42.)

Gryllus (Locusta) danicus, Linnaeus, Sys. Nat. (ed. xii) i (2), 1767, pp. 702.
Pachytylus danicus, Aurivillius, Ent. Tidskr. xxi. 1900, pp. 246, 247.
Gryllus cinerascens, Fabricius, Spec. Ins. i. 1781, pp. 369.
Locusta danica, Kirby. Faun. Brit., Ind., Orth. 1914, pp. 146.

Body size is large and greenish brown in colour. A brown stripe passes behind the eyes which generally is intersected by a white line on the head across the head and pronotum. Pronotum is smooth. Tegmina is subhylaine, more or less extensively blotched and reticulated with brown. Wings are greenish and hyaline. Hind femora are green, slightly thick, long and tappering with the upper surface being serrulated. Hind tibiae are red.

Only one specimen is represented in the dry collection. The date and place of collection are not known. As this species happens to be migratory it is widely distributed throughout the world. It has been recorded at several places throughout Asia.

Genus Trilophidia, Stal.

Trilophidia. Stal. Recens. Orth. i. 1873. pp. 117, 131.
Trilophidia, Saussure, Mem. Soc., Geneva, xxviii (9), 1884, pp. 56, 157.
Trilophidia. Saussure. Mem. Soc. Geneva. xxx (1) 1888, pp. 21, 54.
Trilophidia Kirby. Faun. Brit. Ind., Orth., 1914, pp. 148.

Pronotum possesses well defined crest when viewed sideways. It is strongly bilobed in front.

Body is rather small and slender. Antennae are slightly thickened towards the tip. Scutellum of the vertex is broad, sloping, truncated at the extremity and the frontal ridge imperfectly sulcated. Lateral carinae start from near the lower extremity of the eyes and annulated. Pronotum possesses a carina, which is nearly straight, cut by the principal sulcus before the middle and angulated behind. The defflexed lobes of the pronotum are higher than broad. Tegmina are long narrow, brown and the costal area almost equally divided by the principal intercalated nervure. Wings are long and narrow. Hind femora are moderately broad.

Keys to the species.

1. Crest of the pronotum is deeply cut, two sulci are present. Wings are not yellow at the base — *annulata*, Thunb.
2. Wings are yellow at the base — *turpis*, Walker.

Trilophidia annulata, Thunberg.
(Figs. 43 & 44.)

Gryllus annulatus, Thunberg, Mem. Acad. Petersb. v. 1815, pp. 234.
Gryllus annulatus, Thunberg. Mem. Acad. Petersb ix. 1824. pp. 305, 400.
Gryllus bidens, Thunberg, Mem. Acad. Petersb. v. 1815, pp. 235.
Gryllus bidens. Thunberg. Mem. Acad. Petersb. ix. 1824. pp. 398. 422.
Trilophidia annulata, var. *bidens*, Stal. Recens. Orth. i. 1873, pp. 132.
Trilophidia annulata, Kirby. Faun. Brit. Ind., Orth., 1914. pp. 149.

Body is small in size and brown in colour with blackish-brown markings and pubescent beneath. Antennae are slighly thickened and pale at the base. Pronotum is provided with a high carina forming two teeth or sulci in front and with lateral carinae. Tegmina are light greyish-brown with indistinct bands and extremity being light brownish hyaline. Wings are not yellowish at the base but it is brown beyond. First and second pairs of legs are banded with brown. Hind femora bear blackish-brown spots on the carinae, and darker blackish-brown inside with a broad pale white band at the tip. Hind tibiae are blackish with two white bands and with about eight black tipped spines, the terminal ones rather long.

Two old specimens are represented in the dry collection and the dates and places of collection are not known. Usually found in the grass lands and also in paddy fields. It is distributed in different parts of India, Ceylon and Burma.

Trilophidia turpis, Walker.
(Figs. 45 & 46.)

Epacromia turpis, Walker. Cat. Derm. Salt., BM. iv. 1870, pp. 775.
Trilophidia annulata var. *ceylonica*, Saussure, Mem. Soc. Geneve. xxviii (9), 1884, pp. 154.
Trilophidia turpis, Kirby, Faun. Brit. Ind. Orth., 1914, pp. 149.

Body is brown and granulated. Scutellum of the vertex passes into the frontal ridge. Antennae are ringed with black and tawny. Pronotum is rectangular behind. Abdomen, is blackish in the middle on the dorsal surface. Tegmina are brown with two large pale spots on the costa before the middle, outer half dusky, subhayaline with rather indistinct alternate brown and subhyaline spots running round the apex. Wings iridescent, hyaline, clouded towards the apex and stained with yellow towards the base and inner margin. Front legs and the middle legs are banded. Hind femora are greyish-brown with a dark brown band and spots on the carinae and dark blackish brown on the inside, with a large spot before the tip. Hind tibiae are blackish with two white bands with about eight black-tipped spines, the terminal one slightly longer than near the base.

Four dry preserved and two wet preserved specimens are represented in the collection. The two specimens available in the wet collection were collected from Bangalore and the dates and places of collection for the dry preserved specimens are not available. Primarily they were first reorded in Ceylon and later on in South India.

Genus Acrotylus Fieber.

Acrotylus Fieber, Lotos. iii. 1853, pp. 125.
Acrotylus Kirby, Faun. Brit. Ind., Orth. 1914, pp. 152.

Body is of normal size with long and narrow tegmina. Pronotum is short, broadly rounded behind or very slightly angular.

Body is of normal size and pubescent, Pronotum is stouter than the abdomen. Antennae are filiform and variable in length. Head is short and the eyes are rounded and prominent. Costal ridge is rather broadly sulcated, becoming narrower in front,and frequently acuminated or constricted on the vertex. Scutellum of the vertex is triangular, distinctly carinated throughout, with carina generally intersected by the front sulcus, and also by the typical sulcus at or before the middle. The deflexed lobes are much higher than long, with the hinder angle rounded off without being produced and with the hinder margin nearly straight. Tegmina are narrow with the apical area subhyaline. The costa is expanded near the base and the costal area almost divided equally along the length by the intercalated nervure. The outer intercalated nervures are frequently obsolete and the median nervure is absent. Wings are hyaline, generally yellow or red at the base, with a dark curved central band. Hind femora are generally yellowish with black bands or spots above and black shade on the inner side. Hind tibiae are more or less blue, with the terminal spurs unequal.

Acrotylus humbertianus, Saussure.
(Figs. 47 & 48)

Acrotylus humbertianus, Saussure. Mem. Soc. Geneve. xxviii (9), 1884, pp. 189.
Oedipoda inficita. var. *humbertianus.* Walker. Cat. Derm. Salt. BM. iv, 1870, pp. 742.
Acrotylus humbertianus. Kirby. Faun. Brit. Ind., Orth., 1914, pp. 153.
Acrotylus humbertianus, Uvarov. Spol. Zeyl. xiv. 1927. pp. 100.

Body is of moderate size with light greyish above and whitish beneath, being slightly pubescent. The surface of he body is some what smooth. Vertex is a little prominent. Pronotum is finely carinated. The proxona has two fuscuous faciae with the lateral margin whitish below. Tegmina bear two oblique white spots, the discoidal portion or area hyaline beyond the middle in front with the transverse nervures somewhat tinted with fuscous, and the areolae large, the posterior intercalated space with a line of fuscous spots. Wings are hyaline, yellow at the base and the radial area possesses a semilunar fuscous fasciae. Hind femora possess bands and the hind tibiae more or less blue in colour, with the tetminal spurs unequal.

Twenty-one fresh specimens collected at Anaikatti during March 1968 and six old specimens, the dates and places of collection not known, are represented in the dry collection. It is found in the hilly grass lands and has a distribution throughout South India and certain parts of Ceylon.

Genus Sphingonotus, Fieber.

Sphingonotus, Fieber, Keich. Orthopt. Obersehles, 1852, pp. 2.
Sphingonotus, Fieber, Lotos. iii. 1853, pp. 124.
Sphingonotus, Fischer, Orth. Eur., 1853, pp. 52, 297.
Sphingonotus, Kirby. Faun. Brit. Ind., 1914, pp. 129, 153, 154.

The pronotum is distinctly angular behind. The basal one-third of the tegmina is generally opaque.

Body is punctated, slender, brownish-grey and pale beneath. Scutellum of the vertex is ovate, sloping, concave, and subcarinated. Antennae are longer than the head and pronotum together and the frontal ridge is sulcated. Pronotum is constricted in front, rectangular or obtusely angulated behind. The deflexed lobes of the pronotum are higher than long and the hinder angle is obtuse and produced. The median carina is slightly indicated and cut by the principal sulcus much before the middle. Tegmina are brownish-grey, with the darker markings and membranous almost throughout. Wings are bluish hyaline or brightly coloured with a curved black band. Hind femora are generally black on the inner side and the hind tibiae being generally blue.

Sphingonotus indus, Saussure.
(Figs. 49 and 50)

Sphingonotus indus, Saussure, Mem. Soc. Geneve. xxviii (9), 1884, pp. 204.
Sphingonotus indus, Kirby. Faun. Brit. Ind., Orth., 1914, pp. 156.

Body is of moderate size, greyish-brown and paler beneath. Head is punctured with the costal ridge parallel-sided. Pronotum is thickly punctured behind and on the sides, median carina slender, and the hind border rectangular. The deflexed lobes of the pronotum are rounded behind. Tegmina are thickly and irregularly reticulated at the base, with pale brown bands beyond and pale blotches towards the apex and the base. Basal one-third of the tegmen is opaque. It possesses a strong intercalate vein, touching the apex of the median vein. Wings are hyaline with a brown band arched behind and extending to about the anal angle, but not to the hinder margin.

Only one old specimen is represented in the dry collection. The date and place of its collection are not known. It is not widely distributed but restricted to the Himalayan region.

Sub-family PYRGOMORPHINAE.

Prosternum is raised and laminated in front. It is swollen and provided with spines or hooks. Foveolae of the vertex is continuous, superior and forming the extremity of the fastigium with the front part never sloping.

Genus Chrotogonus, Serville.

Chrotogonus, Serville, Ins. Orth., 1839, pp. 702.
Chrotogonus, Kirby. Faun. Brit. Ind., Orth., 1914, pp. 161, 162, 163, 164, 165, 166, 167.

Tegmina are of ordinary elongation. Anterior margin of the prosternum is strongly reflexed and dilated.

Body is of small size, short and stout. Head is small and narrow towards the front. Antennae are short, filiform, inserted close together between the eyes. The front margin of the prosternum is strongly reflexed and dilated. Pronotum is more or less rugose, much widened behind and the hind border obtusely angulated or rounded. Tegmina are of ordinary length, i.e., generally shorter than the abdomen and nodulose. Wings are often abbreviated. Hind femora are moderately stout and hind tibiae are slightly thickened towards the extremity, with no terminal spine on the upper outer carina. The outer spines are of nearly equal length.

Key to the species.

1.	Wings are distinctly shorter than the tegmina. Wings extend atleast to the middle of the hind femora. Tegmina almost covering the abdomen.	*incertus*, Bol.
2.	Tegmina are shorter than the abdomen.	*trachypterus*, Blanch.
3.	Tegmina are scarcely extending beyond the middle of the abdomen. Tegmina is half as long as the abdomen. Small in size.	*oxypterus*, Blanch.
4.	Tegmina are gradually and much acuminate. Hind femora are provided with a distinct black spot above.	*saussure*, Bol
5.	Tegmina are quite rudimentary	*brachypterus*, Bol.

Chrotogonus incertus, Bolivar
(Figs. 51 an

Chrotogonus incertus, Bolivar, Ann. Soc. Espan. xiii. 1884, pp. 38, 45, 494.
Chrotogonus oxypterus, Bolivar (nec. Blanch), Ann. Soc. Ent. France Lxv, 1902, pp. 605.
Chrotogonus incertus, Kirby, Faun, Brit. Ind., Orth. 1914, pp. 163.

Body is reddish-brown, pale beneath and spotted with brown. Head is short, tuberculate in front and the vertex is concave. Pronotum is rugose, tuberculate behind, acutely angulate, with the outer margin yellow. Tegmina are as long as the abdomen, i.e., almost covering it, with one row of small tubercles and the reddish nervures. Wings are distinctly shorter than the tegmina and extend atleast to the middle of the hind femora, and their colour being light brown. Hind femora are granulate, pubescent, with rather indistinct brown spots. Abdomen is [redacted] the back.

Two old specimens of this species are represented in the dry collection. The place and date of collection are not known. They are found in the grass lands at the foot of the hills in South India, in some parts of Assam and China.

Chrotogonus trachypterus, Blanchard
(Figs. 53 and 54)

Ommexycha brachypterus, Blanchard, Ann. Soc. Ent. France. v. 1836, pp. 618, pl. xxii, fig. 6.
Chrotogonus oxypterus, Kevan, Ind. Jour, of Ent, xvi. 1954, pp. 149.
Chrotogonus oxypterus, Kirby, Faun, Brit. Ind., Orth,, 1914, pp. 165.

Body is slightly reddish brown, rugose and tuberculate. Head is short, broad, rugose and antennae are fulvous and ringed with black. Eyes are very prominent, brown, shining and occupy three-quarters of the length of the head. Pronotum is short, broad, with a great number of lateral borders not indented. Sternum is yellowish, spotted with blackish tint. Tegmina are rather shorter than the abdomen, brown, considerably humped with the prominent nervures and numerous tubercles on them. Wings are hyaline, nearly as long as the tegmina. Adbomen is brown above paler beneath, with brown spots. Front two pairs of legs are short, slender and rugose with brown spots. Hind legs are not very long and their femora are as long as the adbomen; outer surface being very rugose, with two black spots, one at the base and the other at the extremity. Tibiae are provided with short pale spines.

Six old specimens are represented in the dry collection. The date and place of collection are not known. It is found among the semi-dried brown grasses both in South India and North India and also other parts of tropical Asia.

Chrotogonus oxypterus, Blanchard.
(Figs. 55 and 56)

Ommexycha oxypterus, Blanchard, Ann. Soc., Ent. France, v, 1836, pp. 622, pl. xxii, fig. 9.
Chrotogonus oxypterus, Kirby, Faun, Brit., Ind., Orth., 1914, pp. 166.
Chrotogonus oxypterus, Kevan, Ind. Journ. Ent. xvi, 1954, pp, 149.

Body is brown, short and subapterous. Head is reddish and the antennae are yellow with small black transverse streaks. Eyes are large and very prominent, covering the sides of the head. Pronotum is short and broad, humped, with some small black markings (dots) in front. Hinder border of the pronotum is hardly festoned, sides being lighter brown, with a spot and bordered by a white line extending to the lateral border of the head. Sternum is spotted with black. Tegmina are only half as long as the abdomen provided with brownish yellow colour and darker spots. Wings are obsolate. Abdomen is slightly yellowish above with a small and rather indistinct transverse black lines and the under-surface is spotted with black. Legs are rather short and slender with darker spots. Hind femora bear two brown spots and the spines on the hind tibiae are small.

One fresh specimen collected at Anaikatti during March 1968 and one old and discoloured specimen are represented in the dry collection. The date and place of collection are not known for the old specimen. Found among the semi-dry brown grass lands. This species is distributed in the Western Ghats of South India and other hilly regions of North India.

Chrotogonus saussurei, Bolivar.
(Figs. 57 and 58)

Chrotogonus saussurei, Bolivar, Ann, Soc. Espan. 1884, pp, 39, 47, 494.
Chrotogonus saussurei, Bolivar, Bol. Soc. Espan. iv, 1904, pp. 93, 104.
Chrotogonus oxypterus, Bolivar, (nec. Blanch) Ann. Soc. Ent. France, Lxv. 1902, pp. 605.
Chrotogonus, Saussurei, Kirby, Faun. Brit. Ind., Orth. 1914, pp. 166.

Body is ferrugenous brown with reddish-brown spots distributed throughout. Head pointed, tuberculated, orangish, with a pale opaque fascia on the front and with four black spots behind, the outer most being behind the eyes. The fastigium is subacute and concave. Antennae are blackish towards the tips. The pronotum is rugose, the hind lobe of which is provided with few granules and a short carinula on each side. Its hinder border is obtusely angulated with pliciform tubercles. Its lateral lobes bear black granules, the outer margin of which is pale and hinder angle acute. Tegmina are lanceolate (much acuminate), variable and extending to the middle of the hind femora, with brown or reddish spots adjoining the numerous small which tubercles on the principal nervures. Wings are rudimentary and brown. Legs are varied with brown and with grey pubescence. Hind femora bear a black spot above and sparingly granulated The upper carina is compressed with three black spots above and the middle one obliquely extended. The lower carinae are spotted with black.

Fifteen fresh specimens collected at Anaikatti during March 1968 and two old specimens are represented in dry collection and one specimen collected from Chilka lake, Ganjam district is available in the wet collection. This species is found among the semi-dried greenish brown grasses. It is distributed along the Western Ghats of the South India and other hilly regions of North India.

Chrotogonus brachypterus, Bolivar.
(Fig. 59)

Chrotogonus brachypterus, Bolivar, Ann. Soc. Ent. France Lxx. 1902, pp. 605.
Chrotogonus brachypterus, Bolivar, Soc. Espan. iv, 1904, pp. 95, 109.
Chrotogonus brachypterus, Kirby, Faun. Brit. Ind. Orth. 1914, pp. 167.

Body is brownish, paler below and spotted with black. Wings are rudimentary. Vertex is about as long as broad, slightly produced before the eyes and carinated between them. The lower part of the face bears a cruciform granule. Tegmina are very rudimentary and short. The nervures are only slightly curved and the tip truncated.

Two old, discoloured, incomplete specimens are represented in the dry collection. The date and place of collection of these specimens are not known. Like the other species this is also found among the greenish-brown grasses and it is distributed throughout the Western Ghats of South India and other hilly regions of North India.

Genus Aularches, Stal.

Aularches, Stal, Oefv. Vet-AKad. Forth. xxx (4) 1873, pp. 51.
Aularches, Kirby, Faun. Brit. Ind., Orth., 1914, pp. 168.

Posterior lobe of the pronotum is convex, raised above the level of the anterior lobes, with strong rugae. The abdomen bears dorsal callosity.

Body size is large and stout. The pronotum is tuberculate. The wings are large and coloured. Head is large and smooth. The scutellum of the vertex is very short, triangular, contrasting uninterruptedly into a narrow sulcated frontal ridge ceasing below the antennae. Lateral carinae are very distinct, running within the eyes and slightly divergent to the extremity of the clypeus, which is broad and truncated. Antennae are rather long, placed between the eyes and composed of a number of long joints. Pronotum is strongly tuberculate above, with two large contiguous humps in front, cut by the three sulci placed above the middle, the hinder area being rugose and deeply pitted at the sides. The reflexed lobes of the pronotum are round behind. Tegmina are long, moderately broad, sub-parallel sided, obtusely rounded behind, with callous spots. Wings are membranous and opaque, as long as the tegmina moderately broad. Abdomen is slightly compressed and the legs are long and slender. Hind femora are unarmed and only slightly thickened.

Keys to the species.

1, Head is pale	*miliaris*, Linnaeus.
2, Front humps of the pronotum are yellow	*scabiosae*, Fabricius.

Aularches miliaris, Linnaeus.
(Figs. 60 and 61.)

Gryllus (*Locusta*) *mil. ris*, Linnaeus, Sys. Nat. (ed. x) i, 1758, pp. 432.
Gryllus (*Locusta*) *miliaris*, Linnaeus, Mus. Lud. Ulric., 1764, pp. 142.
Acrydium verrucosum, De Geer, Mem. Ins. iii, 1773, pp. 486, pl. xi. fig. 6.
Gryllus (*Locusta*) *scabiosus*, Stoll (nec. Fabr.), Spectres, Saut. 1813, pp. 18, pl. 76. fig. 24.
Gryllus (*Locusta*) *conpercus*, Stoll, op. cit. 1813, pp. 40, pl. 226, fig. 85.
Aularches miliaris, Stal., Recens. Orth. i., 1873, pp. 18.
Aularches miliaris, Kirby, Faun. Brit. Ind., Orth., 1914, pp. 168.
Aularches miliaris, James, Jour. Bom. Nat. His. Soc. XLi. 1941, pp. 676, 677, 678.

Body is large and stout. The head is pale yellowish brown at the sides and blackish above. Pronotum is yellow on the sides and black towards the hinder area. The front lobes of the pronotum are provided with two large rounded continuous elevations and they are coloured dark brown. Conical, strong and pointed tubercles are present on each side of the sulci in between the space. The hinder lobes are very rugose, deeply pitted and round behind with a row of short spines on the margin, not close together. Tegmina are brown, very thickly reticulated with yellow nervures and with a variable number of large and small callous yellow spots. Wings are purplish brown being darker towards the base. Legs are yellowish, slightly mottled with darker or veined with black. Hind knees are marked with black on the sides. Abdomen is black with yellow narrow incisions, and a row of yellow spots are present on the back before the incisions. The apex of the adbomen is yellow. On the under surface the transverse bands are small, but there are no yellow spots in addition.

One old, discoloured and incomplete dry specimen and two specimens in the wet collection are present. The dates of collection of these three specimens are not known. But out of the two specimens in the wet collection one was collected from Yercaud (Salem District) and another one from Munnur (Travancore District). The place of collection of the specimen in the dry collection is not known. This species is found distributed in Sikkim (Nepal State), Coonoore in Madras State, Ceylon and Java.

Anlarches scabiosae, Fabricius.
(Figs. 62 and 63.)

Gryllus scabiosae, Fabricius, Ent, Sys. ii, 1793, pp. 51.
Gryllus scabiosae, Kirby, Faun. Brit. Ind. Orth., 1914, pp, 170.

Body is large and stout. The broad yellow band is present across the head and pronotum as in the last species. The front part of the pronotum, including the large rounded tubercles is yellow and also the hinder border which is not very strongly dentated is yellow. Abdomen is broadly banded reddish, both above and below. Tegmina are greenish with numerous yellow, callous spots. Wings are purple brown, sub-hyaline towards the extremity, sometimes with a few indistinct yellow spots.

One fresh specimen collected at Marudamalai on 28th October, 1968 and two old specimens, the dates and locality of which not known are represented in the collection. The fresh specimen was collected from among the bushy herbs in the hilly jungles of Marudamalai. This species is distributed throughout South India and also certain parts of Orissa. Bombay, Ceylon and Cambodia.

Genus Poecilocerus, Serville.

Poecilocerus, Serville, Ann, Scit. Nat, xxii, 1831, pp. 275.
Poecilocerus, Serville, Ins. Orth., 1839, pp. 595.
Poecilocerus, Stal, OEfv, Vet-Akad, Forth, xxx (4), 1873, pp. 51.
Poecilocerus, Kirby, Faun, Brit., Ind., Orth,, 1914, pp. 170.

Outer apical spines of the posterior tibiae are very distinct. The posterior sulcus of the pronotum is scarcely behind the middle. The body is robust ; the tegmina and the wings are well developed.

Body size is large, robust and fusiform. Head and pronotum are slightly carinated. Fastigium of the vertex is obtusely rounded in front and distinctly sulcated, passing into the frontal ridge, which is sulcated throughout. The lateral carinae are only slightly divergent. The antennae are short and thick with long joints. Pronotum is gradually widened behind, the sulci are well marked, the hind sulcus placed about the middle with the hinder lobe raised and rounded behind. The deflexed lobes are narrowed below. Adbomen is slightly carinated above. Tegmina and wings are coloured, and about as long as the adbomen. Legs are rather stout, the four front tibiae being spined beneath at the tip or the extremity. The hind femora are slender and nearly as long as the abdomen provided with no spines. The hind tibiae are spined above with nearly equal terminal spines above and below.

Poecilocerus pictus, Fabricius.
(Figs. 64 and 65.)

Gryllus pictus, Fabricius, Syst. Ent., 1775, pp. 289.
Poecilocerus sonnerati, Serville, Ann. Sci. Nat. XXXII, 1831, pp. 270.
Poecilocerus pictus, Kirby, Faun. Brit. Ind., Orth., 1914, pp. 172.

Body is large, stout, bluish-black or greenish with yellow markings and red wings. Antennae are blue-black ringed with yellow beyond the basal third of their length. Head and pronotum possess a slight median carina. Broad yellow band runs within each eye, running backwards on the pronotum to the middle sulcus, behind which are two broad subinterrrupted transverse yellow bands. The upper part of the frontal ridge is also yellow and there are broad yellow diverging bands on each side of it. A broad yellow band below each eye also extends over the lower part of the deflexed lobes of the pronotum. Pronotum is impress-punctate, rounded behind the hind sulcus placed just behind the middle. Tegmina are green or olive, with the longitudinal and transverse nervures yellow and the apex often reddish. The wings are brick-red with red nervures, more or less subhyaline towards the tip. Abdomen is yellow with transverse blue-black bands. Legs are yellow and the femora are longitudinally striped with blue-black; and the same shade is found on the inner side, nearly up to the extremity. The four front tibiae are blotched with blue-black.

This species is usually found in the fields where grams, beans and other pulses are grown. They are even commonly seen among the leaves of stem-twiners of beans grown in the backyard of houses and also on leaves of calotropis plants. It is therefore a widely distributed species in the tropical regions of India.

Five-old adults and three juvenile specimens are represented in the dry collection. The locality and date of collection of specimens in the dry collection are not known. Six specimens are represented in the wet collection and they were collected from Kolli Hills. Apart from them 48 fresh specimens, collected at Minambakkam during 1974 are also represented in the dry collection.

Genus Pyrgomorpha, Serville.

Pyrgomorpha, Serville, Ins. Orth., 1839, pp. 583.
Pyrgomorpha, Kirby, Faun. Brit. Ind., Orth., 1914, pp. 174.

Antennae are near the eyes and inserted below the ocelli. Posterior lobe of the pronotum is in level with the other lobes. Abdomen is not provided with callousities. The sternal lamina is marginal in front. The outer apical spine of the posterior tibiae are absent or different to detect. Posterior angle of the lateral lobes are rounded or truncate. The tengmina are well developed.

Body size is small, slender, and more or less granulated. Head is conical, and the fastigium of the vertex projects considerably before the eyes. Antennae are inserted between and close to the eyes ; short and narrowly fusiform. Pronotum is rounded behind, carinated and more or less pointed at the extermity. The wings are hyaline or red at the base. Metasternal faveolae are separated by a transverse space. Abdomen is compressed, generally with a transverse dark band. Legs are long and slender.

Pyrgomorpha brachycera, Kirby.
(Figs. 66 and 67).

Pyrgomorpha brachycera, Kirby, Faun. Brit. Ind., Orth., 1914, pp. 175.

Body is slender, small and more or less granulated with green colour when alive. The fastigium of the vertex is as long as the eye and equally broad near the extremity, where it is very obtusely rounded. Pronotum has a front long, hardly sinuated vertex and a well developed or marked median carina. The lateral carinae are obsolate, uniformly spotted with brown. Antennae are shorter than the head and pronotum together, stout pointed at the tip, much broadened and flatened at the base. A row of large granules runs behind each eye to the back of the head above which (but not continuous) is a trace of pale line, and the deflexed lobes are very narrowly edged with pale shade below. Tegmina are green in life (later changes to testaceous or greenish brown) with darker spots distributed all over narrow and pointed. Wings are shorter than the tegmina, slightly reddish, with the costa and hind margin hyaline. Abdomen possesses black spots above towards the base. Legs are long and slender.

One incomplete specimen collected on 26th October, 1967 at Anaikatti from among the green grasses is represented in the dry collection.

Genus Atractomorpha, Saussure.

Atractomorpha, Saussure, Ann. Soc. Ent., France, (4)i. 1861, pp. 474.
Atractomorpha, Kirby, Faun. Brit. Ind., Orth. 1914 pp. 180.

Anterior margin of the pronotum is neither deflexed nor dilated. Antennae are remote from the eyes and placed in front of the ocelli. Tegmina are long and narrow, and the body is moderately slender

Body is long slender and compressed. Head is conical, rarely longer than the pronotum. Fastigium is as long as the eye. Front is oblique and the frontal is compressed between the antennae and usually sulcated to the extremity. Antennae are short, triquadral, subfiliform (very slightly depressed and widened at the base in the female) and inserted at the tip of the fastigium. Eyes are oblong and the cheeks are provided with a row of granules extending to the middle of coxae. The pronotum is subemerginate in front and obtusely angulated behind, very slightly tricarinate, the hind sulcus placed behind the middle. The deflexed lobes are almost perpendicular, broader with the hinder margin incised, and the hinder angle more or less produced behind. Tegmina are rather pointed with the coastal area slightly expanded towards the base. Wings are nearly as long as tegmina, pointed at the tip, hyaline, and often red at the base. Legs are slender, with the hind femora with the exteromedian area some-what oblique and distinctly broader than the lower area. Knees are shortly bilobate with the hind tibiae smooth and bearing

pointed spines and an outer terminal spine. Prosternum bears an obliquely truncated tubercle in the middle or submarginate and concave in front. The metasteral lobes are separated behind the foveolae by a transverse space. Abdomen is slightly compressed, with the last dorsal segment angularly exercised. Supra-anal lamina is trigonate, with the cerci short and conical. Valves of the ovipositor are sinuated and slightly crenulated.

Keys to the species.

1. Tegmina are pointed but not longer than the wings. Hind marginal of the lateral lobes of the pronotum is deeply concave. Tegmina extend one-fourth their length beyond the hind femora. Frontal ridge is sulcated or shortly compressed and arched between the antennae. Tegmina are green and the wings are red at the base. — *crenulata*, Fabricius.

2. Tegmina are brown, mottled with blackish, brown. Wings are hyaline. — *scabra*, Thunberg.

Atractomorpha crenulata, Fabricius.
(Figs. 68 and 69).

Truxalis crenulata, Fabricius, Ent Syst. ii, 1793 pp. 28.
Atractomorpha crenulata, Saussure, Ann. Soc. Ent. France, (4) i, 1861, pp. 475;
Acridium psittaciu m, De Haan., pt. Temminck Verhande, Orth., 1842, pp. 149, Pl. xxiii, fig 1. (nec.pp. 146).
Atractomorpha crenulata, var *prasina Bolivar*, Boll Soc. Espan. Hist. Nat. v, 1905, pp. 197, 209.
Atractomorpha crenulata, Kirby, Faun. Brit. Ind., Orth., 1914, pp. 181.

Body is green, thin and long. Antennae are rather short, separated from the ocelli by a space much narrower than the width of the antennae and the front is granulose. Fastigium of the vertex is about as long as the oval eyes, obtusely pointed and narrowly carinated in front. Pronotum is punctured and sparingly granulated subtruncated in front and obtusely angulated behind. The deflexed lobes are broader behind and concave on the hind border, with the lower hinder angle rather produced. Head and pronotum are slightly sloping along the sides, granulated behind the eyes; the crenulation being often pale or pink. Prosternum bears an obtusely rounded tubercle. Tegmina are green, pointed, extend for about one-fourth of their length beyond the hind femora. Wings are pointed rather shorter than the tegmina, i.e., twice as long as broad, hyaline, with the base and nervures rosy. Abdomen is also rosy and smooth. Legs are long and slender.

Six old specimens (i.e. 4 adults and 2 juveniles) are represented in the dry collection. The dates and places of collection are not known for the dry preserved specimens. Two specimens collected from Chingalput are represented in the wet collection. This species is not only distributed in Madras State but also in Bengal.

Atractomorpha scabra, Thunberg.
(Fig. 70)

Truxalis scaber, Thunberg, Mem. Acad. Petersb. v, 1815, pp. 266.
Truxalis porrecta, Walker Ann. Mag. Nat Hist. (3) iv, 1859, pp. 222.
Atractomorpha consobrina, Saussure, Ann. Sec. Int. France (4), 1861, pp. 475.
Atractomorpha scabra, Kirby, Faun. Brit. Ind., Orth., 1914, pp. 182.

The body is coloured light brown. It is slender with the prosternal tubercle, broader and more or less bifid orbidentate. Tegmina are brown, mobile with blackish spots, extending for about one-fourth their length beyond the hind femora. The wings are irridescent, hyaline, rarely tinged with rosy colour.

Only one old specimen is represented in the dry collection. The date and place of collection of this specimen is not known. It is widely distributed in South India and Ceylon.

Genus Orthacris, Bolivar.

Orthacris, Bolivar, Ann, Soc. Espan, xiii, 1884, pp. 24, 439, 496.
Orthacris, Kirby, Faun, Brit. Ind. Orth, 1914, pp. 184.

Posterior sulcus of the pronotum is placed at some distance behind the middle. Tegmina and the wings are absent.

Body is slender, apterous and coloured greenish brown. Head is conical with the fastigium horizontally produced before the eyes, and the vertex carinated. Tempora are very short with a short suture in front. The front part of the head is very oblique, not sinuated ; costal ridge is compressed between the antennae and sulcated throughout. The lateral carinae are distinct but interrupted. Antennae are filiform, inserted between the eyes which are short, oblong with a row of granules behind. Pronotum is pubescent, not carinated, hardly expanded behind, the hinder sulcus placed at one-fourth of its length and the matazona very short. The deflexed lobs of the pronotum are rounded, equally high before and behind with the lower margins more or less thickened. Legs are short and the four front femora are slender rather compressed. The middle one extend to the extremity of the hind coxae. Hind tibiae are pubescent at the base, with rather pointed spines towards the tip. The outer terminal spine may or may not be present. Prosternum is provided with a short pointed tubercle, The sternal lamina is long. Mesosternal lobes are rounded within, subcontiguous, or separated by a very narrow space. Supraanal lamina is lanceolate with the cerci curved at the tip in the male and straight and very short in the female. Infra-genital lamina in the male is hooked and slightly produced at the tip. Valves of the ovipositor are sinuated.

Keys to the species.

1.	Hind tibiae have a short outer spine. Vertex is rather broad. Abdominal tympanum is present. Body bears red markings.	*ruficornis*, Bolivar.
2.	Body possesses yellow markings. Small yellow tubercles are scattered on the deflexed lobes of the pronotum.	*filiformis*, Bolivar.
3.	Abdominal tympanum is absent.	*elegans*, Bolivar.
4.	Abdominal tympanum is indistinct.	*acuticeps*, Bolivar.
5.	Abdominal tympanum is distinct. Outer apical spine is absent on the hind tibiae. Lateral lobes of the prosternum are dull reddish.	*simulans*, Bolivar.

Orthacris ruficornis, Bolivar.
(Fig. 71)

Orthacris ruficornis, Bolivar. Ann. Soc. Ent. France. lxx. 102.
Orthacris ruficornis, Kirby, Faun. Brit. Ind. Orth, 1914, pp. 186.

Body is somewhat small, slender, with reddish markings above and greyish hair beneath. Fastigium is rather broad, subtransverse in the female abtusely carinated above and rounded in front. Antennae are reddish. Pronotum is subcylindrical expanded behind in the female, truncated in the middle or sllighty sinuated on the hind margin. A pale olive band (sometimes obsolete) runs behind the eyes as far as the hind coxae, bordered within by a granulose red band with the outer margin sinuated. Front femora are thickened in male. Hind tibiae are provided with an outer apical spine. Abdomen is furnished with a large tympanum. The lost dorsal segment is slightly emarginate in the middle, with the lobes produced. Supraanal lamina are lanceolate and sulcated at the tip. Cerci are very short, triangular, and not incurved at the tip, much shorter than the supraanal lamina. The subgenital lamina is compressed.

Only one old specimen, slightly damaged, is represented in the dry collection. This specimen was collected on the hills of Nilgiris. It is also found on the hills of Kodaikanal and other hilly grassy lands in northern parts of India.

Orthacris filiformis, Bolivar.
(Fig. 72)

Orthacris filiformis, Bolivar, Ann. Soc. Espan. xiii, 1884, pp. 439, 496, pl. ii, fig. 11.
Orthacris filiformis, Kirby, Faun, Brit. Ind. Orth., 1914, pp. 185.

Boby is of moderate size, slender, and greenish with yellow bands when the specimen is fresh, but when old it becomes dark brown with feeble yellow markings. The yellow bands are bordered above with black and they run from the eyes across the lower margins of the pronotum. Pronotum is slightly emerginate behind with the deflexed lobes with small scattered yellow tubercles. Legs possess greyish hairs. In the male hind femora are nearly as long as the abdomen, and much shorter in the female. Supraanal lamina of the male compressed behind. Apical half of the cerci filiform and curved inside.

One very old and incomplete specimen is represented in the dry collection. The date and place of collection are not known. This species is normally found in South India and Ceylon.

Orthacris elegans, Bolivar.
(Fig.73.)

Orthacris elegans, Bolivar, Ann. Soc, Ent., France, Ixx. 1902, pp. 608, 609.
Orthacris elegans. Kirby, Faun, Brit. Ind., Orth, 1914, pp. 186.

Body is rather narrow and small, coarsely punctured, with light brown colour. Front is oblique, slightly sinuated, and the eyes are prominent. Vertex is slightly carinated in the middle. Fastigium is triangular before the eyes, equal-sided, roundly truncated in front, hind margin truncated and very slightly exercised in the middle. The hind lobe is very short. The deflexed lobes of the pronotum are crossed by a pale stripe running from behind the eyes to the hind coxae and this stripe is broken into three spots on the pleura and bordered on the inner side by a green stripe enclosing yellow tubercles, the outer margin sinuated before the middle, and behind the middle coalesing with the hind margin. Legs are green, femora more or less bordered with red. The hind knees are black on the inside and marked outside with red and black. Hind tibiae are tipped with black beneath and provided with a small outer apical spine. Pronotum is narrow and the mesosternal lobes are separated by a rather narrower space. Abdominal tympanum is absent. Supra-anal lamina is equilaterally traiangular, in the female.

Four specimens are represented in the dry collection. All of them were collected at Anaikatti near Coimbatore on 27th October 1967. They were found among the small bushes and dry grasses of the hilly plains of the Western Ghats in South India.

Orthacris acuticeps, Bolivar.
(Fig.74.)

Orthacris acuticeps, Bolivar, Ann, Soc. Ent. France, Ixx. 1902, pp, 608, 610,
Orthacris acuticeps, Kirby, Faun. Brit. Ind. Orth, 1914, pp, 187,

Body is somewhat longer and narrow, finely rugose and closely punctured. It is blackish green when alive, with a yellow stripe running from the base of the antennae below the eyes and along the lower borders of the pronotum to the hind coxae. In this area are a few tubercles and above, on the pronotum is a broad green stripe followed by a white line occupying the place of the obsolete lateral carinae. The legs and the undersurface possess grey hairs. The head is pointed in front and the vertex is obtusely carinated and pointed in the male and rounded in the female. Antennae are sub-triquadral at the base and the joints pale at the tips. Pronotum is sub-cylindrical truncate behind, and the lateral margins are broadly spotted with red and yellow and with a few yellow tubercles. Meso and Metasternum are provided with yellow lateral bands. The mesosternal lobes are almost contigous in the male and separated by a very narrow space in the female. Abdomen is reddish with black and white lines. Abdominal tympanum is very small. Supra-anal lamina are lanceolate, obtusely carinated and not longer than the cerci.

Only one specimen collected at Anaikatti on 26th October 1967 is represented, in the dry collection. It is normally found in the grassy hilly plains such as Kodaikanal and Nilgiris.

Orthacris simulans, Bolivar.
(Fig. 75.)

Orthacris simulans, Bolivar, Ann, Soc. Ent. France, IXX, 1902, pp. 608, 611.
Orthacris simulans, Kirby, Faun. Brit. Ind., Orth, 1914, pp, 188.

Body resembles the previous species in shape and size, but brownish on the dorsal side. It also possesses a large abdominal tympanum. The head, thorax, and the lateral lobes of the pronotum are dull reddish. Few white tubercles are present on the head. The last segment of the abdomen in the male is deeply sinuated, with the two lobes turning outwards, the supra-anal lamina carinated in the middle, and the cerci incurved at the tip. Hind tibiae possess no outer apical spine.

Five specimens collected at Anaikatti on 26th October 1967 are represented in the dry collection. These are found in the hilly grass lands of South India.

Sub-family **CATANTOPINAE.**

Faveolae are present, lateral or inferior, closed behind or obsolate. Prosternum is distinctly spined or tuberculated.

Keys to the Genera.

1. Tegmina possesses no patch of nervures. Prosternal tubercle is cylindrical, some-what acuminate at the apex. External apical spines of the posterior tibiae are quite distinct. Lateral carina of the head is slightly sinous or nearly straight from the base of the mandibles to ocelli. Posterior tibiae possess the outer ridge that bears the spi nes some what flattened and expanded towards the apex with seven spines besides the apical one. The frontal carina is narrowed at the apex.	*Oxya*, Serville.
2. Lateral carinae of the head is suddenly bent at an angle at the base of the antennae. Front carina is parallel sided.	*Hieroglyphus*, Krauss.
3. Mesosternal lobes are more or less separated. Tegmina possess a patch of densely placed transverse nervures at the parting of the radial veins.	*Spathosternum*, Karsch.
4. Fastigium is deflexed or horizontal, gradually blending with the frontal carina. Pronotum bears no lateral carinae. Mesosternal lobes are slightly converging posteriorly with the inner angle acute (Large species). Prothorax is gradually narrowed anteriorly. Wings are generally with dark spots at the apex.	*Orthacanthacris*, Korsch.
5. Wings do not possess dark spots and resembles Orthacanthacris in other characters. All the segments of the thorax are coarsely granulated.	*Cyrtacanthacris*, Walker.
6. Tegmina and wings are large and broad, extending far beyond the length of the abdomen. The wings are coloured red at the base.	*Chondracris*, Uvarov.
7. Prothorax is rather short and strongly constricted in the middle.	*Schistocerca*, Stal.
8 Crest is of moderate height, Tegmina are short and ovate, Wings are rudimentary.	*Pellcinotus*, Bolivar.
9 Mesosternal lobes are not converging and the angles are rounded. Prosternal tubercle is acumiate. Thorax possesses a crest. The crest is simple, very high and compressed. Tegmina extend slightly beyond the apex of the abdomen. Carinae of the hind femora are serrated.	*Teratodes*, Brulle.
10. Frontal costa is distinctly widened between the antennae and wider than the apex between the eyes. Tegmina are obliquely truncate at the apex	*Eucoptacra*, Bolivar.

11, Prosternal tubercles are cylindrical and obtuse at the apex. Mesosternal lobes in both the sexes are contiguous and rarely separated in the female. At least nine spines are present on the outisde of the posterior tibiae.	*Catantops*, Serville.
12. The lateral carinae of pronotum is sometimes broken up posteriorly by punctuation. Hind femora are short and very thick and their upper edges are toothed. Body depressed and the pronotum is very flat broad and produced angularly at the base is the produced part is equal in length to the anterior portion. The lateral carinae are very obtuse. Tegmina and wings are short.	*Brachyxenia*, Kirby.
13. Posterior lobe is simple, acuminate and bent backwards at an angle about the middle. Twelve spines are present on the outer margin of the posterior tibiae.	*Heteracris*, Walker.
14 Hind femora are comparatively slender, much narrower towards knees, extending, beyond the apex of the abdomen and not scarcely denticulate. Prosternal lobes are bilobed at the apex. The posterior tibiae have 18 spines on each.	*Tylotropidius*, Stal.
15. Prosternal lobes are straight and obtuse at the apex. Posterior tibiae possess 8 or 9 spines on the outer edge.	*Euprepocnemis*, Fiet.
16. Tegmina and wings are short.	*paraeuprepocnemis*, Brunn.

Genus Oxya, Serville.

Oxya, Serville, Ann. Sci. Nat. xxii, 1831, pp. 264, 286.
Oxya, Serville, Ins. Orth., 1839, pp. 675.
Oxya, Kirby, Faun. Brit. Ind. Orth., 1914, pp. 198.

Tegmina do not possess a patch of nervures. Prosternal tubercle is cylindrical, somewhat cuminate at the apex. External apical spine of the posterior tibiae are quite distinct. The lateral arina of the head is slightly sinous or straight from the base of the mandibles to ocelli. The outer edge of the posterior tibiae bears the spines which are somewhat flattened and expanded towards the apex. There are seven spines besides the apical ones. Frontal lobe is narrowed at the apex.

Head is large, and as broad as or broader than the pronotum. Fastigium of the vertex is obtuse, transverse and not contracted before the eyes which are large and opaque. Face is very slightly oblique, almost vertical. Antennae are filliform. Pronotum is smooth, flattend with the median carina slightly marked or wanting. Metasternal lobes are contiguous in both the sexes. Tegmina are narrow, obtusely rounded at the extremity, expanded towards the base on the costa, as long as the abdomen, sub-hyaline, and irregularly reticulated with large cells. Wings are sufficiently broad, rounded at the tips and nearly as long as the tegmina. Legs are long and slender. Hind tibiae are expanded at the tips and about ten spines are present on each carina inlcuding an outer apical spine.

Oxya velox, Fabricius,
(Figs. 76 and 77)

Gryllus velox, Fabricius, Mant. Ins. ii. 1787, pp. 239.
Gryllus chinensis, Thunberg., Mem. Acad. Petersb. v. 1815, pp. 253.
Gryllus chinensis, Thunberg. Mem, Acad., Petersb. ix., 1824, pp. 398, 419.
Heteracris apta, Walker, Cat. Derm., Salt. B.M. iv. pp. 1870, pp. 666.
Oxya velox, Kirby, Faun. Brit. Ind., Orth, 1914, pp. 199.

Body is green with a broad blackish-brown band extending from the upper half of the eye to the base of the tegmina. Antennae are thin and filamentous. Vertex often possess two diverging brown lines and sometimes the middle of the vertex and pronotum are filled up with a brown band. Tegmina are longer than the hind femora, sub-hyaline, with rufous nervures. The costa which is rather suddenly expanded near the base and the inner margins are green. The legs are green when freshly collected. The upper carina of the femora terminate in a small tooth. Knees are marked with blackish and reddish hind tibiae, beyond the middle, and the first joint of the tarsi is considerably expanded. Hind tibiae are blue with about 10 white blacktipped spines. The last ventral segment in the female is longttiudinally bicarinate.

Three freshly collected specimens and two old ones are represented in the dry collection. The fresh specimens were collected form Anaikatti, Walayar and the Museum compound, *i.e.*, one at Anaikatti on 26th. October 1967, another at Walayar on 27th. October1967 and the last inside the Museum compound on 3rd July 1970. The date and place of collection of the old specimens are not known. Tney are found widely distributed among the grasses both in the plains and the hilly regions. They have already been recorded in China, Malaya, Ceylon, Java etc.

Genus Hieroglyphus, Krauss.

Hieroglyphus, Krauss, Sitz., Akad. Wises. wien Math-at., lxxvi(i), 1877, pp. 41.
Hieroglyphus, Kirby, Faun. Brit., Ind. 1914, pp. 201.

Lateral carinae of the head are bent suddenly at an angle at the base of the antennae. The frontal carina is parrallel-sided.

Body is large and the head is also large. Eyes are sufficiently large and wide apart. The fastigium of the vertex is short, convex and rounded in fornt. The costal riage is broad, entire, short and slopping. Antennae are slender, filiform, much longer than the head and pronotum together in the male and as long or longer in the female. Pronotum is as broad as the head with the sulci very strongly marked, ususally with back lines. Prosternal tubercle is acute. Meso- and metasternal lobes are more or less widely serrated or contiguous in the male. The lobes of the hind femora are pointed or rounded, with 8 or 10 spines on the outer carina and 10 on the inner. Tegmina are subhyaline, very thickly reticulated towards the base,and with the costa only slighly expanded. Wings are hyaline, rather long, narrow and pointed. Male possesses long cerci which are pointed or obtuse, with a tooth on the inner side. Sub-gential lamina are long, conical and pointed. The genital valves in the female are short, thick, curved, the upper ones being very broad, with the outer margin crenulated, the lower being pointed, and armed with a tooth beyond the middle.

Hieroglyphus banian, Fabricius.
(Figs. 78 and 79)

Gryllus baniyan, Fabricius, Ent. st Suppl. 1798, pp. 194.
Acridium furcifer, Serville Ins. Orth., 1839, pp. 677, Pl. xiv., fig. 12,
Hieroglyphus banian, Kirby, Faun. Brit. Ind., Orth, 1914, pp. 204.

Body is of large size and coloured green, including the antennae, in fresh specimen but later changed to dull greenish brown. Pronotum is smooth with four sulci, narrowly lined with black, the first obsolete above, the second on the sides and the last two contiguous. Tegmina are subhyaline, densely reticulated and greenish at the base with green nervures. Wings are as long as the tegmina and greenish hyaline. The three substerminal segments possess silky tufts of hair on the middle. Hind tibiae are blue with black tipped spines. The basal joint of the antennae is yellowish green, tipped with yellow when fresh. Subgenital lamina of the male is moderately long.

Eight old specimens are represented in the collection. The date and place of collection are not known. This species is found in the paddy fields and are said to be hingly destructive to paddy crops. It is distributed in different parts of India wherever paddy is cultivated, *i.e.*, such as Bombay and Madras States, Central Provinces, more common in India and also in Burma.

Genus Spathosternum, Karsh.

Spathosoternum, Karsh, Sitz. Akad. Wiss. Math-Nat., Cl. Lxxvi. (1), 1877, pp. 44.
Spathosternum, Kirby, Faun, Brit., Ind., Orth., 1914, pp. 207.

Mesosternal lobes are more or less separated. The Tegmina do not possess a patch of densely placed transverse nervures at the parting of the radial veins.

Body size is rather small. Head and pronotum are convex and are in level with the parallel sides. Eyes are large and broader. The front portion of the head is very slopping with the frontal rigde sulcated throughout. Antennae are very short, often hardly longer than the pronotum thick and filiform. Pronotum is truncated, larger than the head, rounded or smooth and obtusely angulated behind. Prosternal process is straight, transverse, slightly curved backwards, longitudinally impressed. The base is narrow with the apex broad, emerginate and bilobed. Mesosternal lobes are more or less separated and distinct. Metasternal lobes are contiguous. Tegmina are narrow, rounded at the tip or extremity, with a patch of closely placesd transverse nervures between the two radial nervures. Hind tibiae are long and slender, hardly dilated, with 9 or 10 spines, besides the apical one. The valves in the female are rather short, the upper border is crenulated or smooth, the lower ones armed with a small tooth behind the middle.

Keys to the species.

1. Posterior ocular band is well marked	*prasiniferum*, walker.
2. Posterior ocular band is obsolete or suffused green.	*venulosum*, Stal.

Spathosternum prasiniferum, Walker
(Figs. 80 *and* 81.)

Heteracris (l) prasinifera, Walker, Cat. Derm. Salt. B.M.v. Suppl. 1871, pp. 65.
(?) *Coloptenus caliginosus*, Walker, op: cit. 1871, pp. 69.
Stenobothrus strigulatus, Walker, op. cit. 1871 pp. 82.
Spathosternum prasiniferum, Kirby, Faun. Brit. Ind., Orth., 1914, pp. 208.

Body is rather small, green when fresh, with a broad blackish or dark green stripe running behind the lower part of the eyes and below the lateral carinae of the pronotum. Postocular band or the band behind the eye is very prominent and bordered above and below with yellow stripes. Tegmina are light brown towards the base and subhyaline beyond. A longitudinal black streak is present in the central area which is generally almost obsolete in the male, and well marked in the female, but very variable, sometimes being entire. The inner margin is obscure or reddish in the male and generally green in the female. Wings are hyaline, often clouded towards the tip. The legs are rufatestaceous. Hind femora are often more or less green, especially in the female, and frequently with a dark longitudinal band on the outer area. Hind tibiae bear 10 or 11 spines and sometimes green.

Three old specimens are represented in the dry collection and their dates and places of collection are not known. This is an abundent and variable species found among the semi-dried grasses of plain lands in South India, Bengal and Bombay.

Spathosternum venulosum, Stal.
(Fig. 82.)

Spathosternum venulosum, Stal. Brit. Svensk, Akad. Hand. *Iv.* (4), 1878, pp. 97.
Sparthosternum venulosum, Kirby. Faun. Brit. Ind., Orth., 1914, pp. 209.

Resembles the previous species in size and colour. The lateral margins of the upper side of the pronotum are narrowly smooth and the rugae are fine and smoothly raised. Tegmina possess a short brown stripe on the disc, marked with whitish veins before and behind. Beyond the middle the veins are rather thickly reticulated, with very numerous transverse nervures between the inner radial nervures on the disc. Postocular band on the head and pronotum are obsolete or greenish. Mesosternal lobes are strongly diverging beyond the middle. Hind tibiae possess about 10 spines in addition to the terminal one.

Only one old specimen is represented in the collection and the date and place of collection are not known. This species is somewhat rarely found distributed in India.

Genus Orthacanthacris, Karsch

Orthacanthacris. Karsch. Stettin., Ent., Zeit., lvii. 1896, pp. 303.
Locust, Karny (Linn. Pt.), Sitz. Akad Wiss. Wien. Math. nat. Cl. cxvi. 1907, pp. 304.
Orthacanthacris, Kirby, Faun. Brit. Ind., Orth., pp. 224.

Fastigium is deflexed or horizontal, blending with the frontal carina. Pronotom bears no lateral carinae. Mesosternal lobes are slightly converging posteriorly with the inner angle acute. They are of large species.

Body size is large. Front is perpendicular, the vertex depressed bordered with carinae in front of the eyes, passing insensibly into the suture of the frontal ridge, which is slightly contracted above and below the antennae, and is punctured between them. Antennae are larger than the head and pronotum. Pronotum possesses a strong median carina, cut by the usual transverse sutures; the hind suture is placed about the middle, punctured, the hind border being rectangular with the pointed ends rounded off and the hind lobe thickened. Tegmina and wings are long or very long. Hind femora are thick, rather shorter than the abdomen.

Keys to the species.

1.	Wings are pale yellow towards the base with a black band towards the hind border.	*flavescens*, Fabricius.
2.	Wings are red at the base. Hind femora are bordered with black and yellow. Antennae are black.	*nigricornis*, Burmeister.
3.	Hind wings are not banded with black, violaceous at the base.	*violascens*, Walker.

Orthacanthacris flavescens, Fabricius.
(Figs. 83 & 84)

Gryllus flavescens, Fabricius, Ent. Syst., ii., 1793, pp. 52.
Gryllus(Locusta) crucifera,. Stoll, Spectress, Saut. 1813., pp. 30 pl. 146, fig 51.
Acridium semifasciatum, Serville, Ins. Orth. 1839, pp. 655.
Acridium pardalium, Walker. Cat. Derm. salt. B.M. iii, 1870, pp. 587.
Orthacanthacris flavescens, Kirby, Faun. Brit, Ind., Orth.,1914., pp. 225.

Body is very large. Head is yellowish above and behind the eyes with two blackish bands sloping backwards from between the eyes. The front portion of the head is depressed with the frontal ridge sulcated and punctured, with the parallel sides and the face is varied with black and red colours. Antennae are dark brown, longer than the head and pronotum together. Pronotum is strongly carinated, with black and reddish lines alternately arranged and spotted with pale yellow on the sides of the front lobe. The hind lobe is slightly expanded, coloured black and punctured with longitudinal reddish lines. The rest of the body is greenish brown. Tegmina are long, yellowish grey, subhyaline with brown nervures and row of spots near the extremity below the costa, and with indistinct dusky markings formed by thickened nervures into irregular and indistinct transverse bands. Wings are pale greenish yellow towards the base, brownish hyaline beyond the middle, with the scattered black spot towards the upper and outer parts of the wing and they are arranged irregularly in broken longitudinal rows. Towards the hinder angle of the yellow part of the wing is bordered by a smoky marginal light black band which is darker than the outer part of the wing. Hind femora are whitish with longitudinal and transverse nervures reddish, longitudinal ones interrupted by broken black lines. Genicular lobes are large and white below. Legs are more or less olive green with two incomplete blackish bands on the outer side. The hind tibiae bear 8 (eight) outer and 10 (ten) inner red black tipped spines.

Fourteen dry preserved specimens are represented in the collection. The dates and places of collection are not known for thirteen of them and the fresh one was collected from Marudamalai on 28th. October 1966. This species is usually found in the small jungles of Western Ghats in South India and also distributed in Ceylon.

Orthacanthacris nigricornis, Burmeister
(Fig. 85)

Acridium nigricornis, Burmeister, Handh., Ene. ii, 1838, pp. 629.
Acridnm melanocorne, Serville, Ins. Orth, 1839, pp 659.
Orthacanthacris nigricornis, Kirby, Faun. Brit. Ind., Orth., 1914, pp. 228.

Body is very large like the above species, but more blackish and very little of yellow colour. Antennae are black, Scutellum of the vertex is only slightly depressed, frontal ridge is nearly straight, sulcated and smooth. Head is yellowish and the face bears narrow black vertical stripeswithin the eyes and behind them runs a broad black band on each side of the median yellow stripe across the head and thorax. Behind each eye is an oblique yellow stripe. Towards the extremity of the pronotum the black is bisected on each side with yellowish stripes. Pronotum is coarsely punctured and the sides are yellowish, marked with small black spots. Abdomen is dull yellow and sometimes suffused with spots. Tegmina are dull yellow, sub-opaque, more or less blackish at the base. Wings are smoky hyaline with the base tinged with red. Legs are blackish and the hind femora possess broad yellow spaces spotted with black and the hind tibiae bear 8 to 11 yellow black-tipped spines with the hind tarsi reddish.

Two specimens are represented in the dry collection and the dates and places of collection are not known. They are found in the jungles of Western Ghats among the bushes. This species is also distributed in Ceylon.

Orthacanthacris violascens, Walker.
(Fig 86)

Acridium violescens, Walker, Cat. Derm. Salt. B.M. iii., 1870, pp. 587.
Orthacanthacris violescens, Kirby, Faun. Brit. Ind., Orth., 1914, pp .229.

Body is very large like the other two species with a yellow stripe running from the fastigium of the vertex over the pronotum and the suture of the closed tegmina. Antennae are yellow. In fresn specimens red lines below the antennae, the sutures of the frontal ridge along the hinder part of the head and pronotum are seen. Fastigium of the vertex is slightly expanded and bordered with black lines running to the back of the head. The frontal ridge is moderately broad, punctured above, and sulcated and slightly expanded below the ocellus. Pronotum is coarsely punctured, sometimes distinctly darker on the sides. Tegmina are brown, with the inner margin yellow. Wings are smoky hyaline tinged towards the base with pale violet. Legs are brown with red tarsi. The outer and inner lobes of the femora are whitish with oblique brown lines. The carinae are spotted with black. The knees are marked with black and its larger lobes are yellowish. Hind tibiae are provided with 8 to 10 large yellow black-tipped spines.

Three specimens of this species, one collected from Dhoni forest, one from Bangalore, and the other from Kambakkam, are represented in the wet collection. The dates of collection are not known. This species is found in the jungles of Western Ghats among the bushes. It is also distributed in Ceylon.

Genus Cyrtacanthacris, Walker.

Cyrtacanthacris, Walker, Cat. Derm. Salt, B.M. iii, 1870, pp. 555.
Acridium, pt. Oliver, Encycl- Meth., Ent. vi, 1791, pp. 209.
Acridium, Serville, Ann. Sci. Nat. xxxi, 1831, pp. 282.
Cyrtacanthacris, Kirby, Faun. Brit. Ind., orth 1914, pp. 230.

Wings do not possess dark spots.

This Genus resembles the previous genus Orthacanthacris in mostly all respects except the wing suture. Here the wings do not possess dark spots and the post-sternal tubercle being very long and recurved.

Keys to the Species.

Hind wings are red at the base	*rosea*, De Geer
Hind wings are not red at the base	*ranacea*, Stoll

Cyrtacanthacris rosea, De Geer
(Figs. 87 & 88)

Acridium roseum, De Geer, Mem. Ins. iii. 1773, pp. 486, n. 3, pl. 41, fig. 1.
Gryllus flavicornis, Fabricius, Mant. Ins. i, 1787, pp. 237.
Cyrtacanthacris lutescens, Walker, Cat. Derm. Salt. B.M. iii. 1870, pp. 566.
Cyrtacanthacris fortis, Walker, l.c., 1870, pp. 567.
Cyrtacanthacris rosea, Kirby, faun Brit. Ind., Orth., 1914, pp. 231.

Body is very large, greenish in colour and the antennae are yellowish. Scutellum of the vertex is hardly depressed. The frontal ridge is punctured above, smooth and sulcated below with parallel sides. Pronotum is strongly rugose, with the medium carina forming a strong ridge Tegmina are green when fresh and later changes to brownish green. They are rather broad obtusely and roundly truncate at the tips. Wings are greenish hyaline with the basal half tinged with red. Hind femora are green or with the sides yellow. Hind tibiae and tarsi are purplish red, the former with 9 to 11 yellow spines with their extreme tips black.

Three specimens are represented in the dry collection. Two of them are very old and the dates and places of collection are not known. The only one fresh specimen was collected at Walayar forest on 27th October 1966. This species is found in the small jungles of South India and has a wide distribution. They have been recorded in Assam, China, Java, Philippines, etc.

Cyrtacanthus ranacea, Stoll
(Figs. 89 & 90)

Gryllus locusta, ranaceius, Stoll, Spectres, Saut., 1813, pp. 30, pl. 11b, fig. 53.
Cyrtacanthacris inficita, Walker, Cat. Dem. Salt. B.M. iii, 1870, pp. 565
Cyrtacanthacris ranacea, Kirby, Faun. Brit. Ind., Orth., 1914, pp. 231.

Body is large, coloured reddish brown mixed with yellow. Head is pale with brownish vertica lines below the eyes and bordering the carinae. Antennae are yellow, the frontal ridge is sulcated with the borders slightly undulating, smooth in the male and punctured above and on the sides in the female. Eyes are bordered behind with dark brown, a pale median line or stripe running from the scutellum of the vertex over the pronotum and the suture of the tegmina. Pronotum possesses fine scattered raised whitish granules, and the hinder lobe is punctured in the female. It is coloured red with the median carina and the borders pale ; and a pale band on the side which is much expanded and with dusky punctures on the hinder lobe. Abdomen and legs are reddish. Hind femora possess the outer central area whitish, the knees marked with dark brown or black. Hind tibiae possess 6 to 8 whitish spines with dusky tips. Tegmina are yellowish subhyaline,with dark spots along the costa, and many angular spaces on the median area bounded and reticulated with brown. Wings are slightly dusky hyaline, tinged with yellow, but not reddish towards the base.

About twelve specimens are represented in the dry collection. The fresh specimens were collected from Walayar forest. In South India this species is recorded from Coonore and Nilgiris. It is also distributed in Ceylon and Arabia.

Genus Chondracris, Brunn.

Very large or gigantic among the South Indian Grasshoppers. Tegmina are uniformly coloured yellowish green. Wings are hyaline and red, brighter towards the base.

Body is very large, coloured brown and as long as the pronotum. Pronotum is highly granular with highly elevated and prominent ridges or carina. Tegmina and wings are very long and extend much beyond the length of the abdomen. Tegmina are yellowish green. Wings are hyaline and red and brighter towards the base. Hind femora possess two white bands separated by a middle brown band. Hind tibiae are hairy, reddish brown with 8 to 9 white spines tipped with black. Tarsi are also hairy and reddish in colour.

Chondracris rosea, Uvarov.
(Figs. 91 & 92).

Gigantic in appearance, measuring about 9 cms. in length. The body is coloured brown mixed with ochre. Antennae are yellowish brown and as long as the pronotum. Eyes are prominent. Pronotum is granular with highly elevated and prominent ridge or carina. Tegmina and wings are very long and extend much beyond the length of the abdomen. Tegmina are yellowish green. Wings are sub-hyaline and red, brighter towards the base. Hind femora possess two white bands separated by a middle brown band. Hind tibiae are hairy, reddish brown with 8 to 9 white spines tipped with black. Tarsi also are hairy and reddish in colour.

One old specimen, the date and place of collection not known, and another freshly collected one from Walayar forest are represented in the dry collection. Two specimens collected from East Godavari are represented in the wet collection. This species is rarely found and get mixed with the previous species, *Cyrtacanthacris ranacea* in the shrub jungles of the Western Ghats of South India. They were also recorded in certain parts of Cyelon, Burma and other regions of North India.

Genus Schistoceca, Stal.
or
Gregaria, Forsk.

Schistocerca, Stall, Recens Orth.i, 1873, pp. 64.
Schistocerca, Kirby Faun Brit, Ind. Orth. 1914 pp. 232.

Prothorax is rather short and strongly constricted in the middle.

This genus possesses the general characters of Orthacanthacris, but the cerci of the male are rather short, compressed and laminated, and the subgenital lamina is triangularly emarginate. In the female the cerci are short and pointed and the lower valves of the ovipositor are not dentated at the base. Hind tibiae possess about 8 spines on the outer and 11 on the inner carina.

Schistocera tatarica, Linnaeus.
(Figs. 93 & 94).

Gryllus locusta tataricus, Linnaeus, Syst. Nat. (ed. x), i, 1758, pp. 432.
Acridium peregrinum, Oliver, Voy., Emp, Othom iv, 1804, pp. 388.
Gryllus migratorius, Thunberg. Mem. Sc. Petersb. v., 1815, pp. 244.
Gryllus rufescens, Thunberg, 1. c. 1815 pp. 245.
Acridium flaviventre. Burmeister, Hindb. Ent. ii, 1838, pp. 631.
Acridium seltatum, Walker, Car, Derm. Salt. B.M. iii, 1870, pp. 585.
Schistocerca tatarica, Kirby Faun. Brit. Ind., Orth, 1944, pp.232.
Locusta migratoria, Linnaeus, Described and recorded in Ramanathapuram district in 1954 (Ref. India Journal of Entomology, 18 (2) 112-22 by Dr. A.R. Seshadri.

Body is yelloswish dull brown, frontal ridge is smooth and slightly sulcated. Pronotum is thickly punctured, expanded and rounded behind. Tegmina are long, subhyaline covered with irregularly transverse brown reticulate spots. The wings are more than twice as long as broad hyaline, slightly stained with yellow or at the base. Hind knees (hind joints) are marked with black.

Only one old and incomplete specimen is represented in the dry collection. The date and place of collection are not known. It has a vide range of distribution, i.e., Sind, Nepal, Assam, Ceylon, Mediteranian region, Western Asia, South and Central America. It was also recorded in Ramanathapuram district by Dr. A. R. Seshadri, during 1954, and in the Indian Journal of Entomology 18 (2): 112-22. He has published an article giving its description and its range of distribution and also their efficient migratory movements.

Genus Pelecinotus, Bolivar.

Pelecinotus, Bolivar, Ann. Soc. Ent. France, lxx, 1902, pp, 619.
Pelecinotus, Kirby, Faun. Brit, Ind., Orth, 1914, pp. 233.

Crest is less high. Tegmina are short and ovate. Wings are long and rudimentory.

Body is short and moderate in length and darker in colour. Vertex is very broad between the antennae suddenly narrowing before the ocellus and with the margins sub-paralleled as far as the clypeus. Antennae are filiform, rather thick in the male and slender in the female. Pronotum is rather short in front, long and pointed behind i.e., hinder lobe is shorter than the front lobe ; the back is compressed and cristate throughout its whole length. The crest is more or less excavated and less high. It is not interrupted by the sulci which are obsolate on the summit of the crest. Tegmina are rudimentary, short, broad, lateral and lanceolate. Wings are obsolate. Legs are thick with the dorsal area of the femora very broad and the carinae spinose. Hind tibiae possess inner and outer rows of spines extending equally far towards the base.

Keys to the Cpecies.

1.	Head is rugose, large depressed black punctures are present along the sides of the pronotum.	*brachypterus*, Bol.
	Head is smooth. The crest of the pronotum is more raised and deprived of black punctures. Hind margin has a white or yellowish-white border.	*cristagalli*, Bol.

Pelecinotus brachypterus, Bolivar.
(Fig. 95).

Pelecinotus brachypterus, Bolivar, Ann. Soc. Ent., France, ixx, 1902, pp. 620, pl. ix fig. 35.
Pelecinotus brachypterus, Kirby, Faun, Brit Ind., Orth, 1914, pp. 233.

Body is of moderate size and is coloured greenish in the live condition which in the dead specimen changes to light brown. Head is rugose. The vertex is almost perpendicular and slightly sloping. Antennae are brown towards the tips in a living specimen. Pronotum is sharply tectiform short in front, pointed behind and the medium carina compressed and smooth. When viewed laterally it is obtusely arched in the male and straight or slightly sinuated in the female. It is arched and excavated behind. The large and black depressed punctures are present along the sides of the pronotum. The hind sulcus is present behind the middle of the pronotum. From the area of the pronotum is sparingly tuberculate with the hind area thickly rugose-punctate and the

hind border thickened which is often yellow. Tegmina are rudimentary and are as long as the hind lobe of the pronotum. Wings are very short. Hind femora are spinose above and below with the obtuse tubercles on the outer carina. Hind tibiae are reddish in the male and yellow in the female with the black-tipped spines. Supra-anal laminae in the male are triangularly produced and pointed, which in the female is rather compressed, with its tip obtuse. The subgenital lamina of the male is compressed, carinated and pointed.

Three very old incomplete specimens are represented in the dry collection and their date and place of collection are not known. Ten specimens collected from Kodaikanal are represented in the wet collection. The range of distribution is supposed to be restricted to South India.

Pelecinotus cristagalli, Bolivar.
(Fig. 96).

Pelecinotus cristagalli, Bolivar, Ann. Soc., Ent. France. ixx, 1902, pp. 620, pl. ix, fig. 36.
Pelecinotus cristagalli, Kirby, Faun. Brit. Ind., Orth., 1914, pp. 234.

This species resembles the previous one in many respects. Body is usually smaller than the previous species. The head is smooth but not rugose. The frontal carinae are scarcely raised and almost interrupted at the ocellus. The crest of the pronotum is raised and arched. It is crenulated, but not punctured with black on the sides, with the hinder border broadly whitish or yellowish-white, with the hinder angle pointed. But the lower part of the tip is obtuse. Hind tibiae are long.

Two old incomplete specimens are represented in the collection. The places and dates of collection are not known. The range of distribution is supposed to be restricted to South India.

Genus Teratodes, Brulle,

Teratodes, Brulle, His., Ins. ix, 1835, pp. 222.
Teratodes, Kirby, Faun. Brit. Ind., Orth., 1914, pp. 234.

Mesosternal lobes are not converging and the angles are rounded. Prosternal tubercle is acuminate. The thorax possesses a crest which extends sometimes above the head. The crest is simple, very high and compressed. Tegmina rarely extend beyond the apex of the abdomen. Hind femora possess serrated carinae.

Body is stout and green. Head is broad, rounded above and the face vertical. Frontal ridge is very shallow, parallel-sided from the ocellus to the clypeus, but the carinae diverge above the antennae. Antennae are short, filiform, rather thick, widely separated at the base with indistinct joints. Pronotum is large, raised sublaminately compressed, the front arched above the head in a pointed manner, the middle forming a high crest, denticulated especially behind and covering half the length of the abdomen. The sides of the abdomen are granulated, the extreme tip being pointed and curved up. Prosternal tubercle is pointed. Legs are rather short. Hind femora bear short spines on the upper carinae and longer ones below. Hind tibiae possess 9 to 10 spines. Tegmina are opaque, longer or shorter than the abdomen. Wings are hyaline.

Teratodes monticollis, Gray.
(Figs. 97 & 98)

Gryllus monticollis, Gray, Gryffith's Anim Kingd. xv, 1832, pp. 215. pl. 64.
Teretodes monticollis, Kirby, Faun Brit. Ind. Orth, pp. 235.

Body is stout and large which is uniformly coloured green. The antennae, a part of the dorsal surface of the crest of the pronotum, the upper carina of the hind femora and the hind tibiae are generally yellow or reddish-yellow or reddish. Within the outer upper carina of the femora is found a row of pale spots in some specimens. Tegmina are opaque, uniformly green, thickly reticulated. Wings are pale greenish and hyaline.

Five old specimens are represented in the dry collection. The date and place of collection are not known. Two specimens collected from Madras are represented in the wet collection. This is a rare species which has been recorded up to Bombay in South-India. It is also found distributed in Ceylon.

Genus Euconfacra, Bolivar.

Euconfacra, Bolivar, Ann. Soc. Ent. France (s.), 1902, pp. 623, 625.
Euconfacra, Kirby, Faun. Brit Ind., Orth., 1914, pp. 240.

The frontal costa are distinctly widened between the antennae and wider than the vertex between the eyes. Tegmina are well developed and obliquely truncate at the apex.

The frontal is distinctly expanded between the antennae, the lateral carinae of the front being parallel and sinuous in the middle. The fastigium of the vertex is transverse, sloping, arched into the costal ridge. Antennae are filiform and not depressed at the base. The third joint is distinctly narrower than second. Tegmina are well developed and the tip is oblique but not sinuated. The costa of the wings is truncated at the tip. Hind femora bears a black area at the lower outer region, with the longitudinal carina. Hind tibiae are sinuated.

Euconfacra praemorsa, Stal.

(Figs. 99 and 100).

Acridium (Catantops) praemorsum, Stal, Enumies. Reas. Orth., 860, pp. 330.
Acridium saturatum, Walker., Cat Derm, Salt, B.M. iv, 1870, pp. 628 (n. syn.).
Calopternus strigifer, Walker, op. cit. v, Suppl. 1871, pp. 68.
Catantops praemorsa, Brunner, (not Stal), Ann. Mus. Genova xxxii, 1893, pp. 15.
Euconfacra praemorsa, Kirby, Faun. Brit. Ind., Orth., 1914, pp. 240.

Body is moderately small with brownish-testaceous colour. Front is thickly punctured, unsulcated with the frontal ridge obtuse and expanded between the antennae. It is bound by distinct parallel carinae. The cheeks are provided with well marked carina below the eyes. Antennae are filiform, contracted at the base, hardly longer than the head and pronotum together. Pronotum is narrowed in front, rather convex truncated at the extremity, forming an obtuse angle rounded off at the tip. The median carina of the pronotum is continuous and not interrupted by the sulci, the first and second of which extend far into the lateral lobes, and the third is wholly dorsal. Tegmina extend beyond the hind femora, having subparallel sides and truncated at the tips. They are hyaline beyond the middle with oblique obsolete transverse dusty markings. Wings are greyish-hyaline, greenish towards the base and slightly clouded at the tip. Hind femora extend beyond the abdomen with a black spot before the tip on the upper inner area, the lower area being brown and the carina marked with dark brown. The inner surface of the hind tibiae and tarsi are red and the spines are tipped with black.

Five old specimens and three freshly collected ones are represented in the collection. The latter specimens were collected from Wayanad forest. They have a wide range of distribution in India, viz., from Bombay to Madras, Burma and China.

Genus Catantops, Schaum.

Catantops, Schaum, Berch. Akad. Berlin, 1853, pp. 779.
Catantops, Kirby, Faun. Brit. Ind., Orth., 1914, pp. 246.

Prosternal tubercle is cylindrical and obtuse at the apex. Mesosternal lobes in both sexes are contiguous, rarely slightly separated in female. Posterior tibiae possess at least nine spines on the outside.

Body is considerably small with darker or lighter shade of brown. Head is considerably produced between the antennae with the vertex gradually sloping into the frontal ridge which is nearly parallel-sided and hardly sulcated. The face is oblique. The eyes are oval, oblique and approximating above. Antennae are filiform. Pronotum is carinated in the middle with the sulci rather indistinct. The hind-most part of the pronotum is placed above the middle and the hind border obtusely angulated. Prosternal tubercle is stout and obtuse. Mesosternal lobes are transverse and the metasternal lobes contiguous. Tegmina and wings are well developed. Hind femora are moderately thickened, serrated above and often with black markings.

Key to the Species.

1. Pronotum is light brown with ill-defined yellowish vitta on each side. The tegmina are long, brown, with the radial area spotted with brown.	*acuticercus*, Bol.
2. Tegmina are rather dark fuscous brown, especially anteriorly. Wings are yellowish-fuscous.	*splendens*, Thumb.
3. Frontal ridge is parallel and rather deeply channeled in the middle.	*humilis*, Serv.
4. Posterior femora with two or three black dots on the carina close to the apex. Frontal is paralleled and slightly impressed in the middle.	*indicus*, Bol.

Catantops acuticercus, Bolivar.

(Figs. 101 & 102).

Catantops acuticeps, Bolivar, Ann. Soc. Ent. France. lxx., 1902. pp. 626.
Catantops acuticercus, Kirby, Faun. Brit. Ind. Orth. 1914. pp. 248.

Body is rather small with dark brown colour. Fastigium of the vertex is somewhat pointed. The frontal ridge is arched at the base with nearly parallel sides and having punctures. It is slightly concave before the ocelli. Pronotum bears ill-defined yellowish vitta on each side and rarely punctured in front, but thickly and closely punctured behind, with the front margin slightly inclined in the middle, rounded or very obtusely angulated behind, the median carina nearly obsolete in the male. Tegmina are long and extend much beyond the abdomen. The colour is varied with brown and with radial area spotted and crowded with pale nervures. Hind tibiae in fresh specimens are blue. Cerci are narrowed towards the tip which is bifid.

Only one old, incomplete, damaged specimen is represented in the dry collection. The date and place of collection are not known. This species is rarely found among the grasses in South India.

Catantops splendens, Thunberg.

(Figs. 103 & 104.)

Gryllus splendens, Thunberg, Mem. Acad. Petersb. v, 1815. pp. 236.
Gryllus splendens, Thunberg, Mem. Acad. Petersb. ix, 1824, pp. 395, 408.
Acridium luteolum, Serville, Ins. Orth. 1839, pp. 661.
Acridium fuscitibia, Walker, Ann. & Mag. Nat. Hist. (3), iv., 1859, pp. 223.
Acrydium splendens, Kirby, Faun. Brit. Ind., Orth., 1914, pp. 250.

Body is rather small with a darker brown colour tinged with greenish shade at certain places. Frontal ridge is rather broad sulcated with parallel sides. Pronotum is punctured throughout. The carina and transverse sulci are slightly marked, the hind border being very obtusely angulated and sub-rotund. The tegmina are long, extending beyond the abdomen and fuscous brown in colour. Wings are yellowish with fuscous and hyaline; hind wings are yellow with two longitudinal broad dark brown bands. Hind tibiae are red with 10 to 11 black-tipped spines. Supra anal lamina are long, pointed and compressed.

Only one old, incomplete specimen is represented in the dry collection. The date and place of collection of this specimen are not known. This species is found among the dry twigs and leaves of small shrubs. It is found distributed in India, Ceylon, Andamans, Nicobar islands, Burma, Java, etc.

Catantops humilis, Serville.

(Figs. 105 & 106.)

Acridium humile, Serville, Ins. Orth. 1839, pp. 662.
Acridium innotabile, Walker, Cat. Derm. Salt. B.M. iv, 1870, pp. 629.
Calopternus ferrugineus, Walker, op. cit. 1870, pp. 629.
Calopternus immunis, Walker, op. cit. v. Suppl. 1871. pp. 67.
Catantops humilis, Kirby, Faun. Brit. Ind. Orth., 1914, pp. 250.

Body is rather small with greenish brown colour. Frontal ridge bears parallel carinae deeply channelled in the middle. Pronotum is finely punctured with the median carina and the transverse sulci slightly elevated and well marked. The hind border of the pronotum is obtusely angulated or subrotund. Prosternal tubercle is thick and obtuse. Tegmina are rather long and mottled with white. Wings are clear and greenish-hyaline at the hinder region. Abdomen is shining and yellowish brown on the back. Hind femora are yellowish with two transverse black bands above. The tibiae and tarsi are red. Tibiae possess 10 to 11 black-tipped spines. Subgenital laminae are pointed at the tip.

Five old specimens and two fresh ones collected from Anaikatti on 26th October 1967 are represented in the dry collection. The dates and places of collection of the five old specimens are not known. This species is normally found among the grasses and shrubs of the hilly region and enjoys a wide range of distribution in India. i.e., South of Bombay, Bombay, Sikkim, Assam, West Bengal and in Ceylon.

Catantops indicus, Bolivar.

(Figs. 107 & 108.)

Catantops indicus, Bolivar, Ann. Soc. Ent. France, lxx, 1902, pp, 626.

Catantops indicus, Kirby. Faun Brit. Ind., Orth., 1914, pp, 251.

Body resembles the previous species in size and colour. Frontal ridge is very slightly impressed in the middle, narrowed towards the extremity, punctured and projecting somewhat before the ocellus. Fastigium of the vertex is nearly transverse in front of the eyes. Pronotum is thickly and finely rugose-punctate, with a slight continuous median carina. Its hinder border is obtusely angulated with the lateral lobes indistinctly brownish. Tegmina are longer than the abdomen and finely mottled with brown. The racial area of the tegmina bears pale spots. An oblique pale streak is present on the metathroax. Hind femora are transversely banded with brown above the middle and before the tip. Close to the apex of the carina are present two or three black spots. Hind tibiae are red. The cerci are expanded at the tips.

Five specimens are represented in the dry collection and all of them were collected from Anaikatti on 24th October 1967. Four specimens collected from Chilka Lake, Ganjam district, are represented in the wet collection. The dates of collection of these four specimens are not known. These are also normally found among the grasses and the bushes of the hilly regions in South India and Ceylon.

Genus Brachyxenia, Nov.

Brachyxenia, Kirby, Faun. Brit. Ind., Orth, 1914. pp. 256.

Pronotum bears a lateral carina, sometimes somewhat broken up posteriorly by puncturation. Hind femora are short and very thick with teeth on their upper edge. The body is depressed with the pronotum very flat and broad. It is produced angularly at the base, i.e., the produced part is equal in length to the anterior portion. Lateral carinae are very obscure. The tegmina and wings are short.

Body is rather small, very broad, and greyish-brown in colour. Head is broad. Eyes are prominent and slightly oval. Fastigium of the vertex is not depressed with a slight carina within each eye passing into the frontal ridge without a break. The frontal ridge is flattened, slightly sloping, the carinae being very slightly indicated between the antennae with the lateral carinae obsolate. Front part of the head is thickly and rather coursely, but not distinctly, punctured. The vertex and the back of the head are smooth. Antennae are filform, shorter than the head and pronotum together. Pronotum is broader than the head, strongly punctured and granulated with the median carina well marked in front, but evanescent beyond the middle. Lateral carinae are absent and the hinder edge of the pronotum is produced into an acute angle. Sulci are very slightly marked and undulated, the hind sulcus being placed considerably before the middle. The prosternal tubercle forms a transverse flattened lamina. Mesosternal lobes are separated by the fossae. Tegmina are as long as the abdomen, with nearly parallel sides slightly expanded on the costa near the base and with the extremity obtusely rounded. Wings are as long as the tegmina, rounded and scalloped. Hind femora are very stout, strongly ridged granulated and pubescent beneath. Hind tibiae are as long as the femora with 7 to 9 spines on the carina.

Even though this genus has a superficial resemblance to the Genus *Truethis*, Kirby had treated it nearer to *Catantops*.

Brachyxenia scutifera, Walker.
(Fig. 109).

Caloptenus scutifer, Walker, Cat. Derm. Salt. B.M. iv. 1870, pp. 704, n. 56.
Brachyxenia scutifera, Kirby, Faun. Brit, Ind., Orth, 1914 pp. 256.

Body is rather short, very broad and greyish-brown. Head, abdomen and hind femora are whitish. The granules on the pronotum and the raised striae on the hind femora are yellowish brown. The carinae, knees and the lower area of the femora possess black speckles. Tegmina bear traces of dusky markings towards the base and before the tip. Traces of blackish spaces are found towards the tips of the femora and the knees. The tibial spines and the abdominal appendages are tipped with black.

Two old specimens and one collected from Anaikatti on 26th October 1967 are represented in the dry collection . The date and place of collection of the old one are not known. It is more common in the woody forests of western ghats in South India.

Genus Heteracris, Walker

Heteracris, Walker Cat. Derm. Salt. B.M. 1870, pp. 655.
Demodocus, Stal (nec. Guerin), Bih. Svensk, Akad, Hand. v. (4) 1878, pp. 75.
Heteracris, Kirby, Faun. Brit, Ind. Orth, 1914, pp. 262.

Prosternal lobe is simple, acuminate and bent backwards at an angle about the middle. Posterior tibiae bear about twelve spines on the outer edge.

Body is stout and long. Fastigium of the vertex is slightly or not at all depressed and rounded into the frontal ridge which is broad and flattened and not sulcated. Antennae are filiform. Pronotum bears a distinct median carina which is cut by three shallow sulci. The lateral carinae are slightly indicated and obsolete behind. Prosternum is stout, more or less pointed and directed backwards. The space in between the mesosternal and metasternal lobes is narrow, i.e., longer than broad, Tegmina and wings are longer and narrow. Hind legs are very long with their femora moderately thickened at the base and tapering beyond the middle, extending beyond the abdomen. Hind tibiae bear 12 to 14 spines.

This genus is also spread over Africa, Australia and Oriental regions.

Heteracris capensis, Thunberg.
(Figs. 110 & 111).

Gryllus capensis, Thunberg. Mem. Acad. Petersb. v., 1815, pp. 240.
Gryllus capensis, Thunberg., Mem. Acad, Petersb. ix. 1824, pp. 399, 423. pl. xiv. fig. 6.
Heteracris insignis, Walker, Cat. Derm., Salt, B.M. iv., 1870, pp. 663, 664. (n. syn.).
Heteraeris capensis, Kirby, Faun. Brit, Ind., Orth, 1914, pp. 262.

Body is moderately large with yellowish-brown colour. Fastigium of the vertex is short and rounded and towards the extremity a black line is prominent below. The frontal ridge is sparingly punctured like that of the face and not much expanded. The vertex and the back of the pronotum possess a uniformly broad brown longitudinal stripe which is broadly bordered with yellow on both the sides. Pronotum is thickly punctured, with large punctures on the ridge behind the imperfect lateral carinae and being brownish with two large whitish pits above on the anterior lobes. Abdomen is reddish. Hind femora are reddish above and yellowish below. Hind tibiae are reddish with 11 to 13 black-tipped spines. Tegmina are longer, subhyaline with brown nervures and numerous spots which completely fade in old specimens. Wings are greyish hyaline.

Two old specimens are represented in the dry collection. The date and place of collection are not known. This species is found in the bushes and grasslands of Coromandal coast of Madras Bengal, Himalayas, Burma, Ceylon, China and even South Africa

Genus Tylotropidius, Stal.

Tylotopidius, Stal, Recens. Orth., i , 1873, pp. 74.
Tylotropidius, Kirby, Faun, Brit. Ind. Orth., 1914, pp. 265

Prosternal lobe is bilobed at the apex. Posterior tibiae possess about 18 spines. Hind femora are slender. much narrower towards knees, extending beyond the apex of the abdomen and without or scarcely denticulate.

Body is of moderate small size. The fastigium of the vertex bears two depressions at the base Front is oblique. The front and the hind lobes of the pronotum are of equal length with the lateral margins smooth and callous and more or less converging. Tegmina and wings are well developed, the former being densely reticulate in the post-radial area, with no intercalated nervure. About 18 spines are present in the hind tibiae The hind tarsi are very long and the second joint half as long as the first. Anal segment of the male is not enlarged and the cerci being narrow and compressed. Prosternal tubercle is bifid. The mesosternal lobes of the female is truncated on the inner side and connected by a straight suture.

Tylotropidius varicornis, Walker.
(Figs. 112 & 113.)

Heteracrts varicornis, Walker, Cat., Derm., Salt, B.M., iv. 1870, pp. 667.
Tylotropidius ceylonicus, Brunner Ann. Mus. Geneva, xxxIII, 1893, pp. 164. pl. v. fig. 57 (in syn).
Tylotropidius varicornis, Kirby, Faun. Brit., Ind, Orth, 1914, pp. 265.

Body is somewhat of moderately small size. Pronotum is brown with the lateral carinae pale, curving backwards where they become evanescent and hinder border being somewhat roundedly angulate. Prosternal tubercle is compressed, truncated and slightly bituberculate at the extremity. Tegmina are castaneous with a row of triangular whitish spots on the radial nervure and a pale longitudinal stripe in the costal area. Wings are bluish hyaline. Hind femora are thickened at the base, very slender towards the tips, the upper carinae being sparsely serrated, with the sulci of the outer area marked with brown and two spots on the inner surface. Hind tibiae are dull blue towards the extremity possessing 12 to 15 spines on the outer carina. Tarsi are dull blue, supra-anal lamina of the male is elongated triangular and sulcated. Cerci are straight rounded or slightly compressed and acuminate.

Five old specimens are represented in the dry collection. The dates and places of collection are not known. Two specimens (one collected from Kalakkad forest and one from Dhoni fores.. are represented in the wet collection. This species is found in the hilly shrubs and distributed throughout South India, Ceylon and Burma.

Genus Euprepocnemis, Fieber

Euprepocnemis, Fieber, Lotos, iii, 1853, pp. 98.
Euprepocnemis, Fieber, Lotos, iv. 1854, pp. 9.
Euprepocnemis, Stal, Recens, Orth, i, 1873, pp. 75.
Euprepocnemis, Kirby, Faun, Brit, Ind., Orth, 1914, pp. 267.

Tegmina and wings are fully developed. Prosternal lobe is straight and obtuse at the apex. 8 to 10 spines are present on the outer edge of the posterior tibiae.

The body is of moderate size. The vertex is horizontal, impressed, front sloping with the frontal ridge, obtuse and sulcated. Antennae are filiform, longer than the head and pronotum together. Pronotum is truncated in fornt, rounded and subtruncated behind. The disc is smooth in front punctured behind, with the median carinae, slightly raised and intersected only by the third sulcus. The lateral carinae are straight and slightly diverging. Front lobe of the pronotum is longer than the hind lobe. Tegmina and wings are well developed. Prosternal tubercle is obtuse towards the tip, and sloping. The mesosternal lobes are approximating, with the inner margin rounded. The metasternal lobes extend behind the foveolae and contiguous. Anal segment of the male is not enlarged, the supraanal lamina is triangular and slightly sulcated at the base. The cerci are compressed and pointed or laminated. Supragenital lamina is slightly produced and obtuse.

Keys to the species.

1. Hind tibiae possess a black longitudinal stripe on the outer side .. .. *alacris*, Serville.
2. Hind tibiae possess no black stripe .. .. *pulchra*, Bolivar.

Euprepocnemis alacris, Serville.
(Figs. 114 and 115.)

Acridium alacris, Serville, Ins., Orth. 1839, pp. 682.
Acrydium deponeus, Walker, Ann. Nat. Hist. (3), iv, 1859, pp. 222.
Heteracris rudis, Walker, Cat. Derm. Salt, B.M. iv., 1870, pp. 662, 664.
Euprepocnemis plorens, var *intermedia*, Bolivar. Ann. Soc. Ent. France, ixx, 1902, pp. 630.
Euprepocnemis alacris. Kirby, Faun, Brit., Ind., Orth., 1914, pp. 267.

Body is of moderate size with light yellowish colour. A black streak below each eye and a broad velvety dark brown sub-parallel sided stripe runs over the vertex and pronotum. Median carina is narrow and the lateral borders are rather broadly yellow. Tegmina are sub-hyaline, with numerous pale brown spots, which towards the base form a linear series divided by pale spaces. The costal area of the tegmina is unspotted and the inner marginal area is slightly spotted towards the base. Abdomen is shiny greenish brown. Hind femora are yellow with a longitudinal black streak on the outer surface. Tibiae and tarsi are purplish-brown, the former with two pale bands towards the base, with about 10 white black-tipped spines.

Only one old specimen is represented in the dry collection. This specimen is rarely found in the bushes of the hilly regions in the lower half of South India and Ceylon.

Euprepocnemis pulchra, Bolivar.
(Figs. 116 and 117.)

Euprepocnemis pulchra, Bolivar, Ann. Soc. Ent. France, ixx, 1902, pp. 630.
Euprepocnemis pulchra, Kirby, Faun., Brit., Ind., Orth., 1914, pp. 268.

Body is olivaceous brown and the size varies from moderate to small. Head is pale reddish brown and broadly banded with black below the eyes with the front slightly oblique. The frontal ridge is nearly parallel-sided, narrowed towards the clypeus and impress-punctate. Fastgium of the vertex is smooth, and slightly sulcated. Antennae are pale below and brown above. Pronotum bears a broad black stripe on the back and it is disnctly expanded and paler in the middle with greenish yellow borders. The median carina is compressed in front, with the defiexed lobes testeceous brown in colour. Tegmina extend beyond the hind femora in the male, but not in the female, which is thickly spotted with brown or green. Hind femora are free from black stripe on the outer side and they are pale possessing a broad band or ring. Hind tibiae are brown at the base with a pale ring, the apical half being dull red and the spines tipped with black. Cerci are compressed and curved.

Seven old specimens and one fresh specimen collected from Walayar are represented in the dry collection. The dates and places of collection of the old specimens are not known. This species is rarely found distributed in the hilly areas of the lower half of South India.

Genus Paraeuprepocnemis, Brunner.

Paraeuprepocnemis, Brunner, Ann. Mus. Geneva, xxxiii, 1893, pp. 151.
Paraeuprepocnemis, Blanchi, Prem. Loz, Ross. Imp., 1902, pp. 174, 205, 320.
Paraeuprepocnemis, Kirby, Faun., Brit., Ind., Orth., 1914, pp. 266.

Tegmina and the wings are short and allied to the above genus, i.e. Euprepocnemis in possessing straight prosternal lobe and obtuse at the apex. Posterior tibiae possess 8 to 12 spines on the outer edge. Wings are not well developed and rudimentary.

This Genus is allied to the above genus, *Euprepocnemis*. Pronotum is truncated behind Tegmina are lobiform and the wings are rudimentary. Hind tibiae bear 8 to 12 spines. The cerci in male are compressed and sulcated above.

Paraeuprepocnemis pictipes, Bolivar.
(Fig. 118.)

Paraeuprepocnemis pictipes, Bolivar, Ann. soc. Ent. France, ixx, 1902, pp. 631.
Paraeuprepocnemis pictipes, Kirby, Fa n., Brit., Ind., Orth., 1914, pp. 266.

Body is considerably small with reddish-brown colour. Fastigium of the vertex is obtusely and slightly produced and regularly curving into the frontal ridges which is marked with rows of compressed points. Antennae are filamentous, short and reddish. Pronotum is opaque brown above with the carina more shinning and the hind border roundly truncate. Upper part of the lateral lobes bear a large opaque shinning black blotch, bordered with pale shades and with punctures on the lower and hind margins. Tegmina are short, lanceolate and not longer than the pronotum. Front femora are thicker in the male and thinner in the female. Hind femora are shining red beneath and the outer area brown with an oblique yellow band at the base. Hind tibiae are red with the base more or less brown, with a pale ring. Abdomen is varied with shade of brown. Supra-anal lamina of the male is broadly laminated with a short sulcus at the base and middle. Cerci are short and pointed.

Three old damaged specimens are represented in the dry collection. This species is very common and found distributed in the lower parts of South India.

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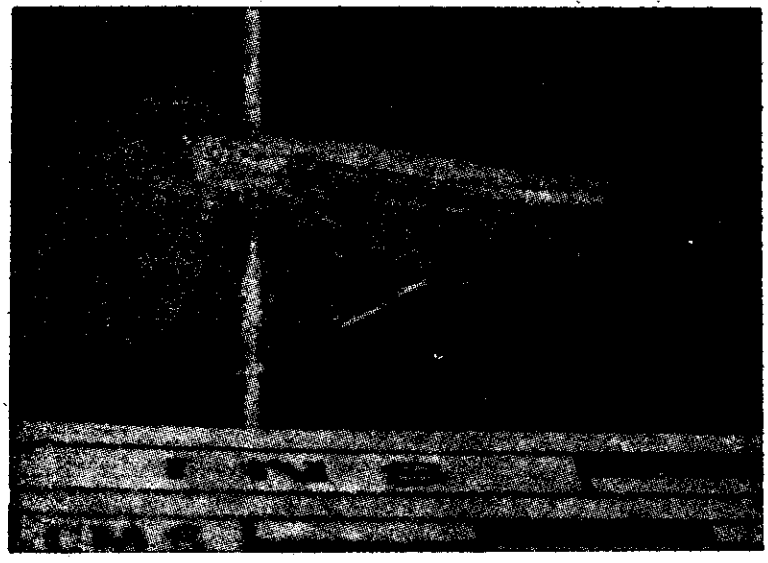

Fig. 1—SCELIMENA HARPAGO, Serville.

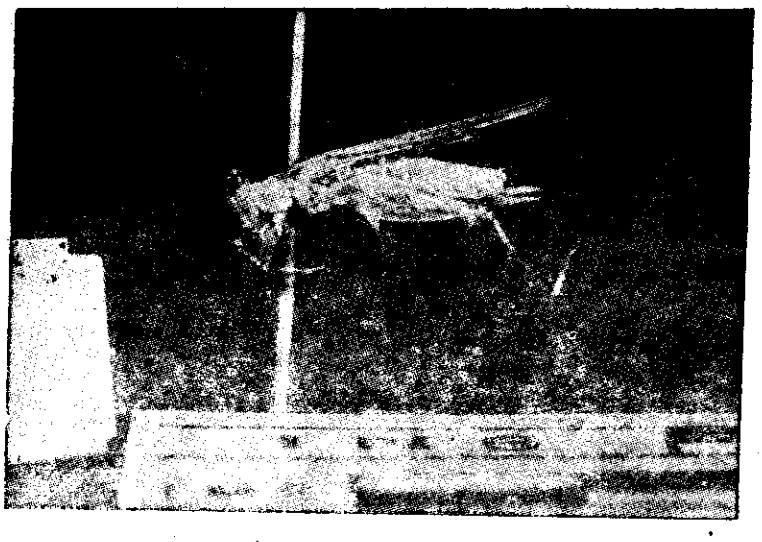

Fig. 2—SYSTOLEDERUS GREENI, Bolivar.

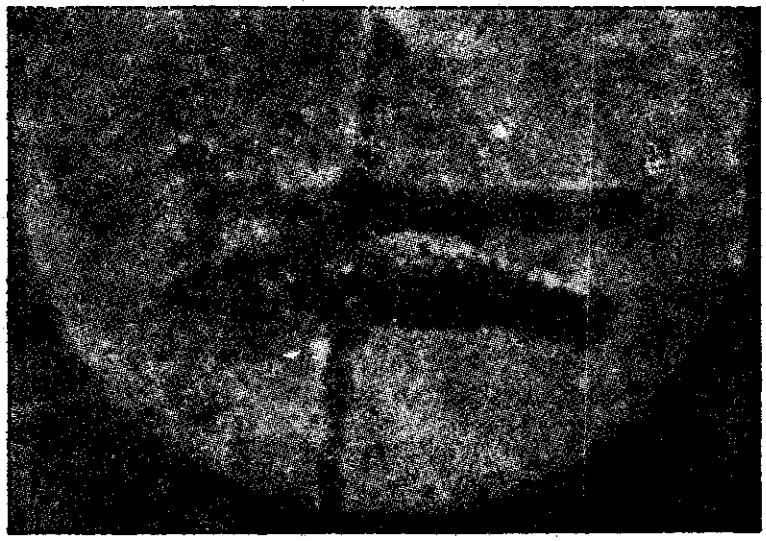

Fig. 3—MAZERREDIA CRISTULATA, Bolivar.

Fig. 4—EUPARATETTIX VARIABILIS, (Bolivar).

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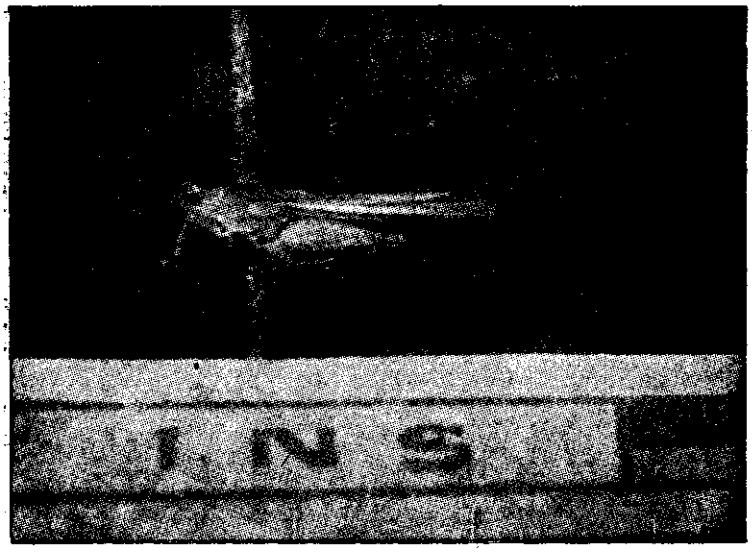

Fig. 5—EUPARATETTIX SCABER, Thunberg.

Fig. 6—EUPARATETTIX CORPULENTUS, Hancock.

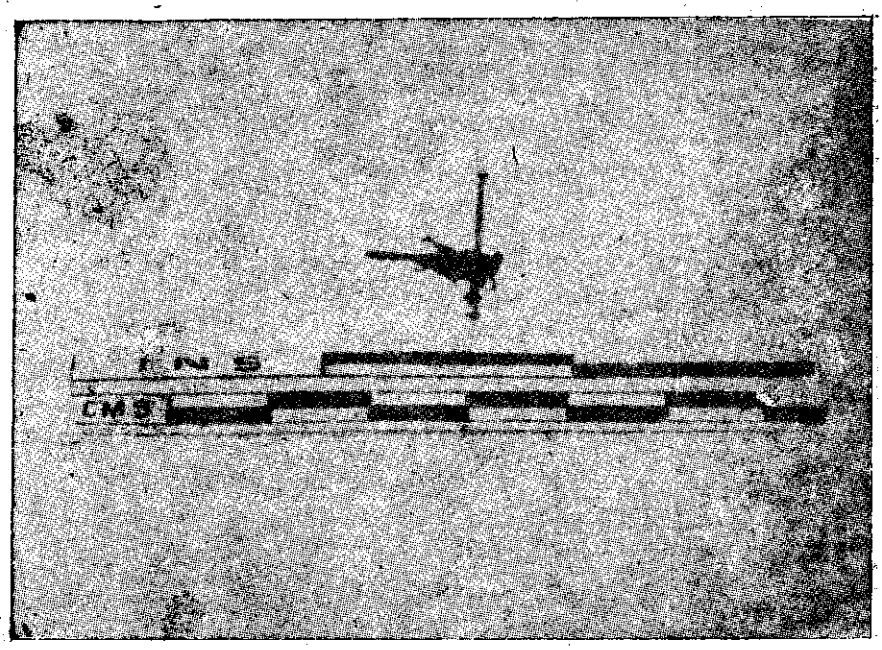

Fig. 7—EUPARATETTIX PERSONATUS, Bolivar.

Fig. 8—PARATETTIX CINGALENSIS, Walker.

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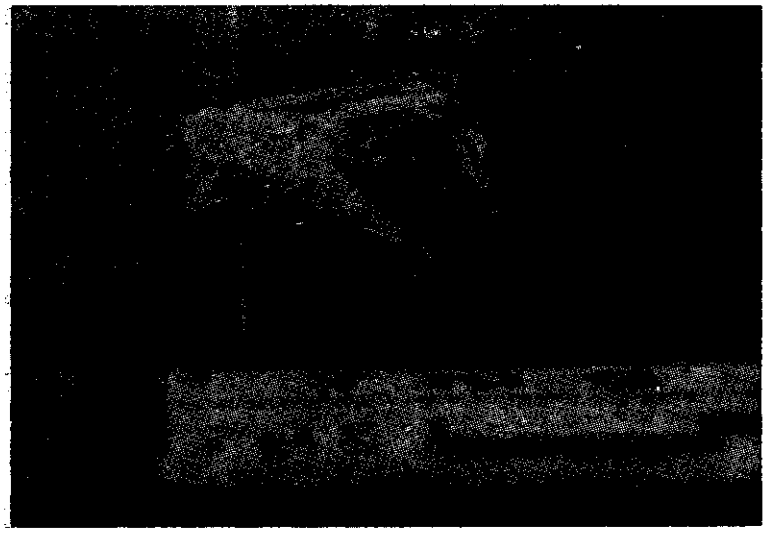


Fig. 9—PARATETTIX INDICUS, Bolivar.

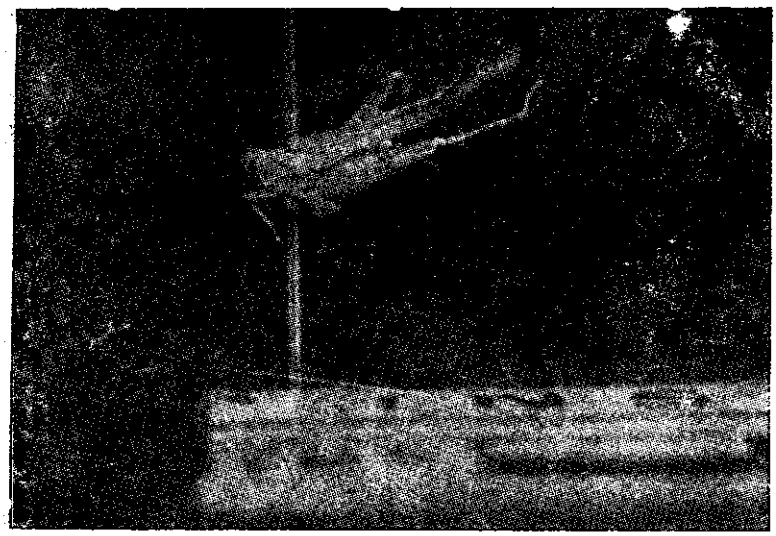
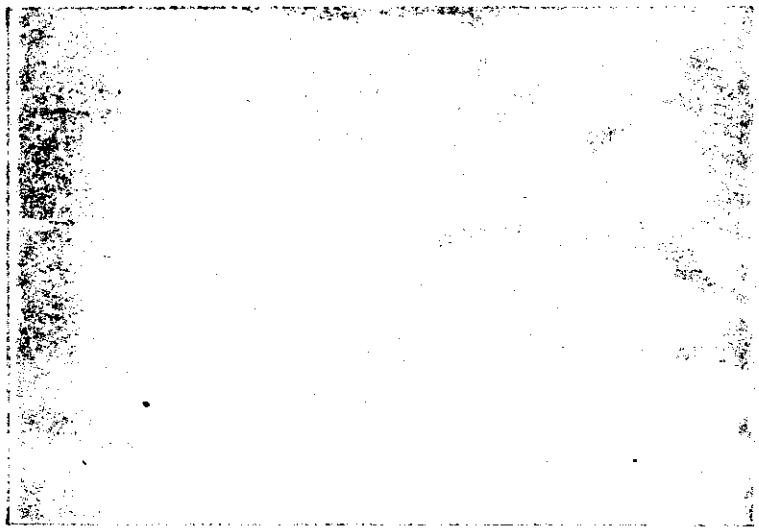
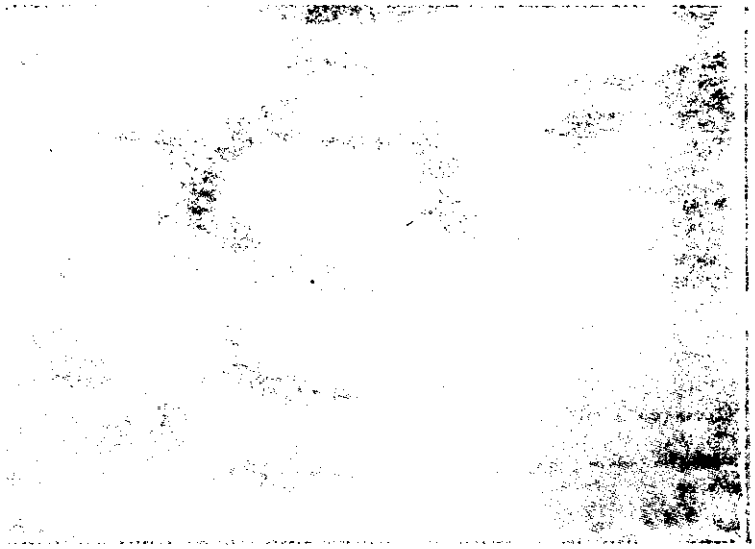
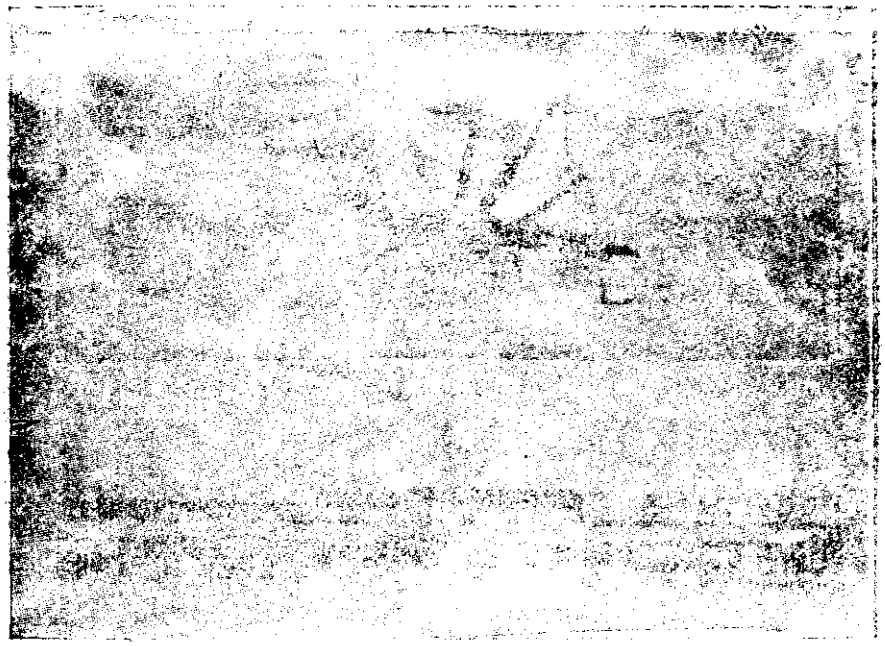
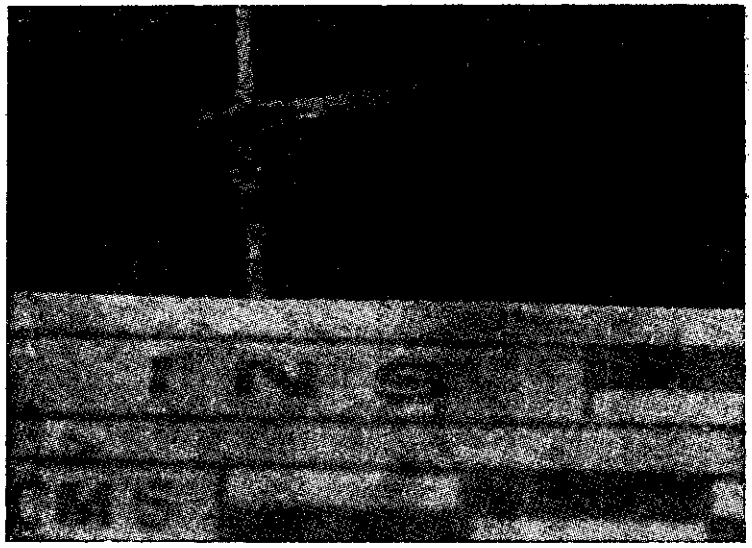


Fig. 10—ERGATETTIX TARSALIS, Kirby.









Pig. 11—HEDOTETTIX ATTENUATUS, Hancock.

Fig. 12—COPTOTETTIX TESTACEUS, Bolivar.

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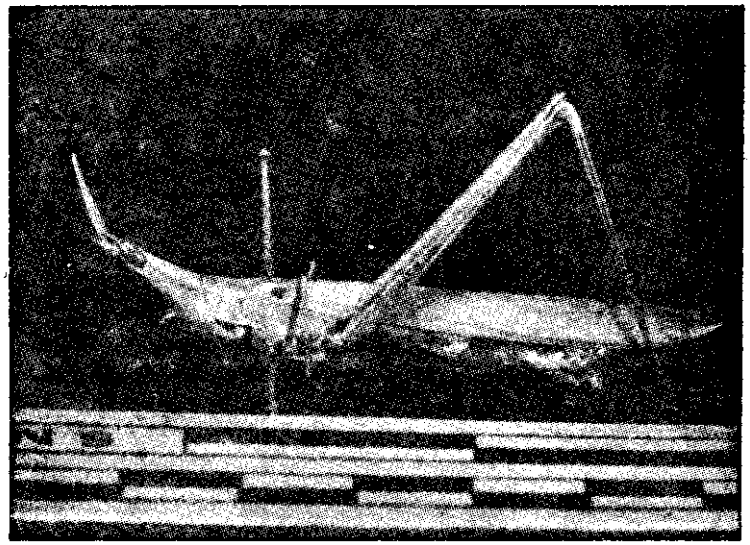


Eig. 13 –ACRIDA TURRITA, Linnæus.

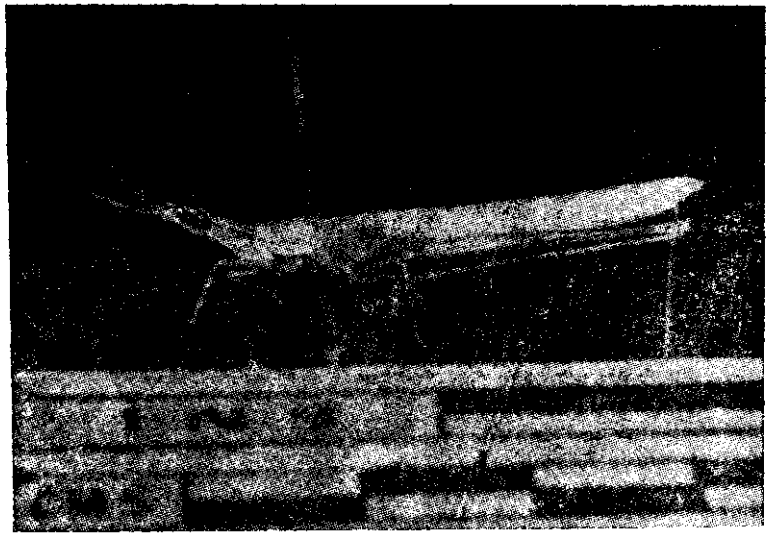
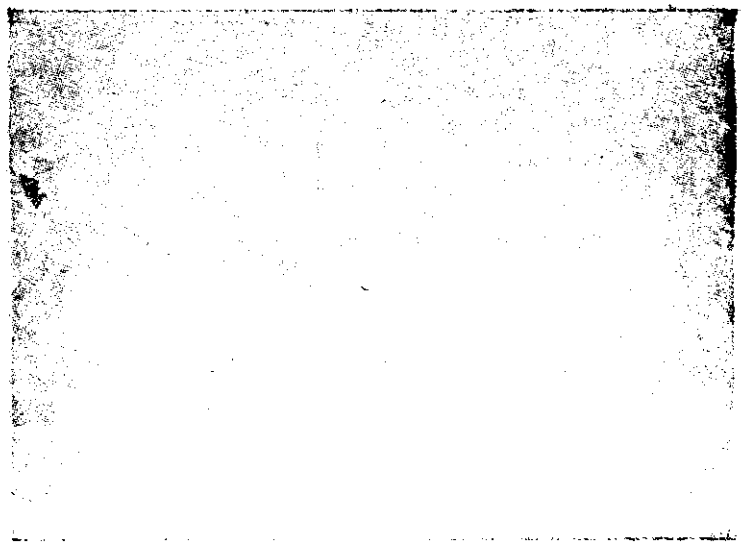
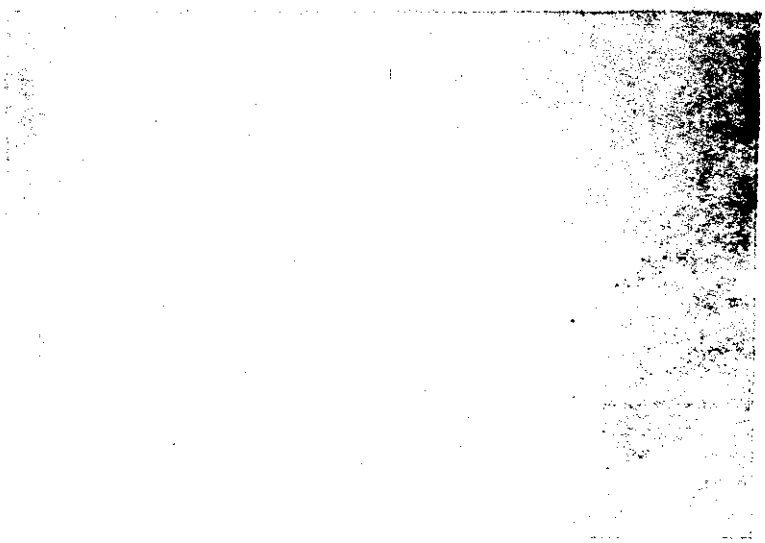


Fig. 14 –ACRIDA LUGUBRIS, Burr.





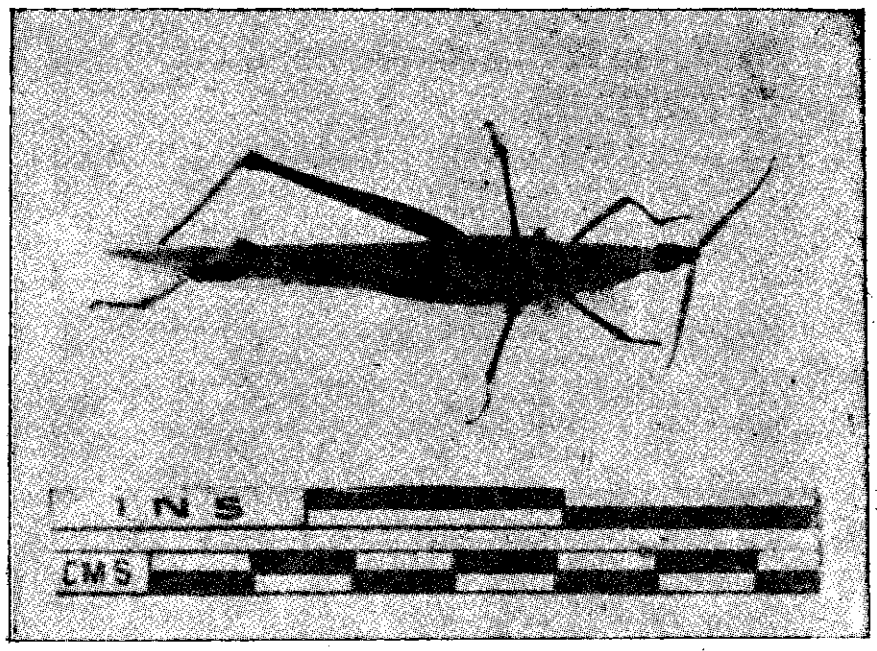


Fig. 15—ACRIDA LUGUBRIS, Burr.

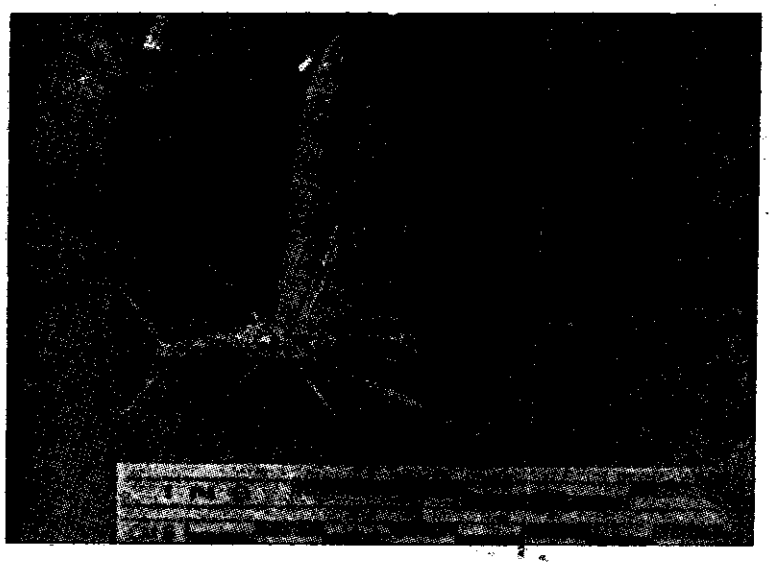


Fig. 16—ACRIDA EXALTATA, Walker.

Fig. 17—ACRIDA EXALTATA, Walker.

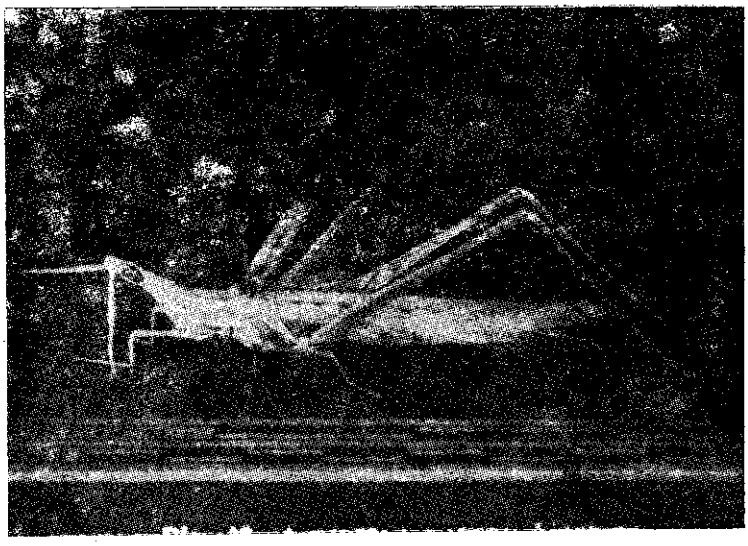


Fig. 18—ACRIDELLA NASUTA, Linnaeus.

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Fig. 19—ACRIDELLA NASUTA, Linnaeus.

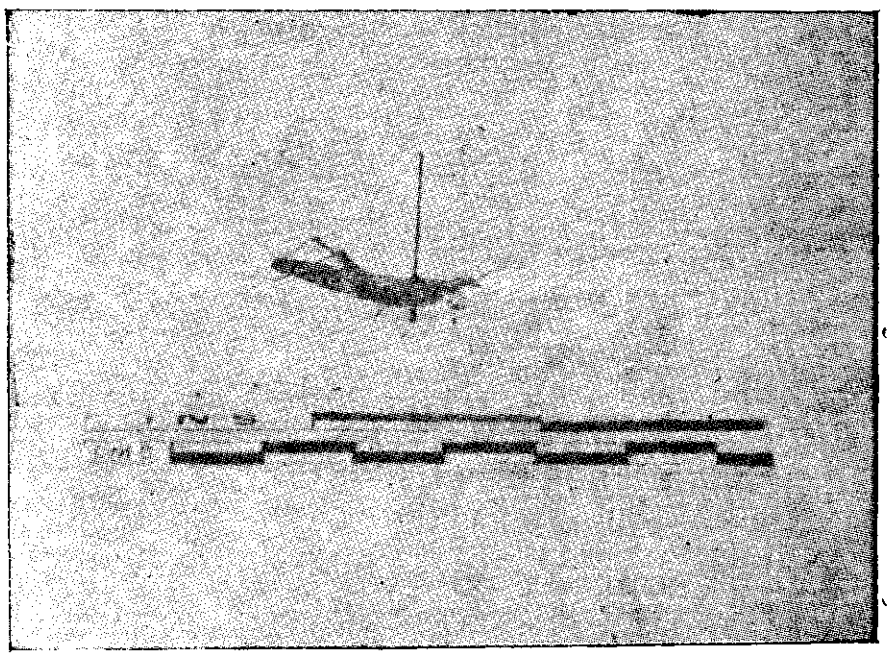

Fig. 20—PARAPHLAEOBA CARINATA, Bolivar.

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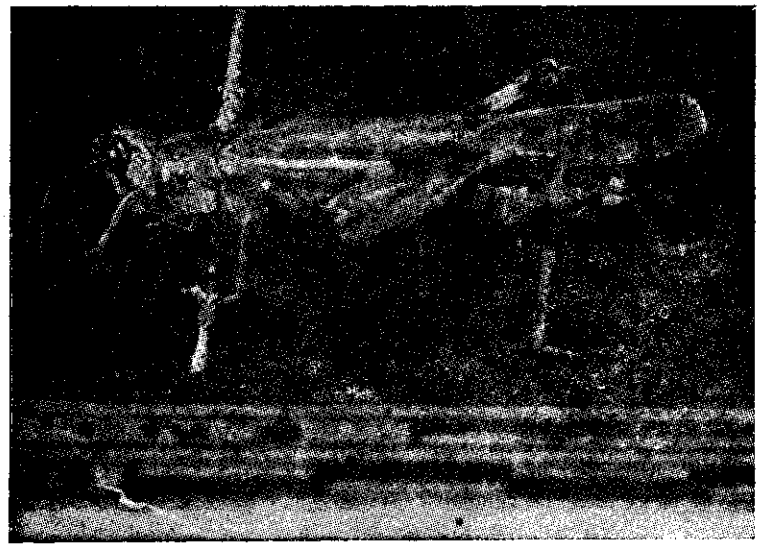

Fig. 21—AELOPUS TAMULUS, Fabricius.

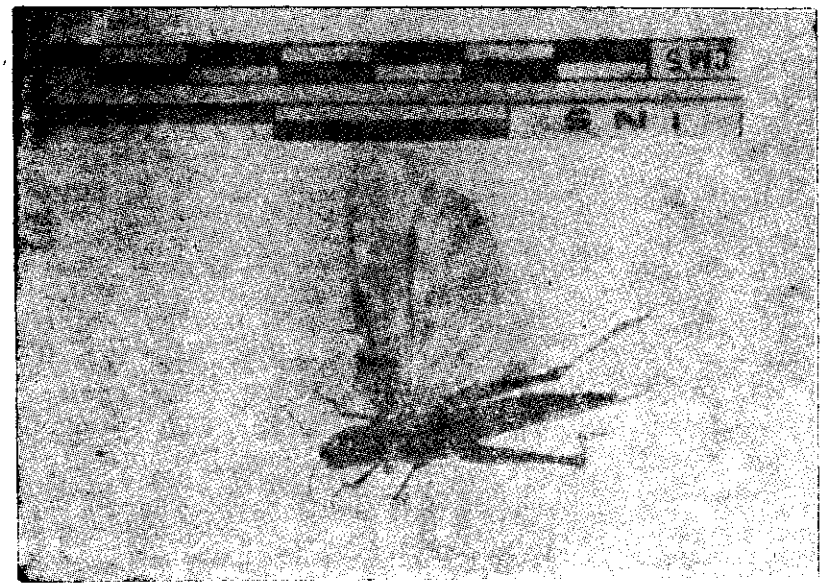

Fig. 22—AELOPUS TAMULUS, Fabricius.

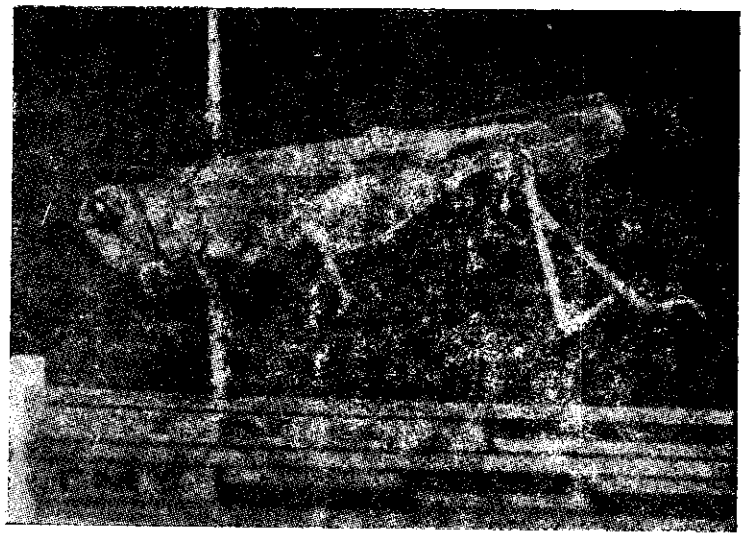

Fig. 23—AELOPUS AFFINIS, Bolivar.

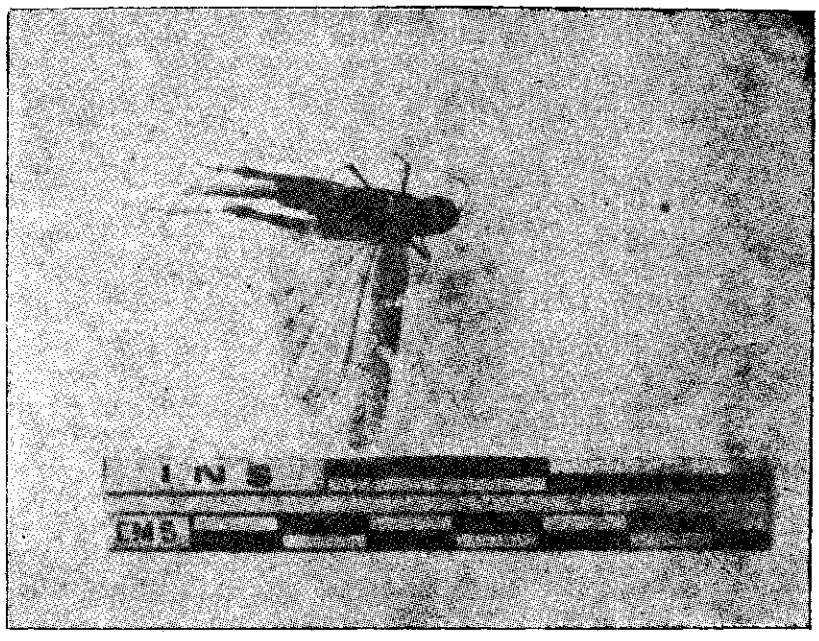

Fig. 24—AELOPUS AFFINIS, Bolivar.

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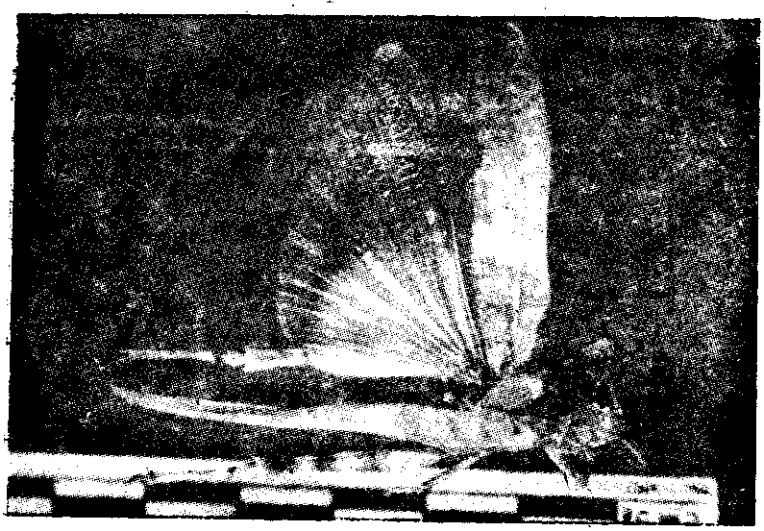


Fig. 25—CHLOEBORA GROSSA, Saussure.

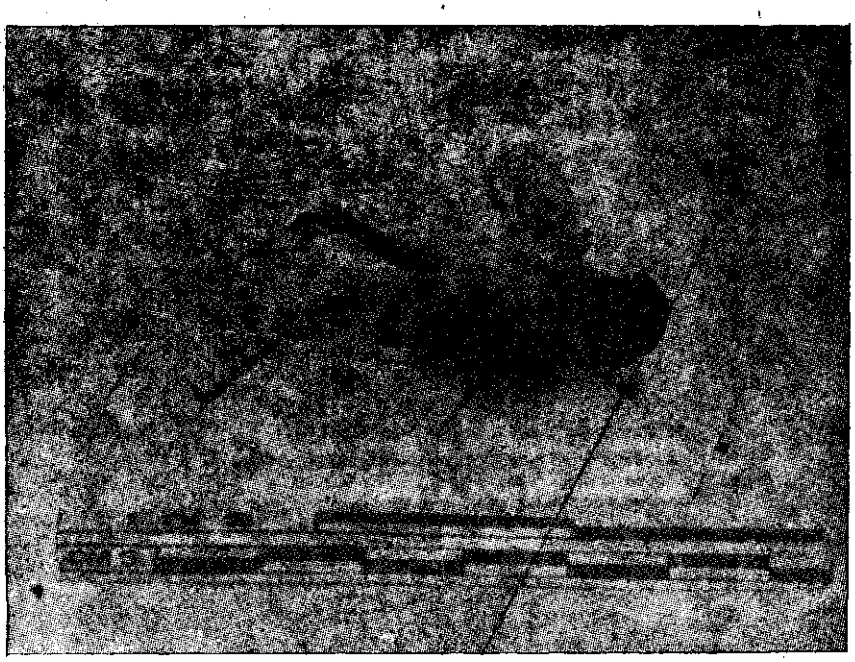


Fig. 26—CHLOEBORA GROSSA, Saussure.

Fig. 27—PTERNOSCIRTA CINCTIFEMUR, Walker.

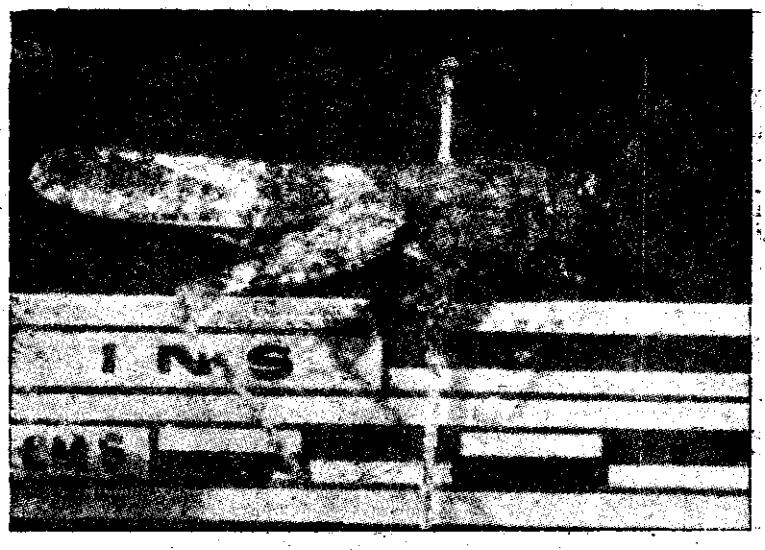


Fig. 28—PTERNOSCIRTA CINCTIFEMUR, Walker.

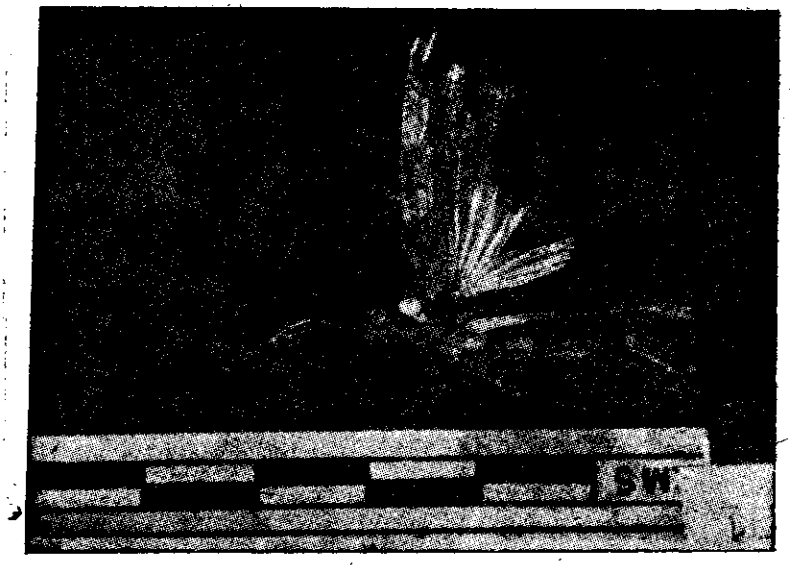
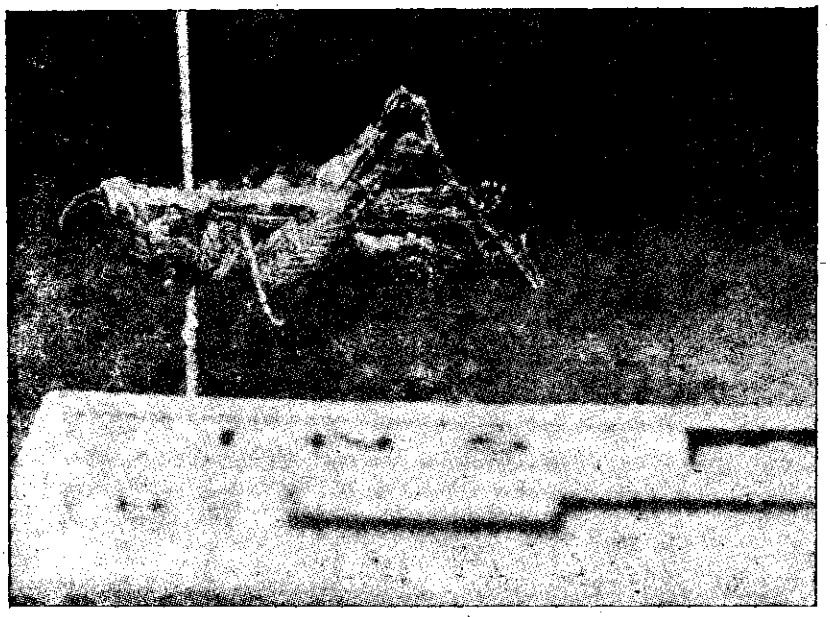


Fig. 29—PTERNOSCIRTA BIMACULATA, Thunberg.



ERYOSCIRTA BIMACULATA, Thunberg.

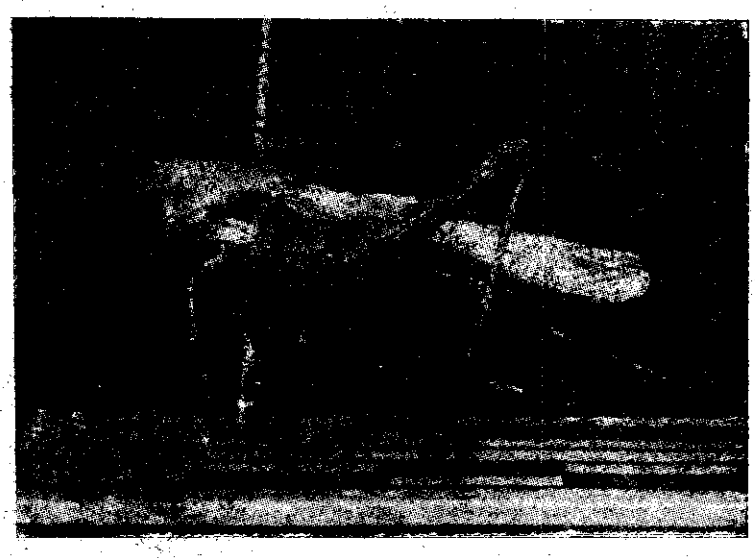


Fig. 31—MORPHACRIS CITRINA, Kirby.

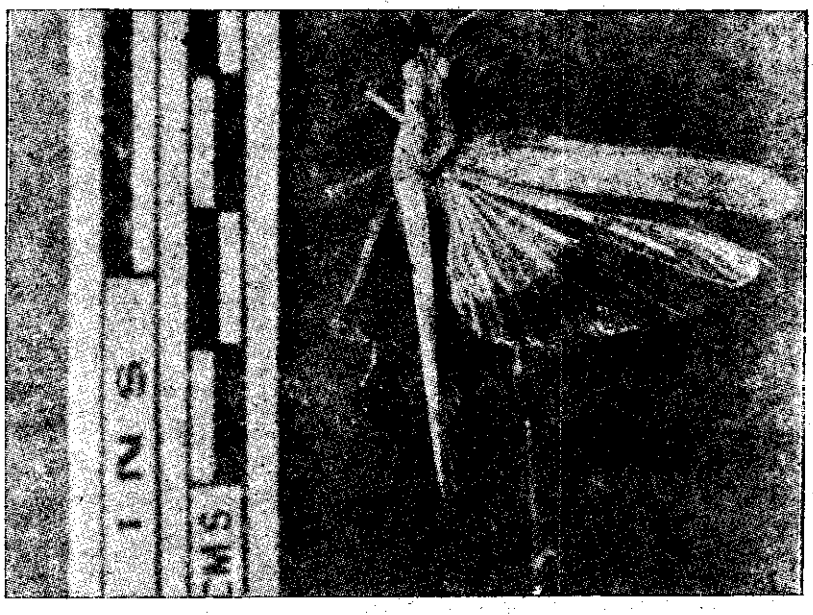


Fig.32—MORPHACRIS CITRINA, Kirby.

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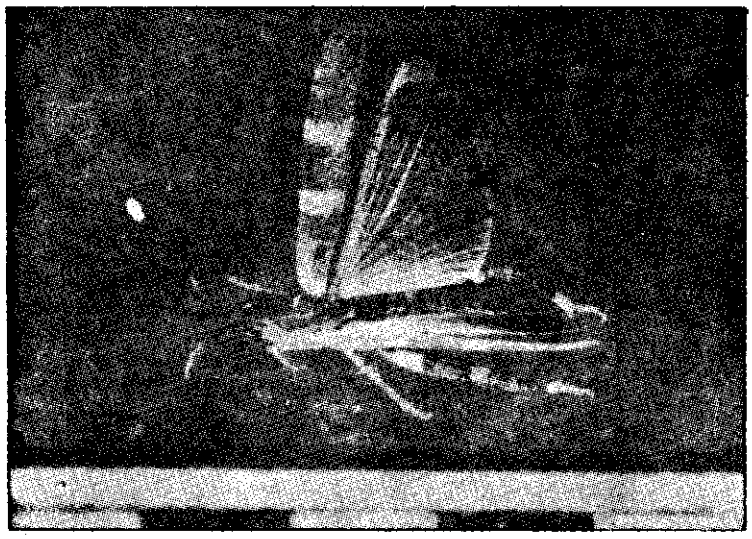

Fiu. 33—LERINA CEDIPODIOIDES, Bolivar.

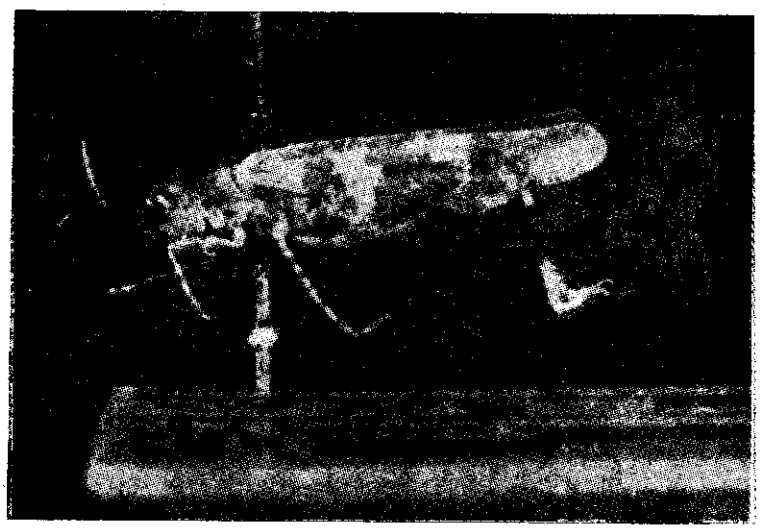

Fig. 34—LERINA CEDIPODIOIDES, Bolivar.

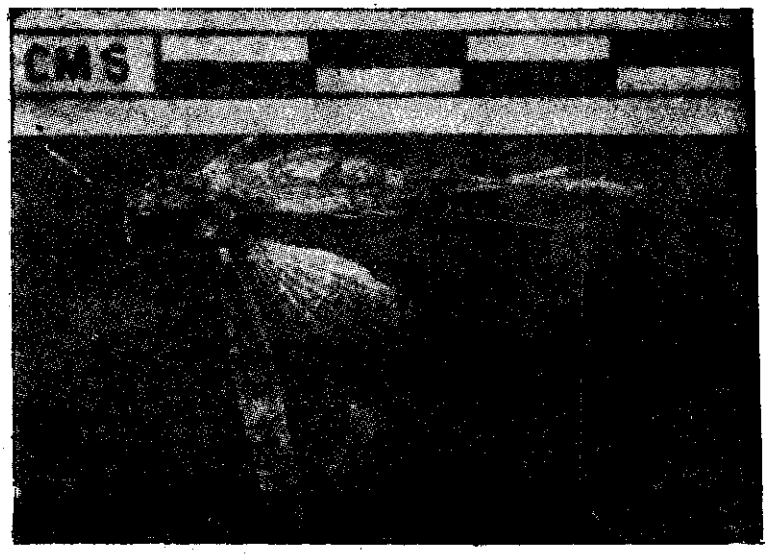

Fig. 35—DITTOPTERNIS ZEBRATA, Saussure.

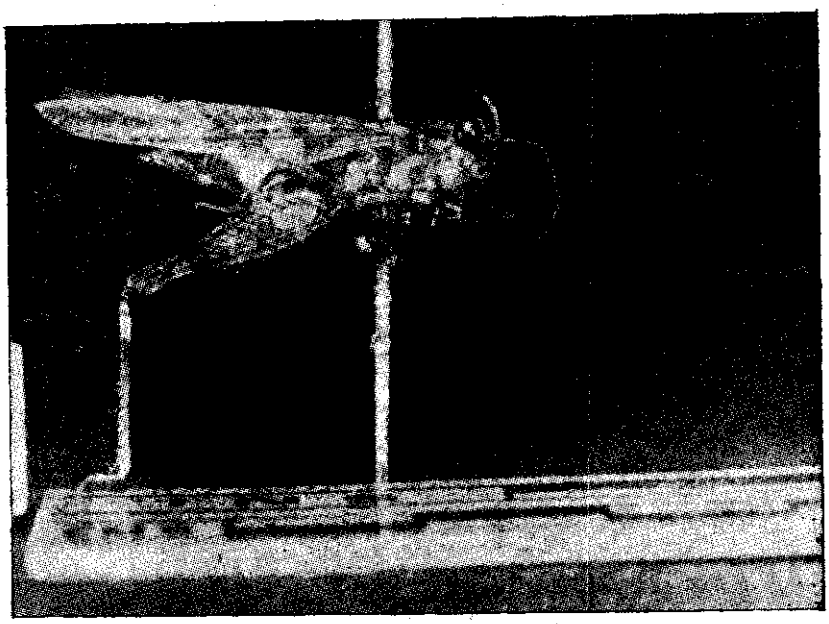

Fig. 36—DITTIOPTERNIS ZEBRATA, Saussuer.

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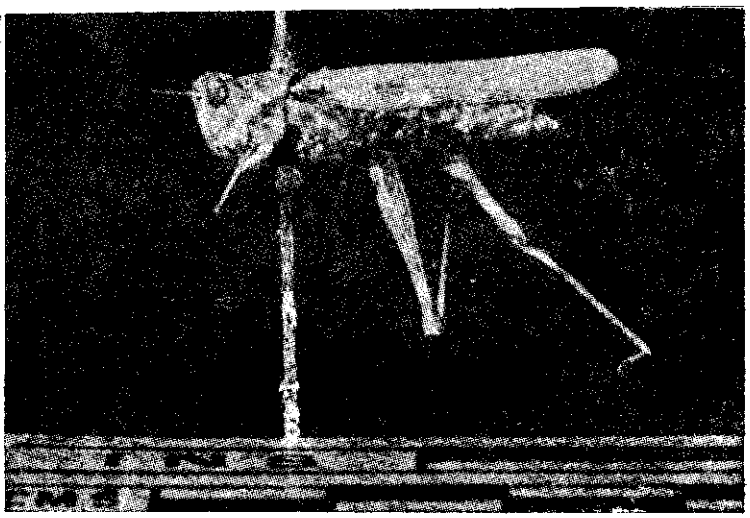


Fig. 37—OEDALEUS ABRUPTUS, Thunberg.

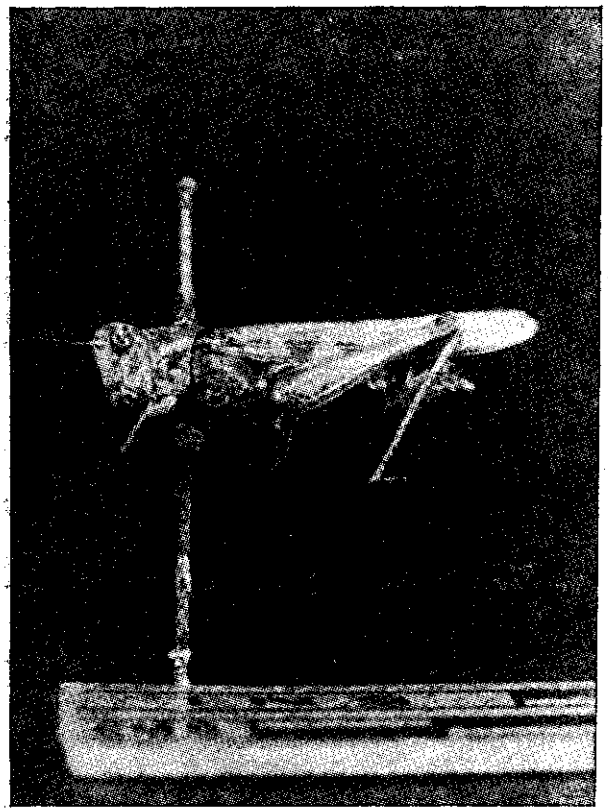


Fig. 38—OEDALEUS ABRUPIUS, Thunb.

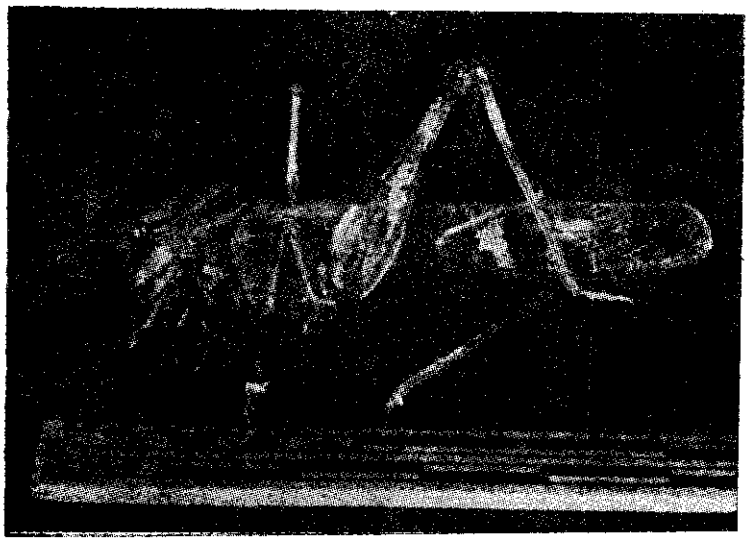
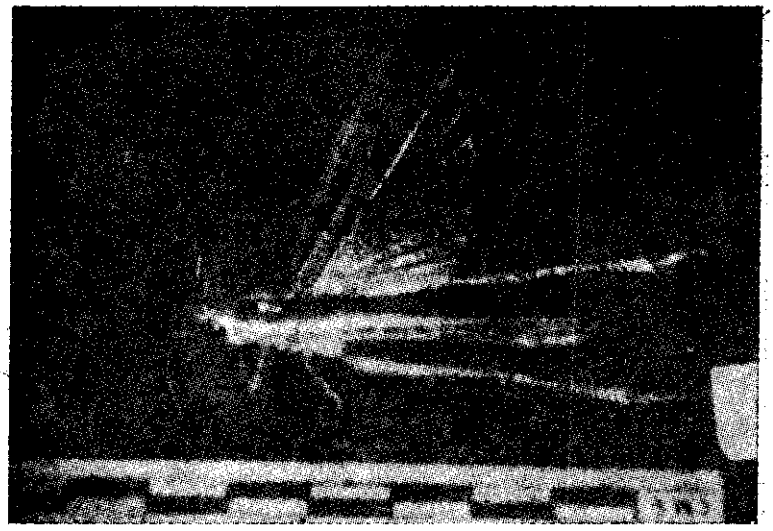


Fig.. 39—GASTROMARGUS TRANSVERSUS, Thunberg.



Ftg. 40—GASTROMARGUS TRANSVERSUS, Thunb.

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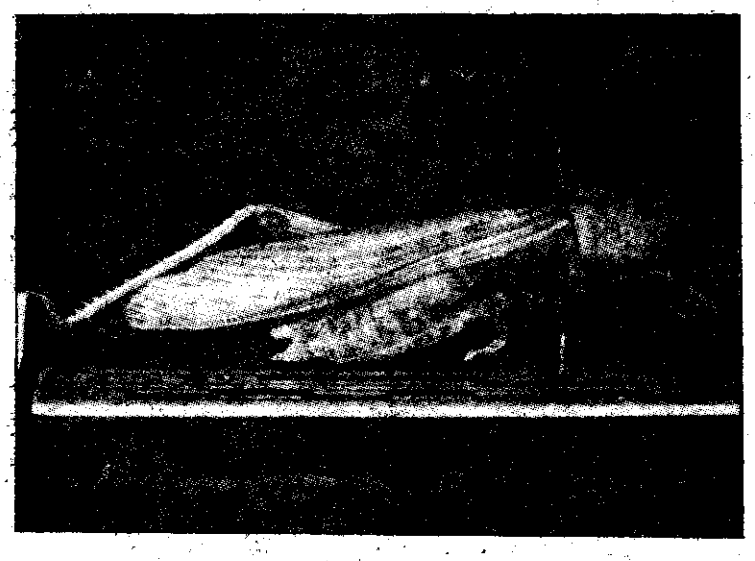

Fig. 41 - LOCUSTA DANICA, Linn.

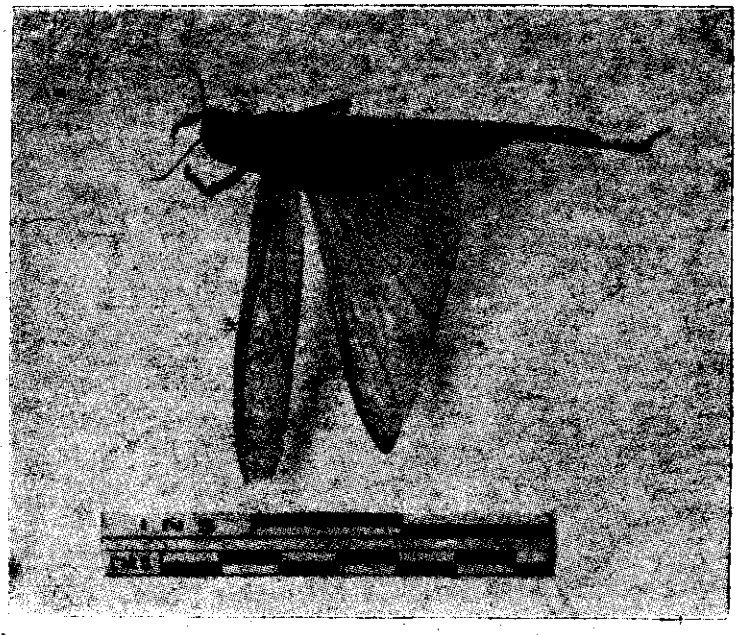

Fig. 42 - LOCUSTA DANICA, Linnaeus.

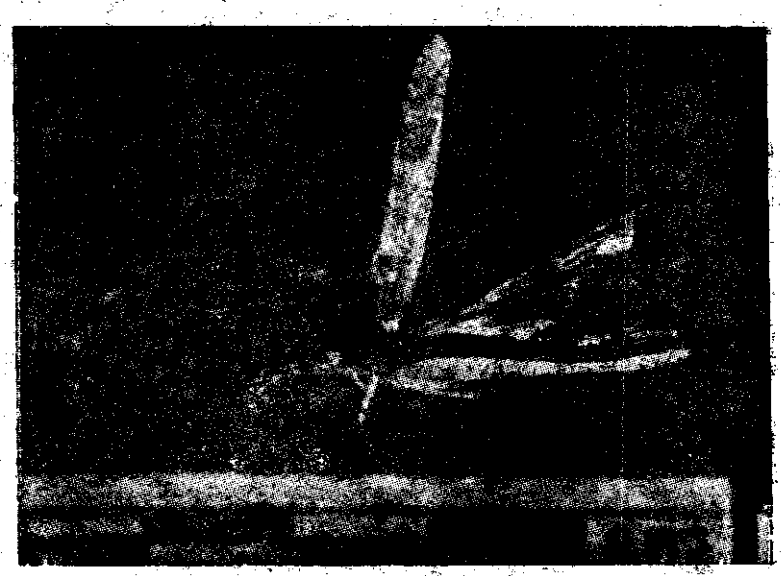

Fig. 43—TRILOPHIDIA ANNULATA, Thunberg.

Fig. 44 TRILOPHIDIA ANNULATA Thunb.

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Fig. 45—TRILOPHIDIA TURPIS, Walker.

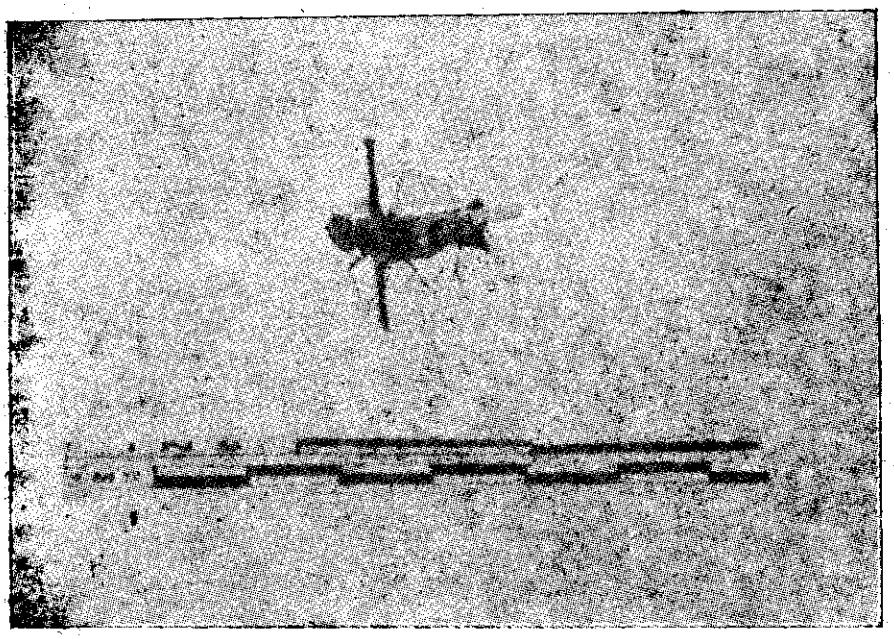

Fig. 46—TRILOPHIDIA TURPIS, Walker.

Fig. 47—ACROTYLUS HUMBERTIANUS, Saussure.

Fig. 48—ACROTYLUS HUMBERTIANUS, Saussure.

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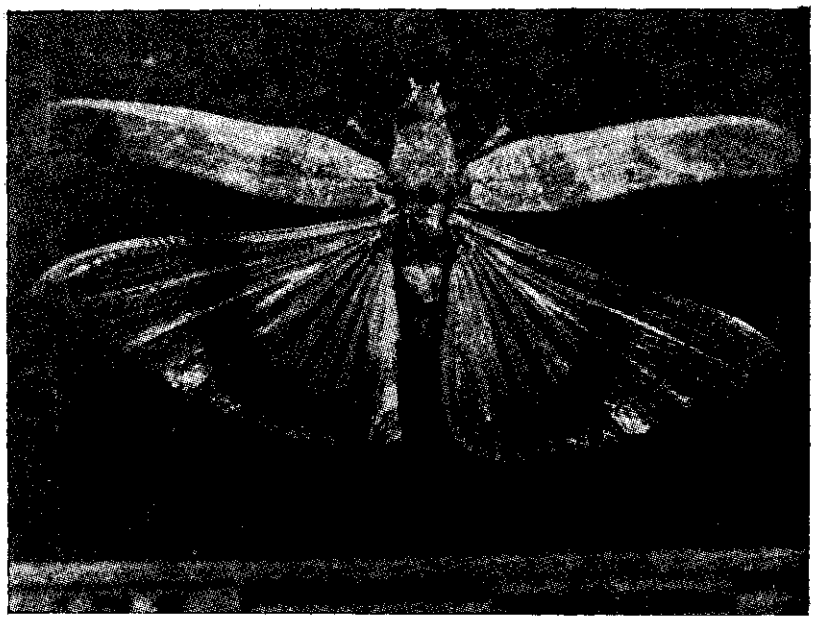

Fig. 49—SPHINGONOTUS INDUS, Saussure.

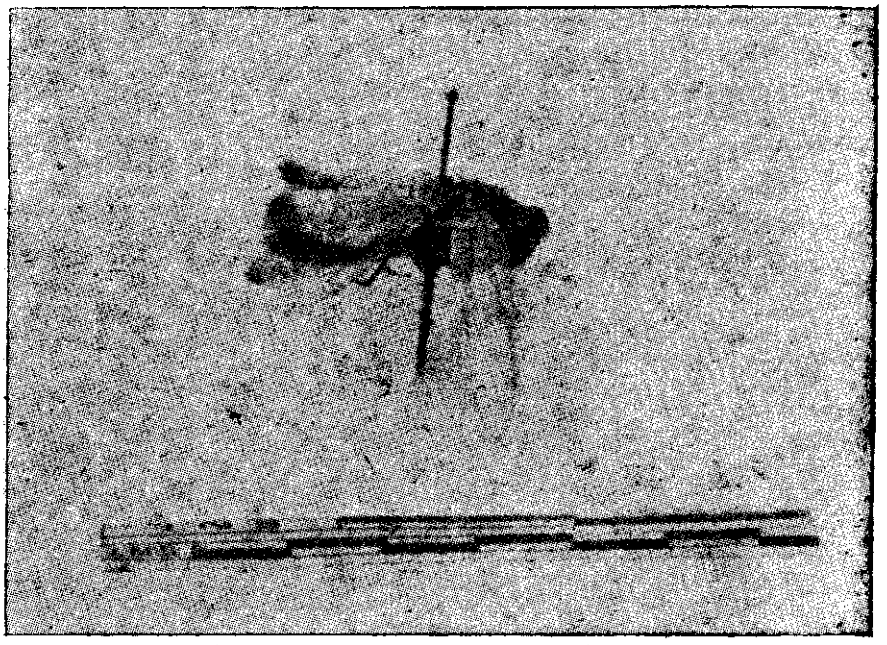

Fig. 50—SPHINGONOTUS INCERTUS, Bolivar.

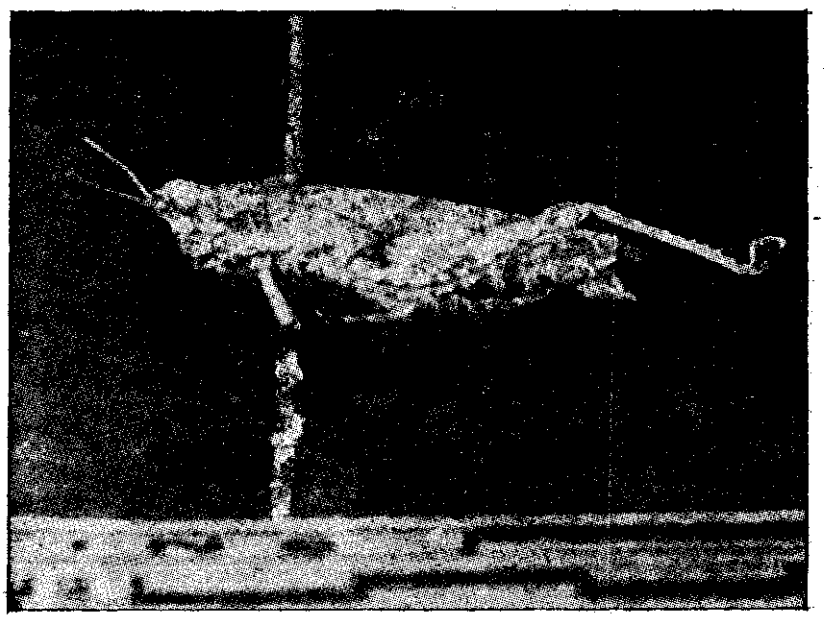

Fig. 51—CHROTOGONUS INCERTUS, Bolivar.

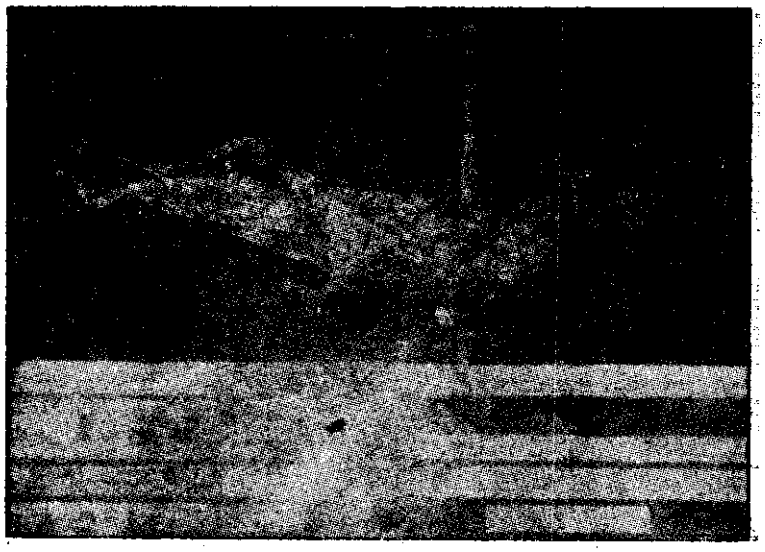

Fig. 52—CHROTOGONUS INCERTUS, Bolivar.

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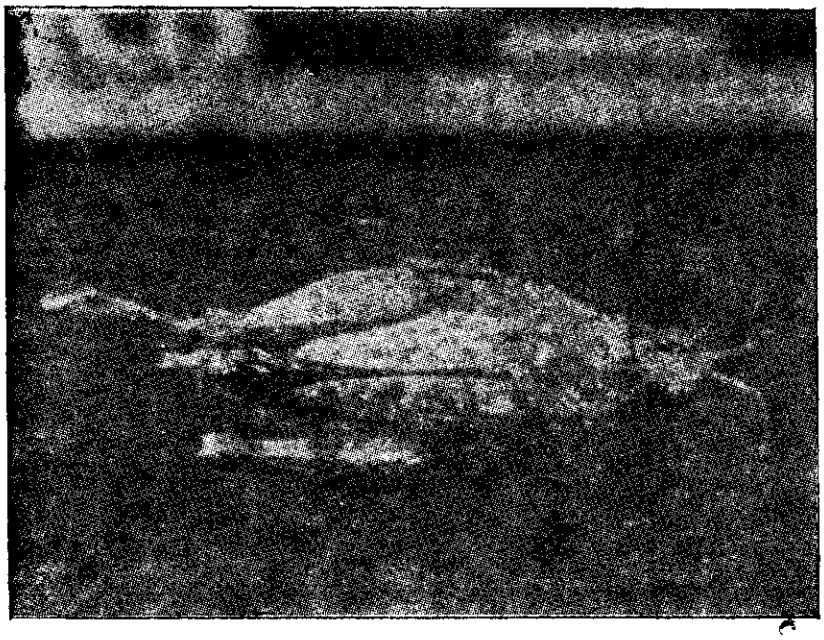

Fig. 53—CHROTOGONUS BRACHYPTERUS, Blanch.

Fig. 54—CHROTOGONUS BRACHYPTERUS, Blanch.

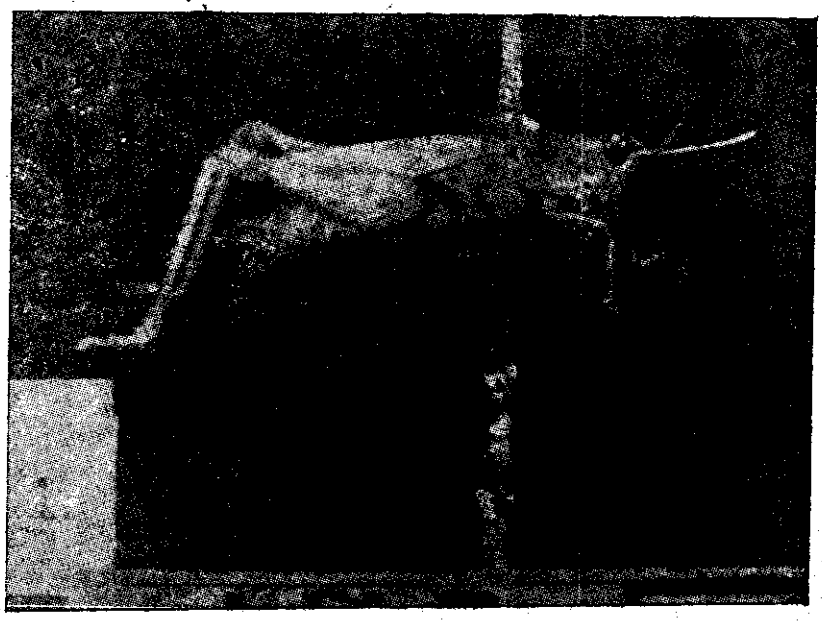

Fig. 55—CHROTOGONUS OXYPTERUS, Blanch.

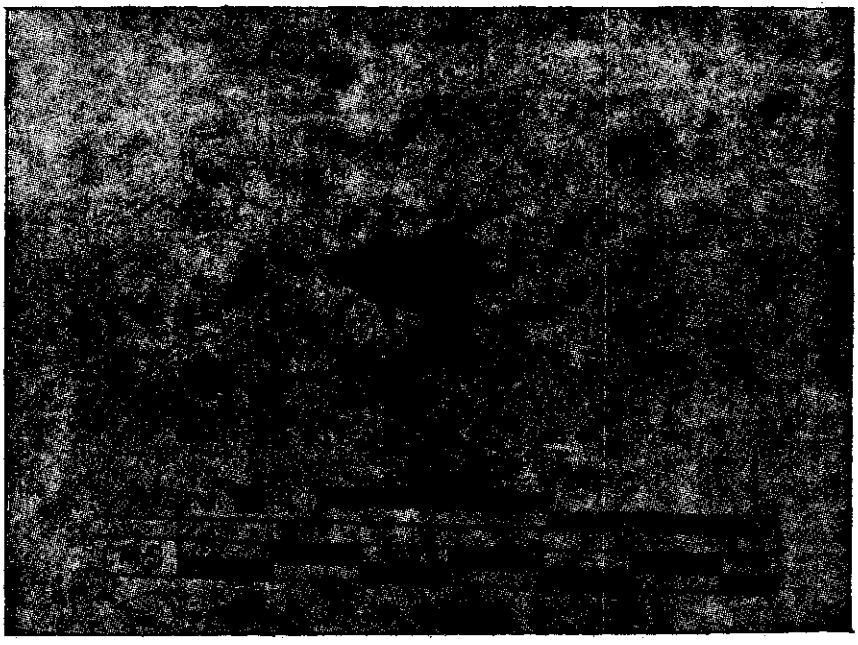

Fig. 56—CHROTOGONUS OXYPTERUS, Blanch.

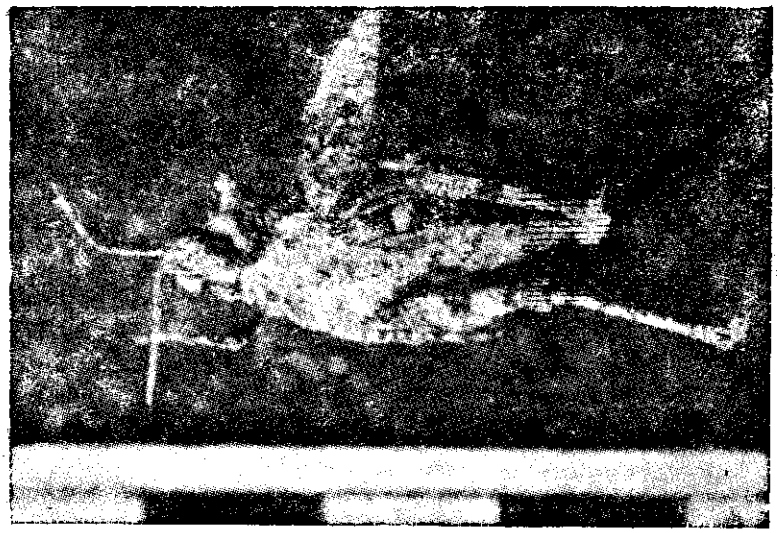

Fig. 57—CHROTOGONUS SAUSSUREI, Bolivar.

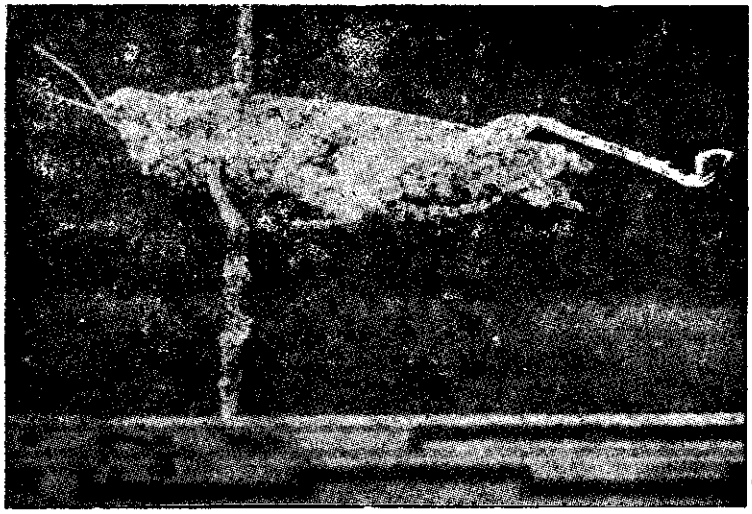

Fig. 58—CHROTOGONUS SAUSSUREI, Bolivar.

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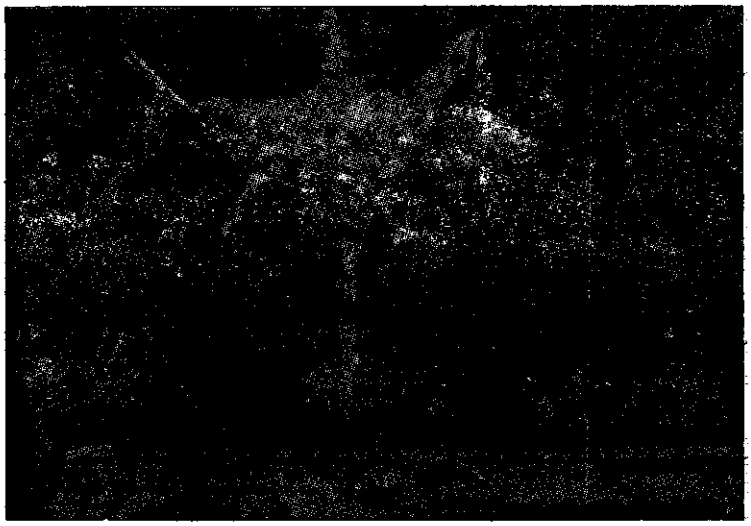

Fig. 59—CHROTOGONUS BRACHYPTERUS, Bolivar.

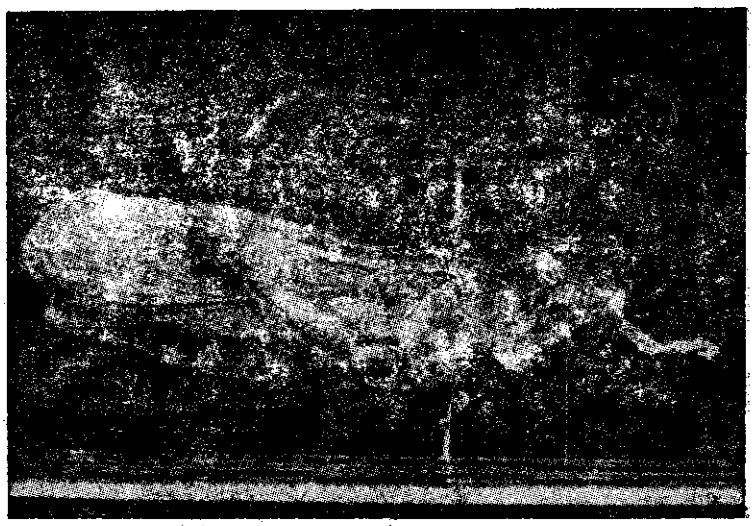

Fig. 60—AULARCHES MILIARIS, Linnaeus.

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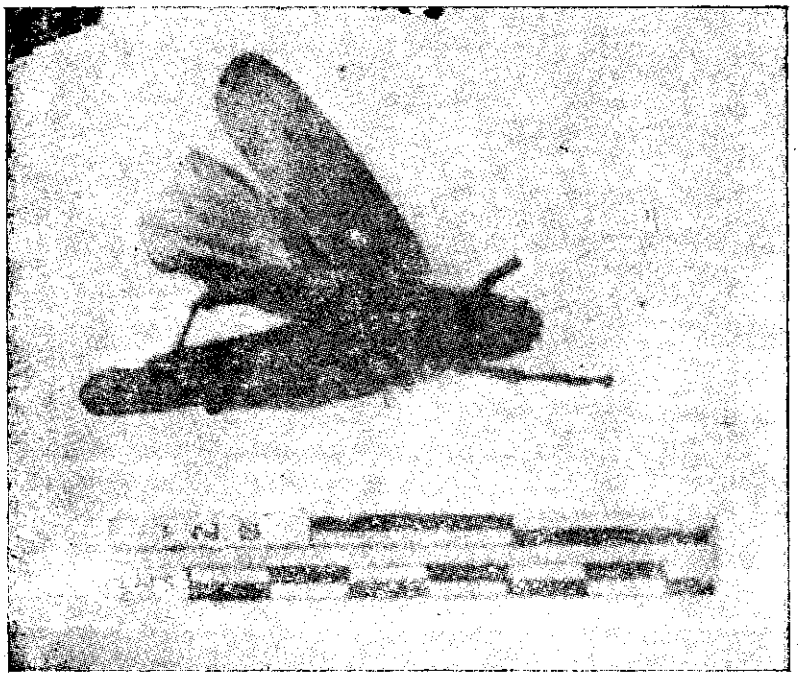

Fig. 61—AULARCHES MILIARIS.

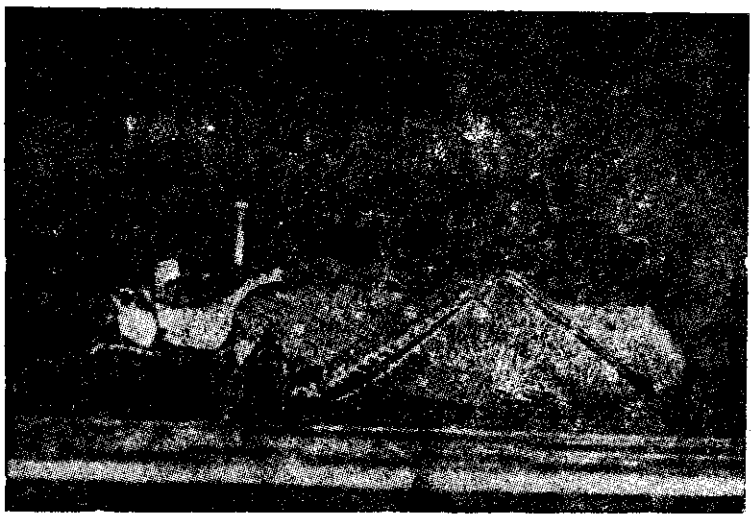

Fig. 62—AULARCHES SCABIOSAE, Fabricius.

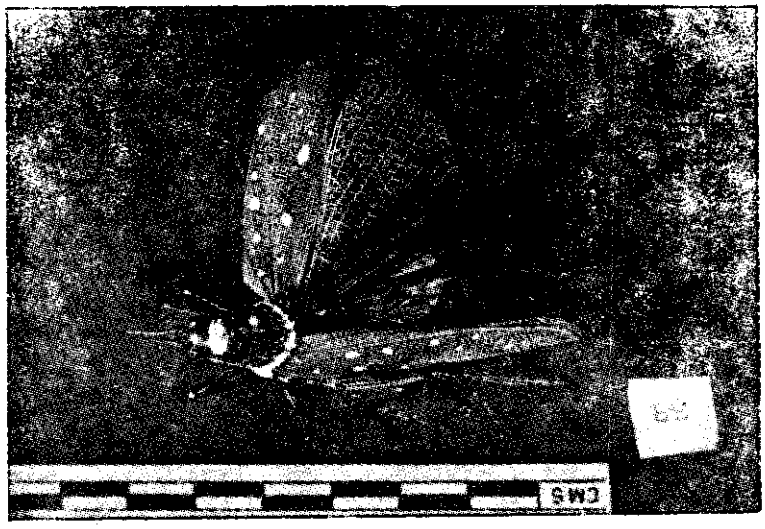

Fig. 63—AULARCHES SCABIOSAE, Fab.

Fig. 64—POECILOCERUS PICTUS, Fabricius.

Fig. 65—POECILOCERUS PICTUS, Fabricius.

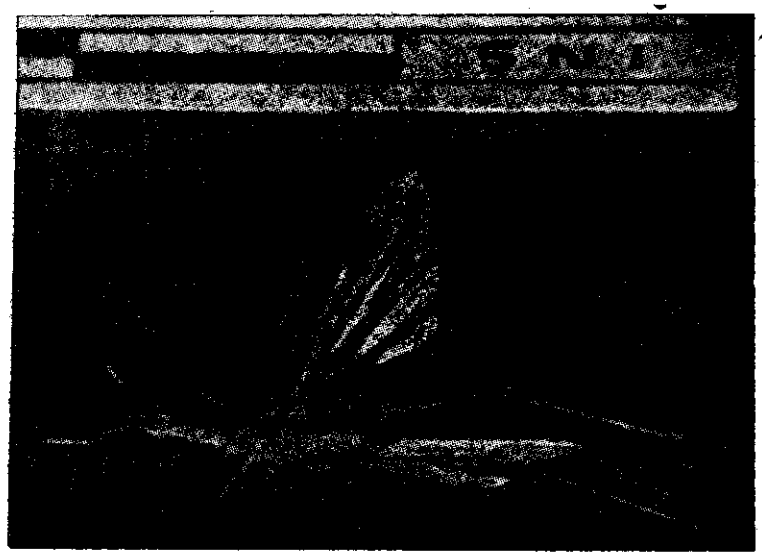

Fig. 66—PYRGOMORPHA BRACHYCERA, Kirby.

Fig. 67—PYRGOMORPHA BRACHYCERA, Kirby.

Fig. 68—ATRACTOMORPHA CRENULATA, Fabriciu

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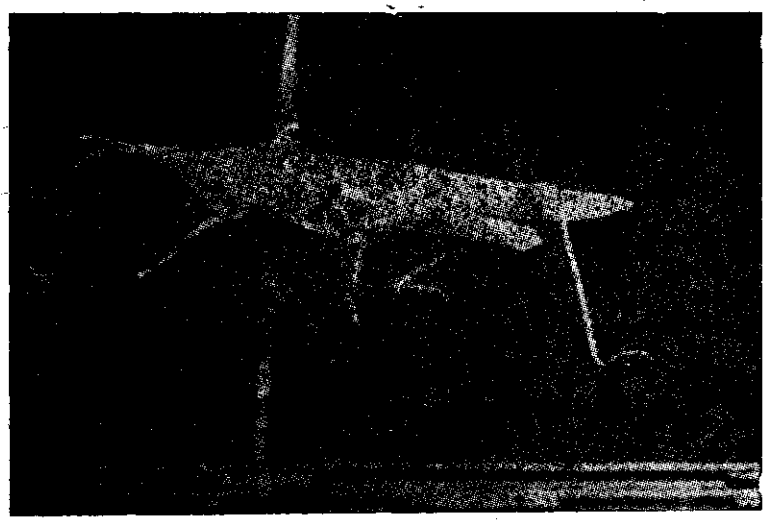

Fig. 69—ATRACTOMORPHA CRENULATA, Fabricius.

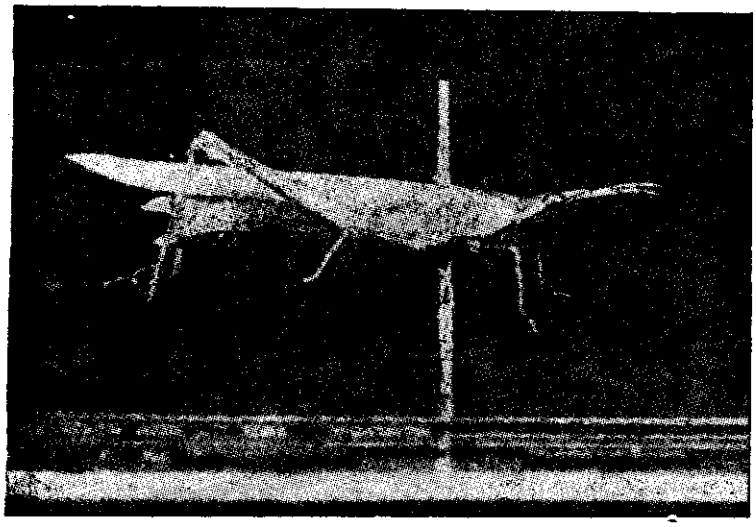

Fig. 70—ATRACTOMORPHA SCABRA, Thunberg.

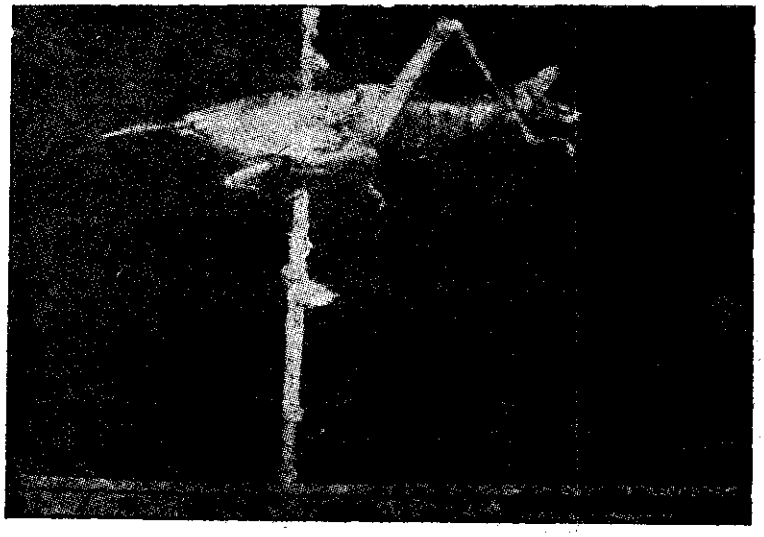

Fig. 71—ORTHACRIS RUFICORNIS, Bolivar.

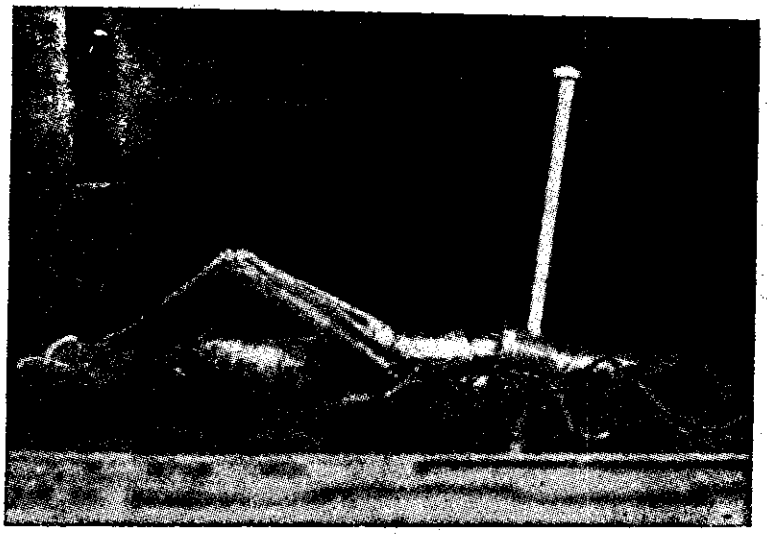

Fig. 72—ORTHACRIS FILIFORMIS, Bolivar.

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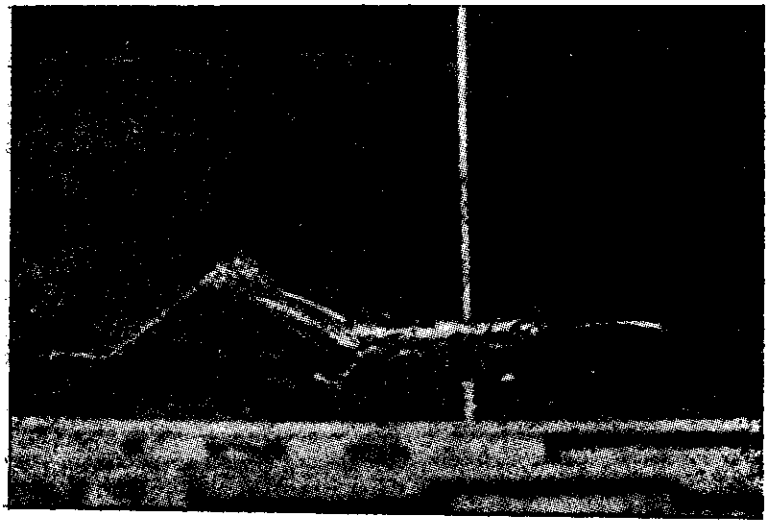

Fig. 73—ORTHACRIS ELEGANS, Bolivar.

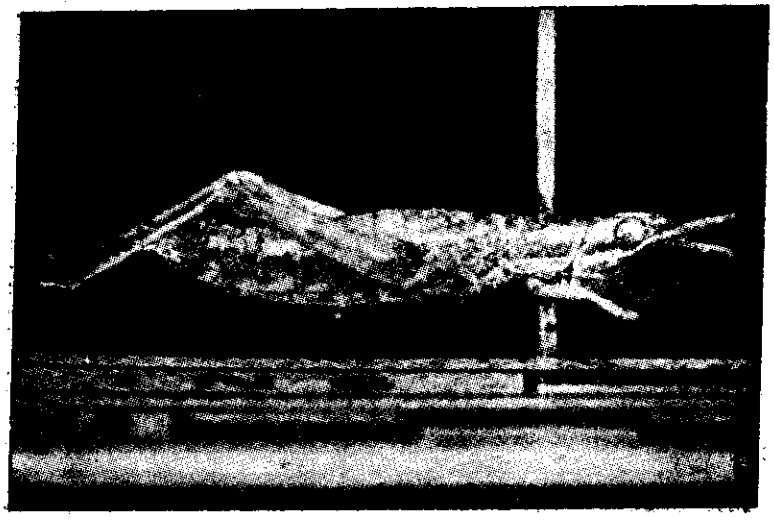

Fig. 74—ORTHACRIS ACUTICEPS, Bolivar.

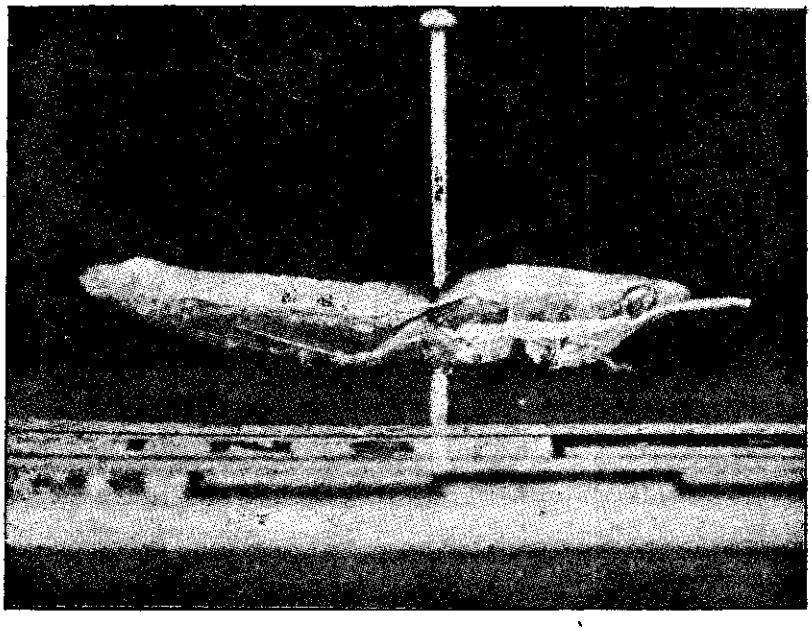

Fig. 75—ORTHACRIS SIMULANS, Bolivar.

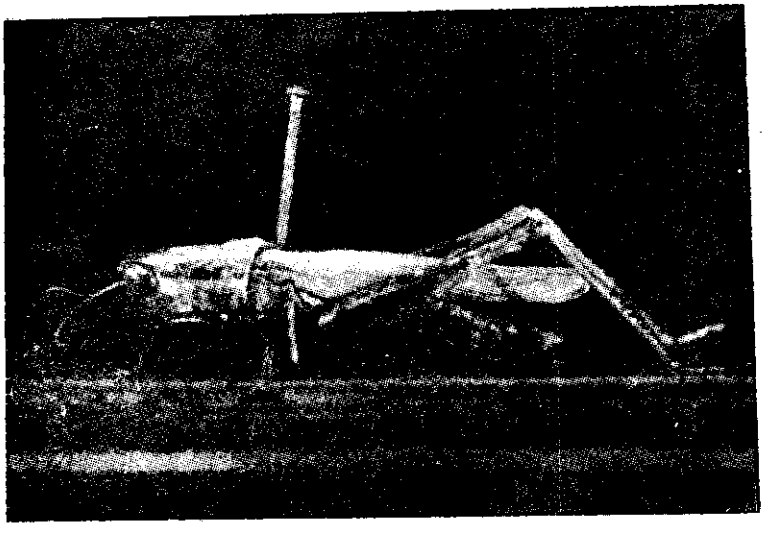

Fig. 76—OXYA VELOX, Fab.

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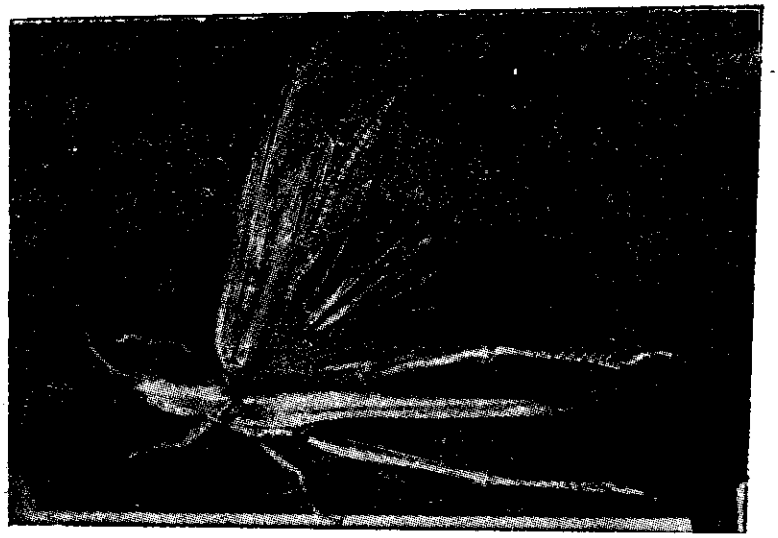


Fig. 77--OXYA VELOX, Fabricius.

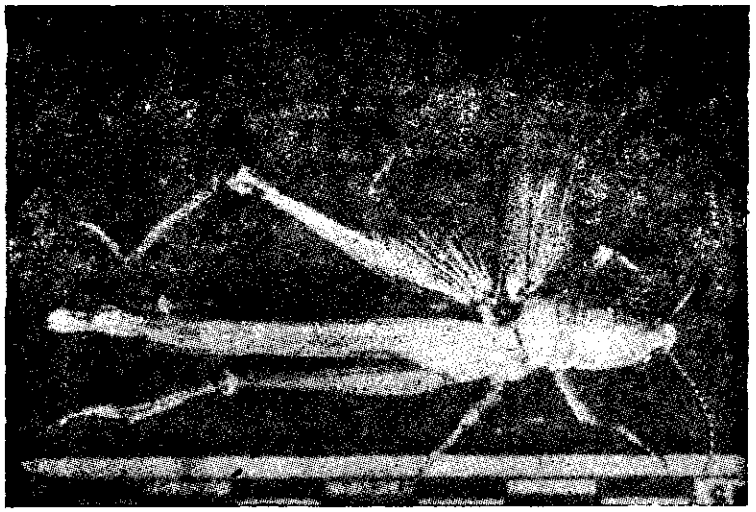
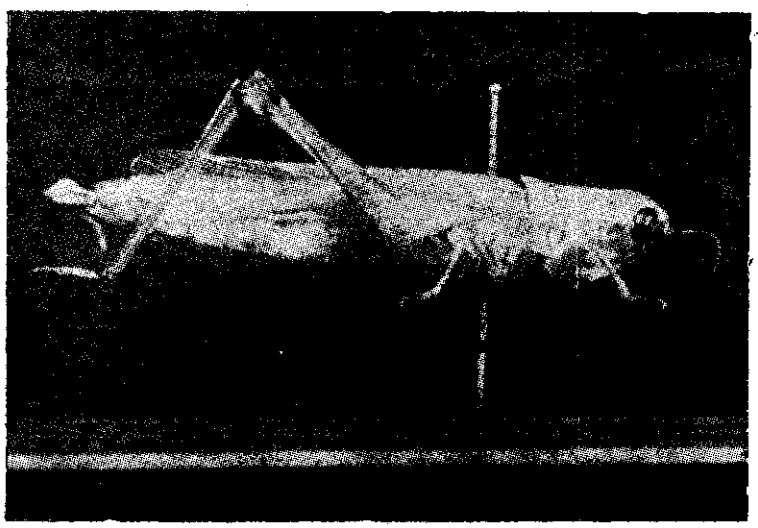


Fig. 78—HIEROGLYPHUS BANIAN, Fabricius.



Pig. 79—HIEROGLYPHUS BANIAN, Fabricius.

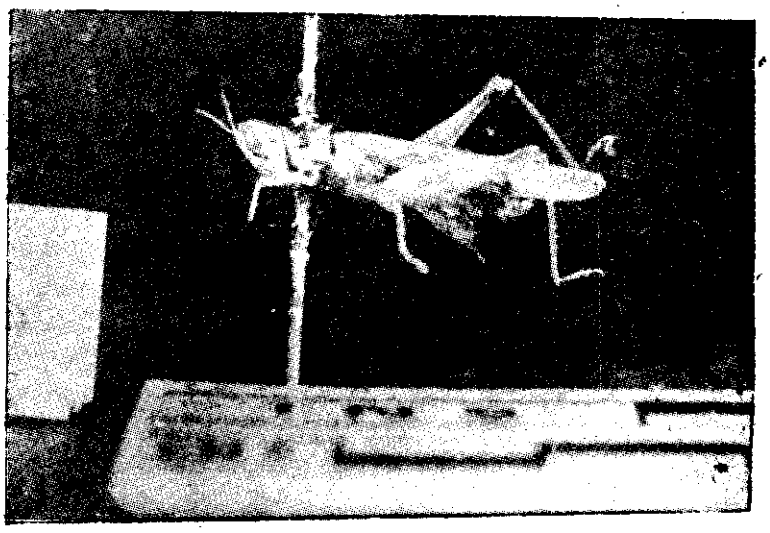


Fig. 80—SPATHOSTERNUM PRASINIFERUM, Walker.

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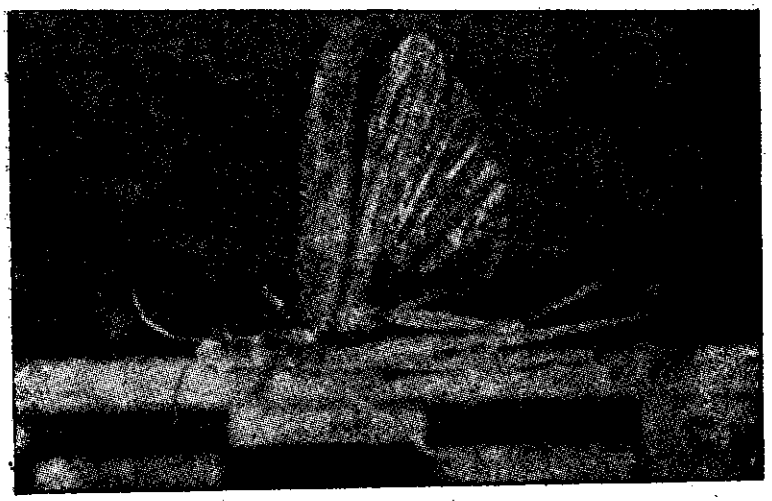

Fig. 81—SPATHOSTERNUM PRASINIFERUM, Walker.

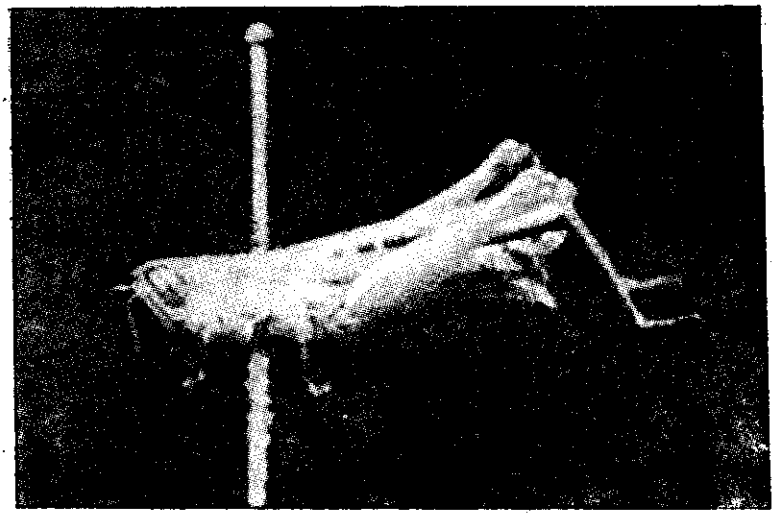

Fig. 82—SPATHOSTERNUM VENULOSUM, Stal.

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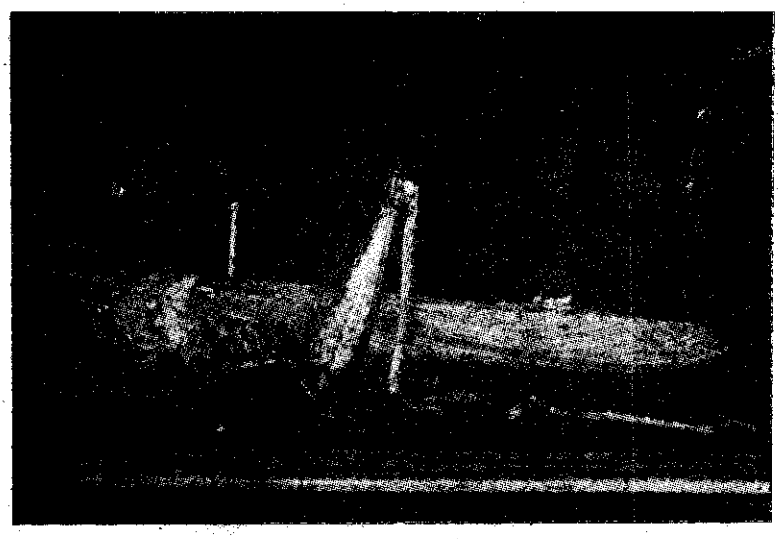

Fig. 83—ORTHACANTHACRIS FLAVESCENS, Fabricius.

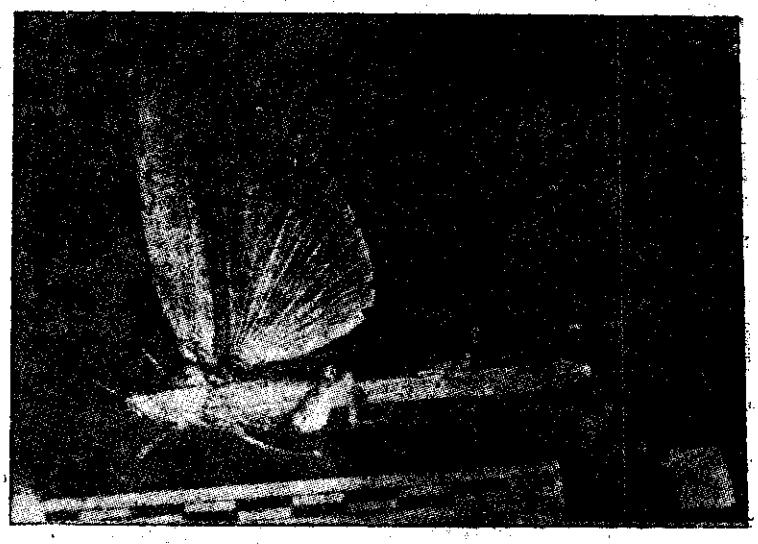

Fig. 84—ORTHACANTHACRIS FLAVESCENS, Fab.

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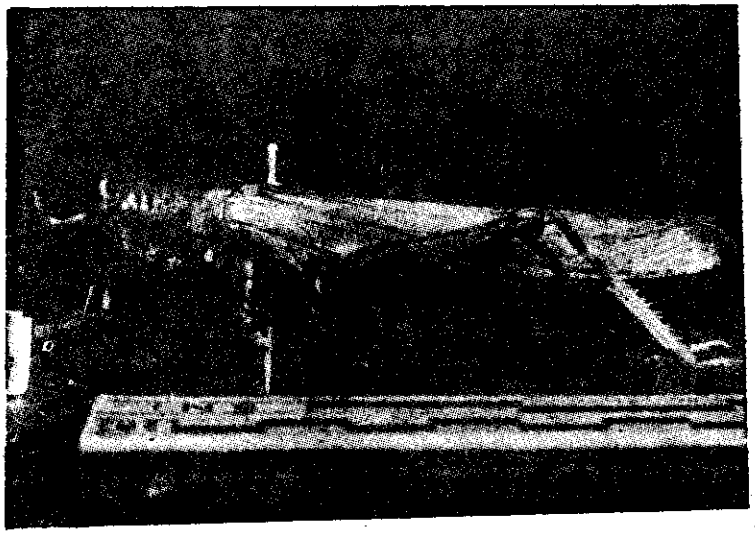

Fig. 85—ORTHACANTHACRIS NIGRICORNIS, Burmeister.

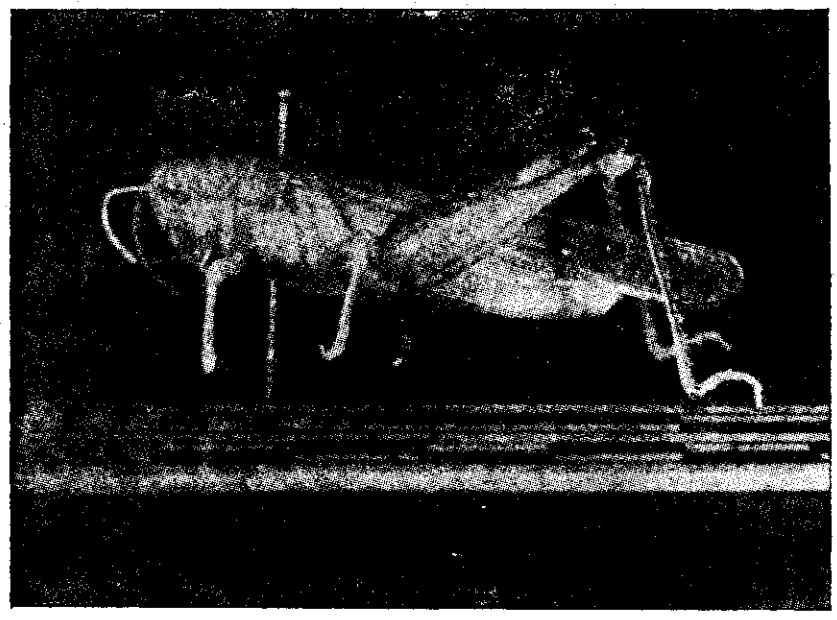

Fig. 86—ORTHACANTHACRIS VIOLESCENS, Burmeister.

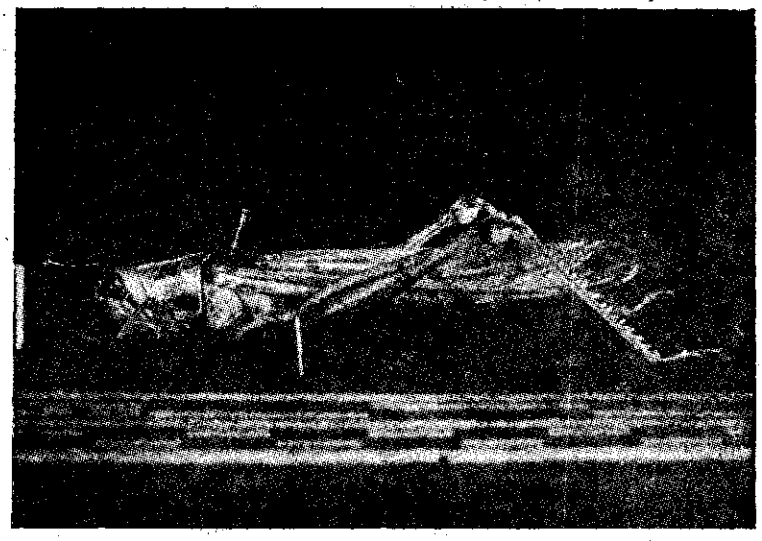

Fig. 87—CYRTACANTHACRIS ROSEA, De Geer.

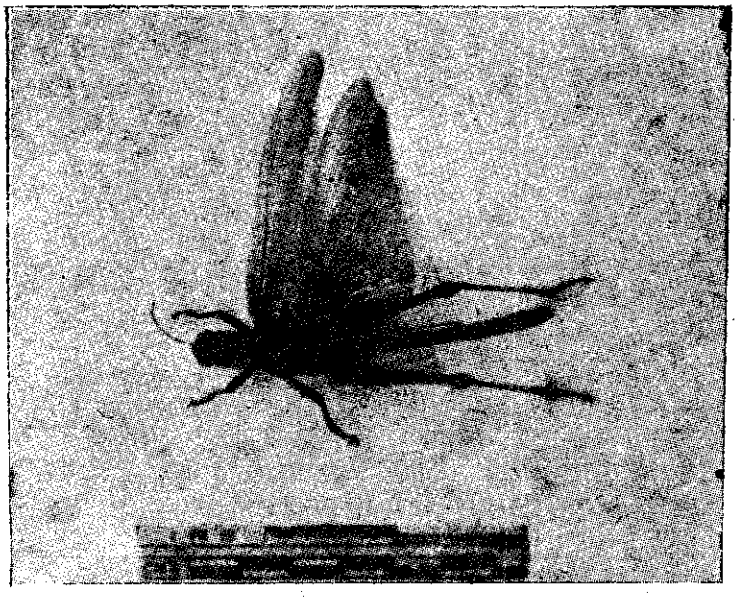

Fig. 88—CYRTACANTHACRIS ROSEA, De Geer.

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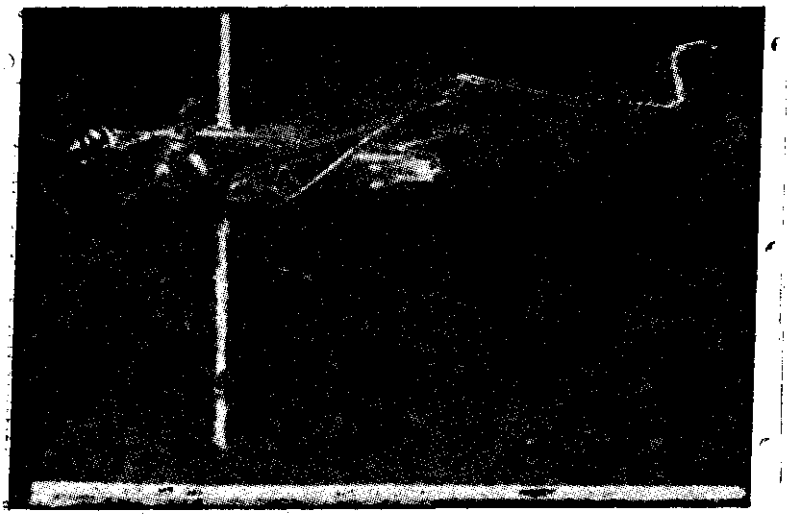

Fig. 89—CYRTACANTHACRIS RANACEA, Stall.

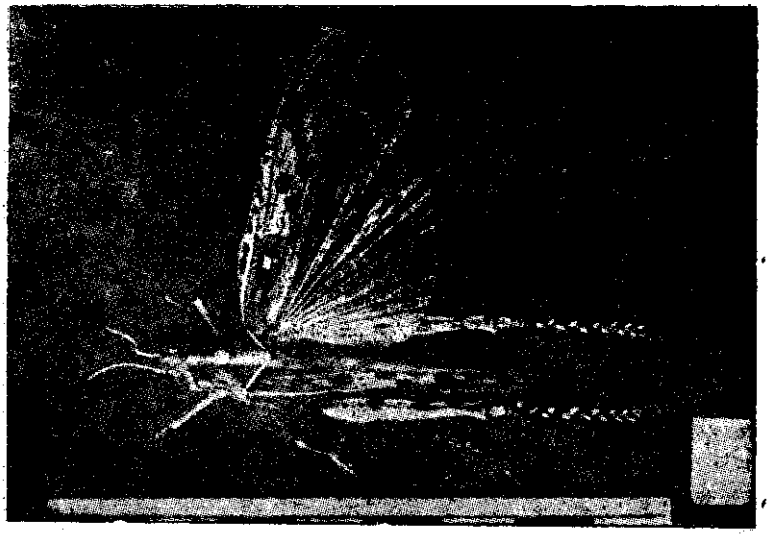

Fig. 90—CYRTACANTHACRIS RANACEA, Stall.

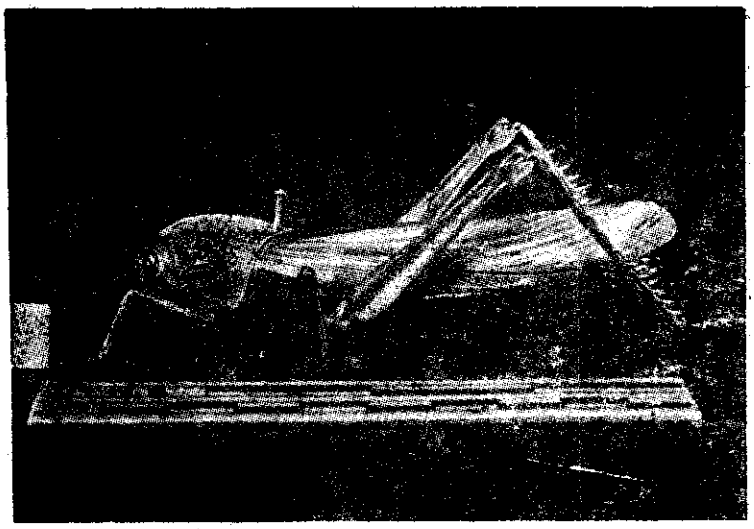

Fig. 91—CHONDRACRIS ROSEA, Uvarou.

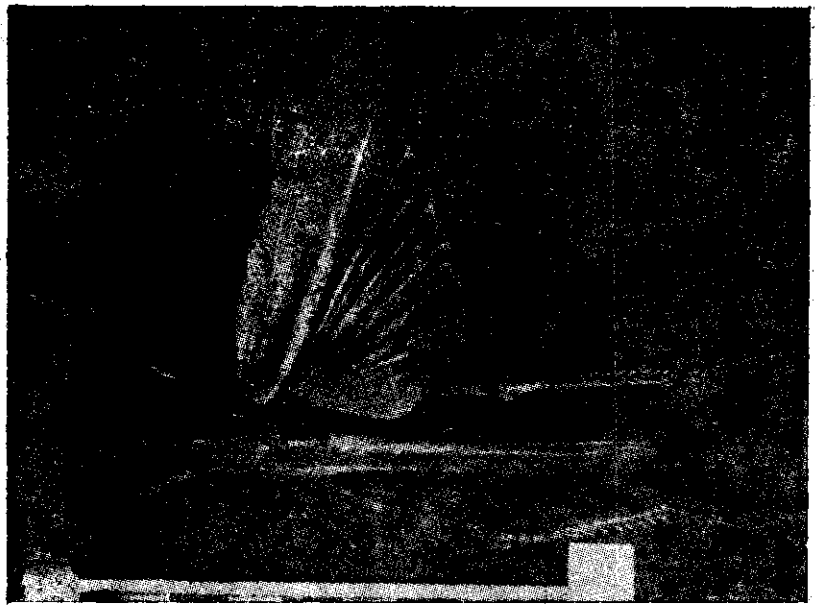

Fig. 92—CHONDRACRIS ROSEA, Uvarou.

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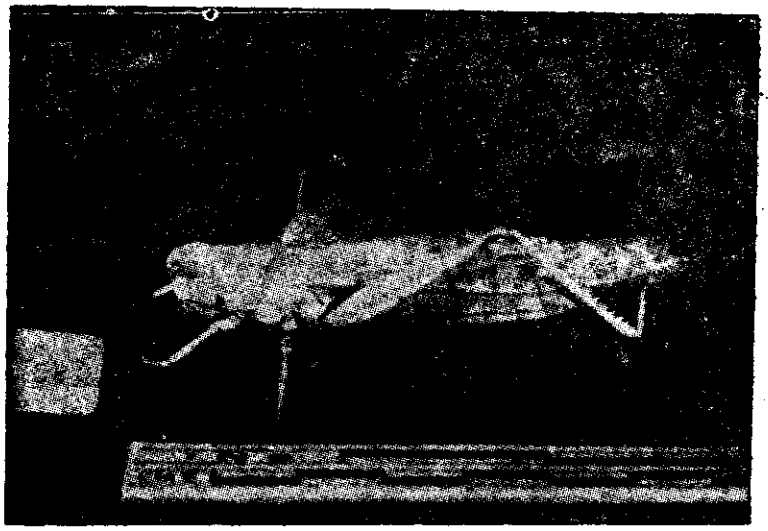

Fig. 93—SCHISTOCERCA TATARICA, Linnaeus.

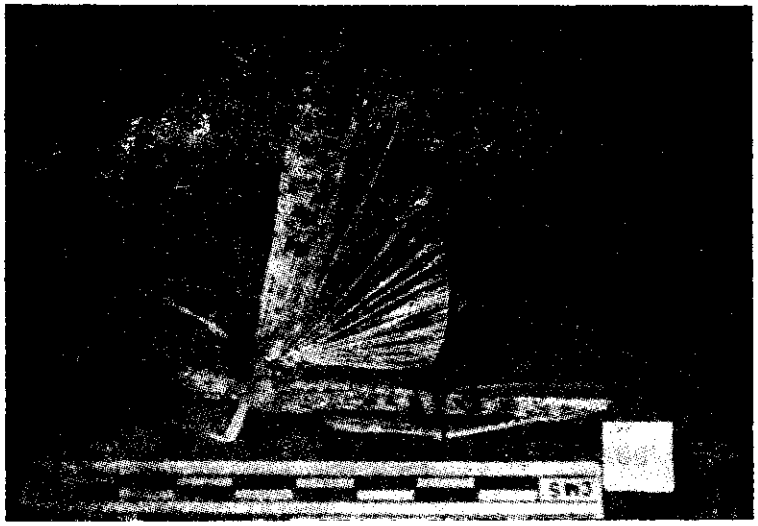

Fig. 94—SCHISTOCERCA TATARICA, Linnaeus.

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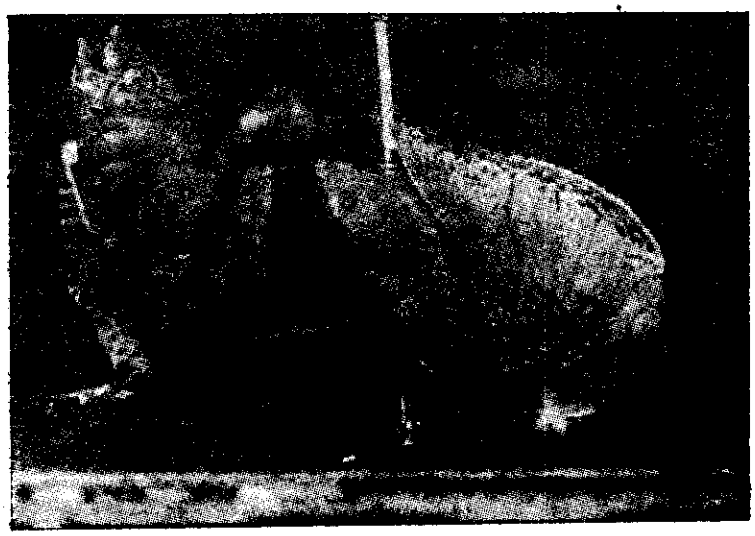

Fig. 95—PELECINOTUS BRACHYPTERUS, Bolivar.

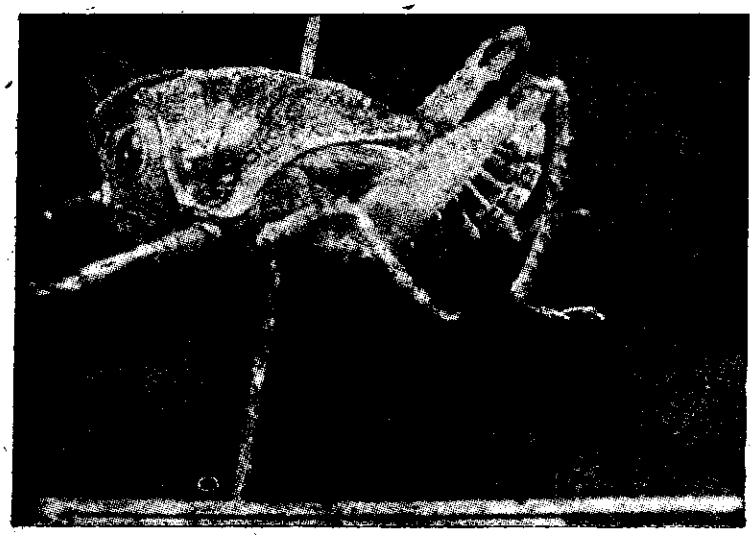

Fig. 96—PELECINOTUS CRISTAGALLI, Bolivar.

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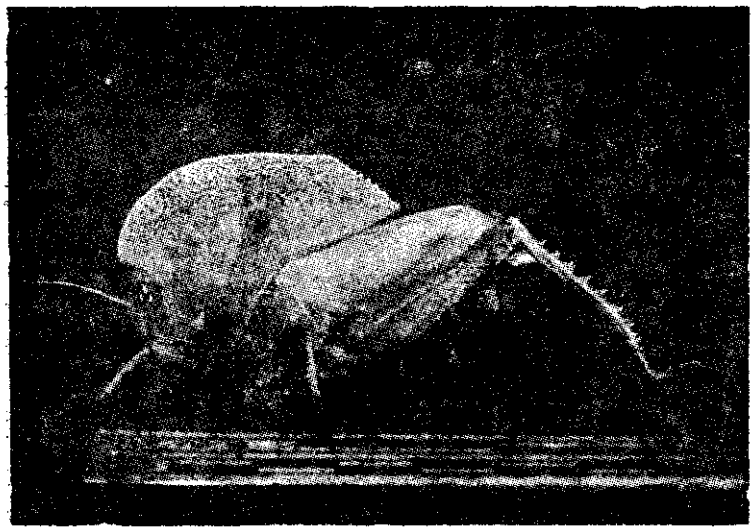

Fig. 97—TERATODES MONTICOLLIS, Gray.

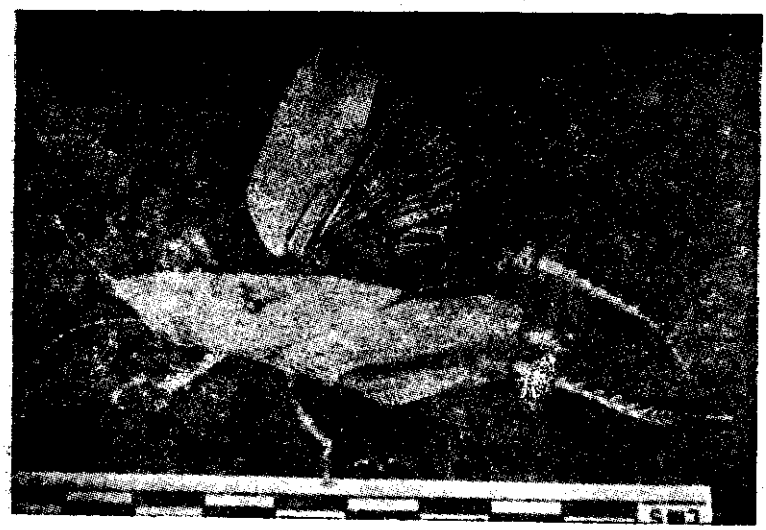

Fig. 98—TERATODES MONTICOLLIS, Gray.

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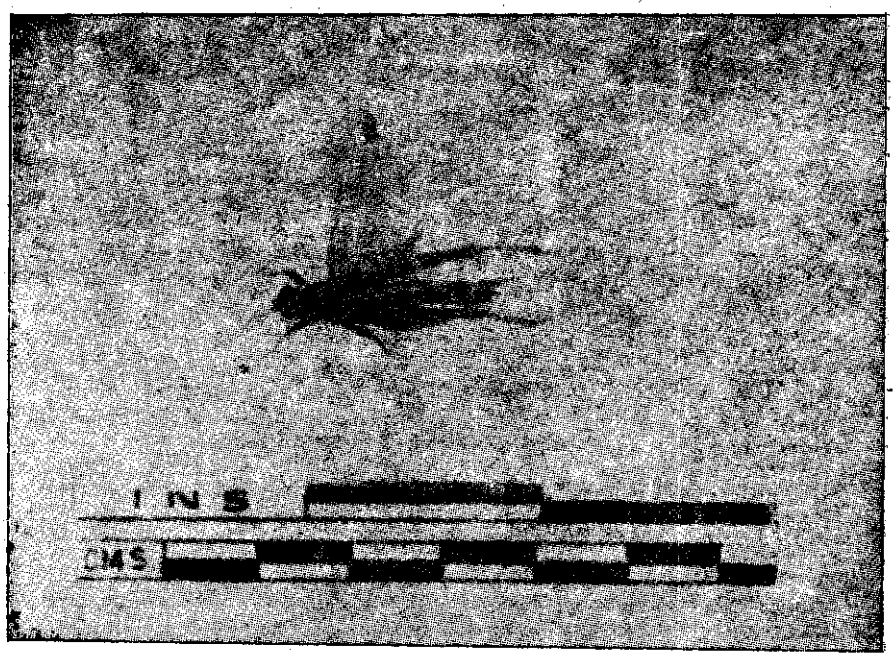

Fig. 99—EUCOPTACRA PRAEMORSA, Stal.

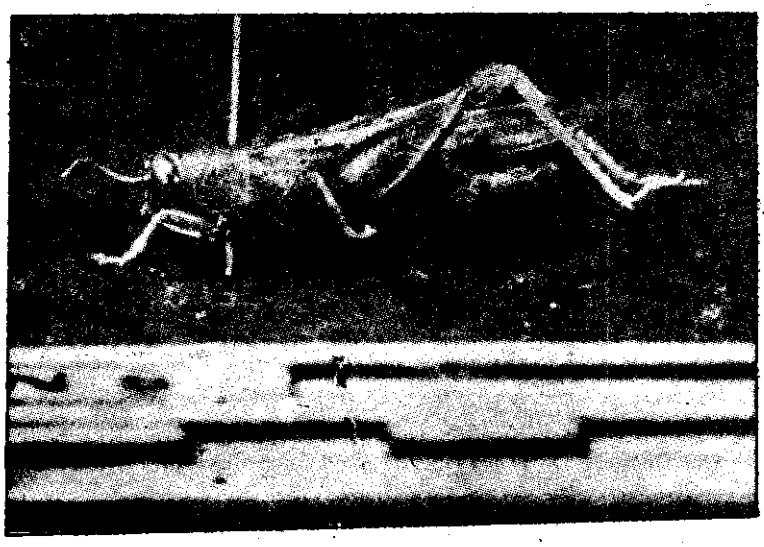

Fig. 100—EUCOPTACRA PRAEMORSA, Stal.

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Fig. 101—CATANTOPS ACUTICERCUS, Bolivar.

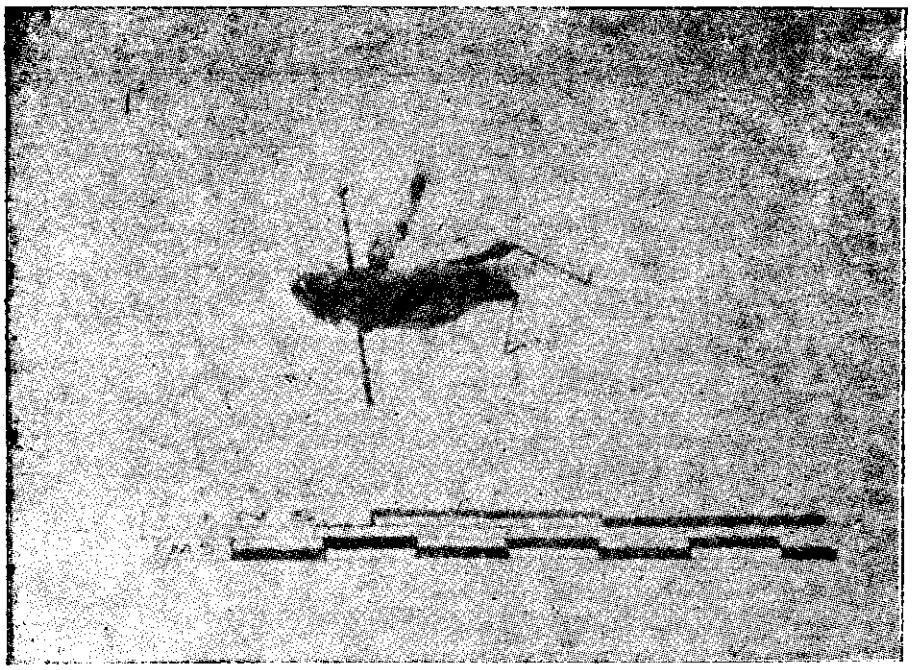

Fig. 102—CATANTOPS ACUTICERCUS, Bolivar.

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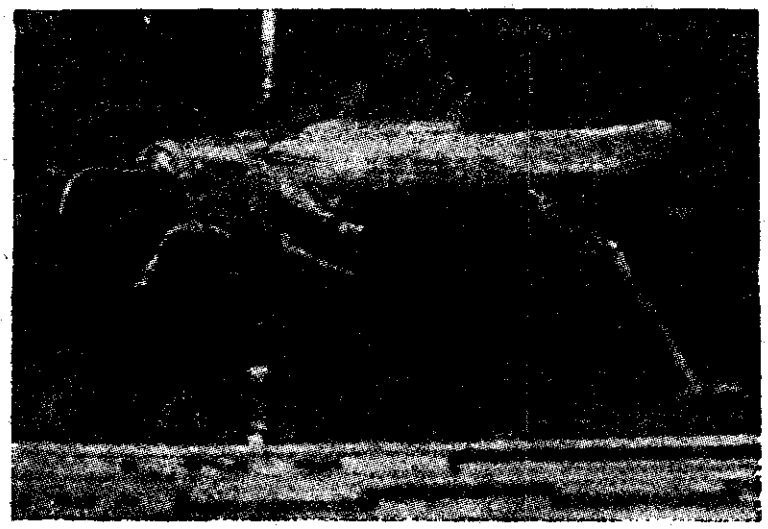

Fig. 103—CATANTOPS SPLENDENS, Thunb.

Fig. 104—CATANTOPS SPLENDENS, Thunb.

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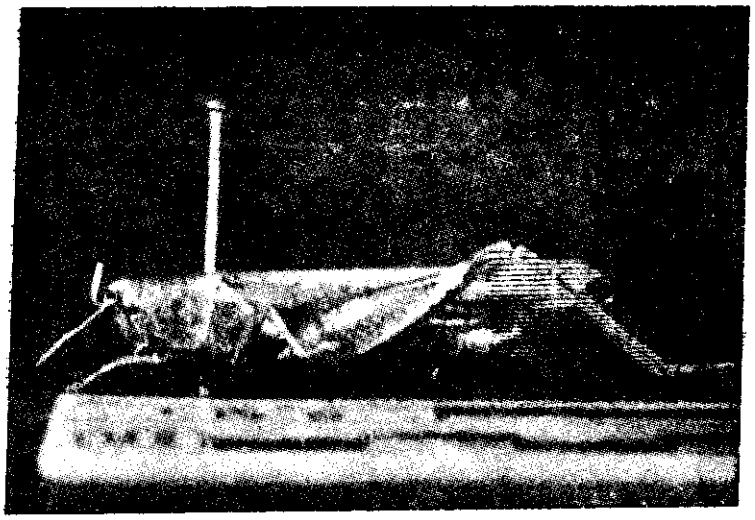

Fig. 105—CATANTOPS HUMILIS, Serville.

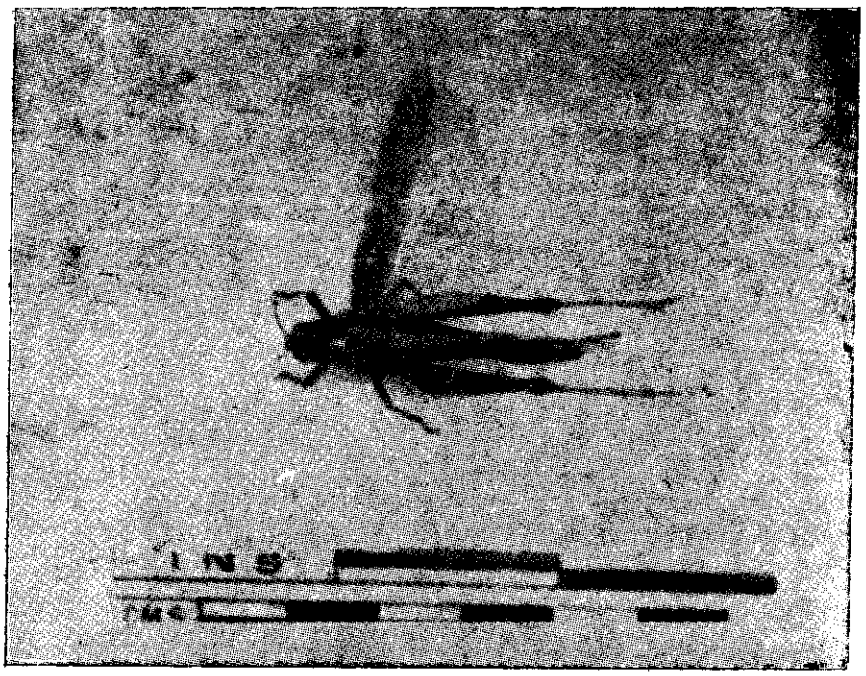

Fig. 106—CATANTOPS HUMILIS, Serville

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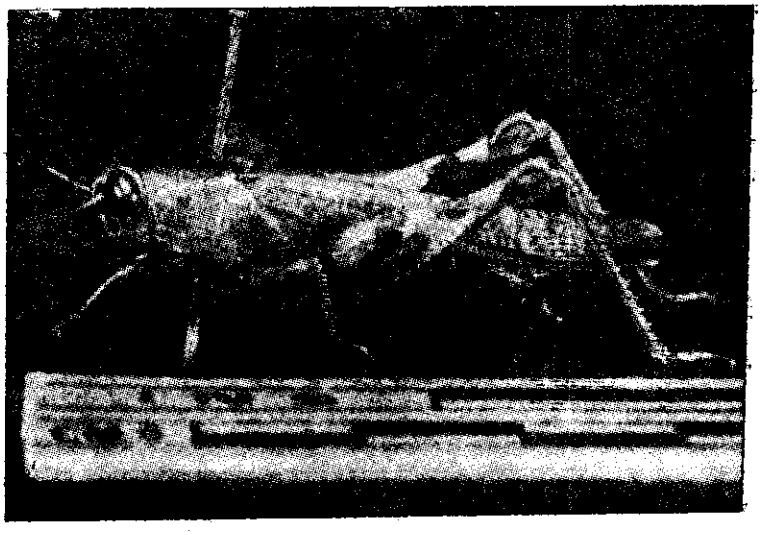

Fig. 107—CATANTOPS INDICUS, Bolivar.

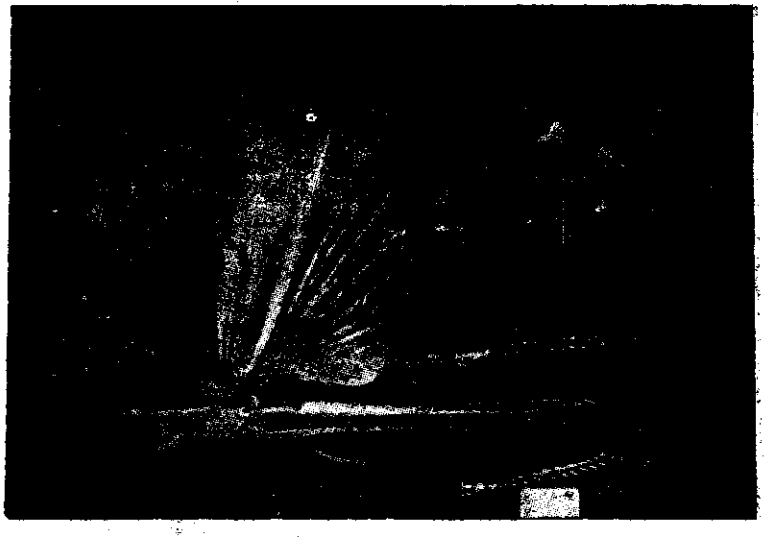

Fig. 108—CATANTOPS INDICUS, Bolivar.

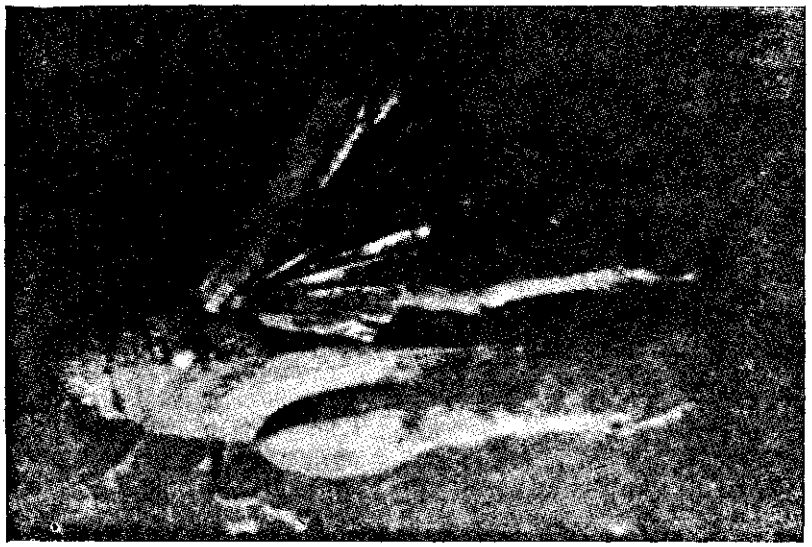

Fig. 109—BRACHYXENIA SCUTIFERA, Walker.

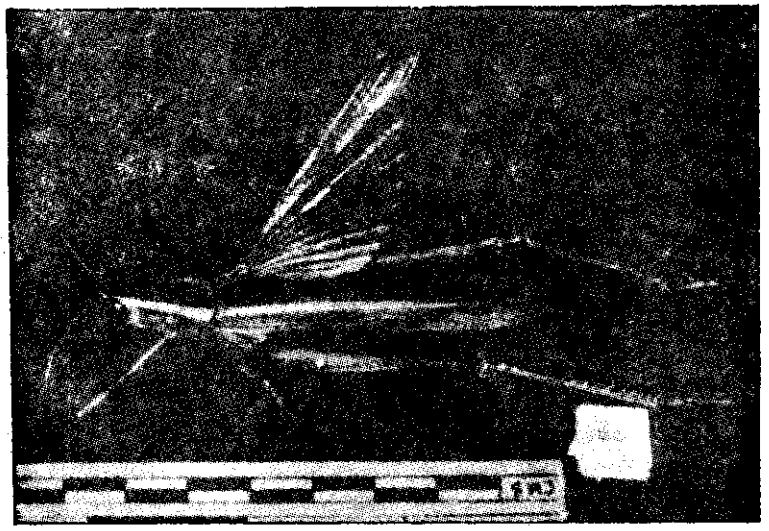

Fig. 110—HETERACRIS CAPENSIS, Thunb.

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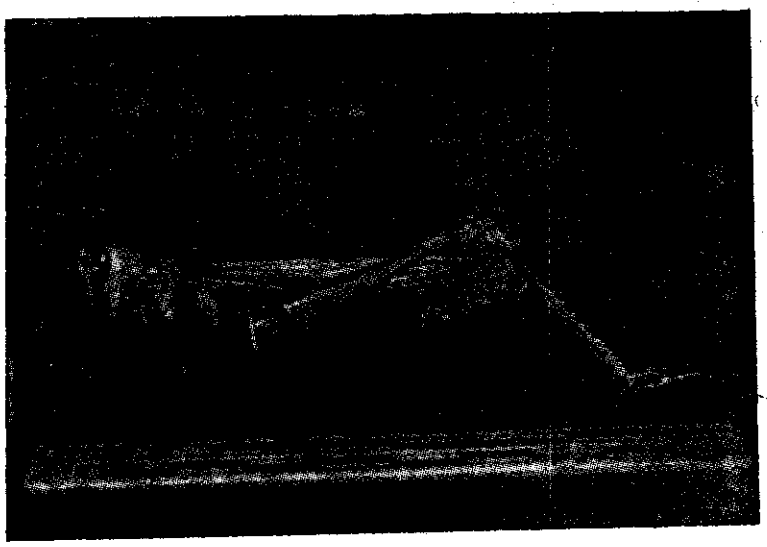

Fig. 111—HETERACRIS CAPENSIS, Thunb.

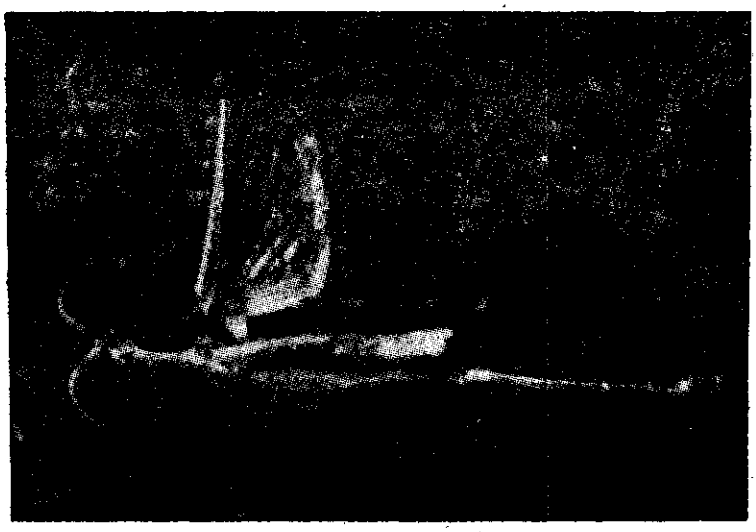

Fig. 112—TYLOTROPIDIUS VARICORNIS, Walker.

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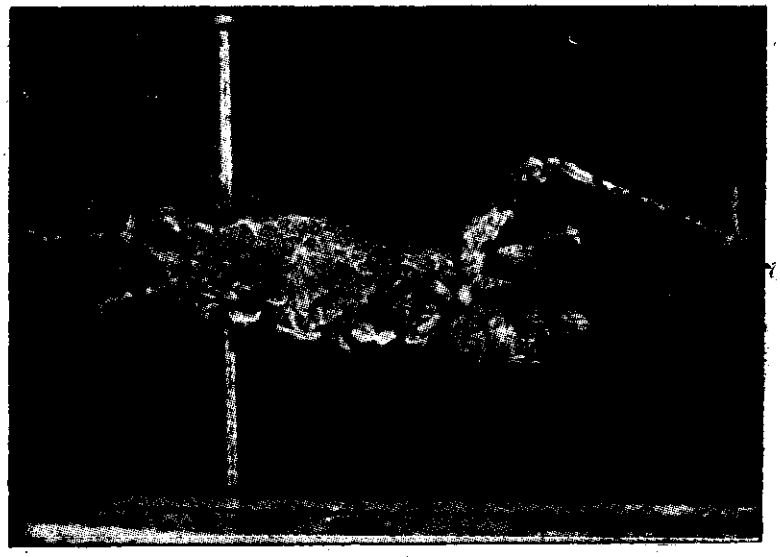

Fig. 113—TYLOTROPIDIUS VARICORNIS, Walker.

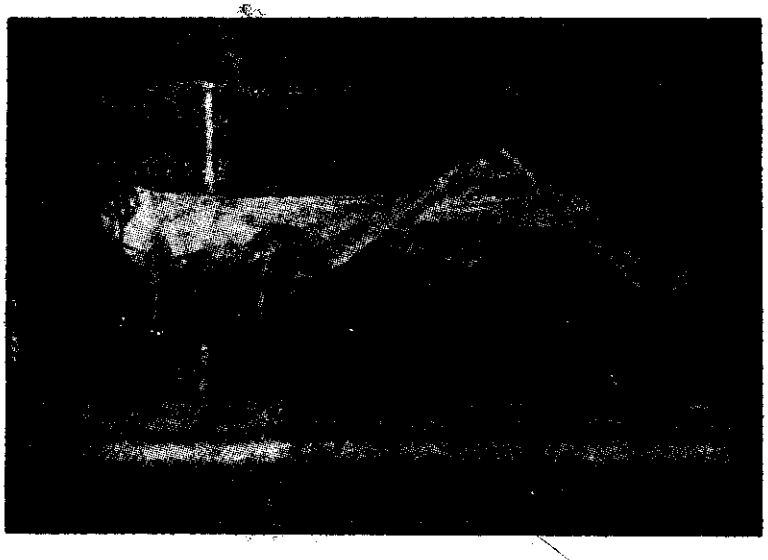

Fig. 114—EUPREPOCNEMIS ALACRIS, Serv.

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Fig. 115—EUPREPOCNEMIS ALACRIS (Serv).

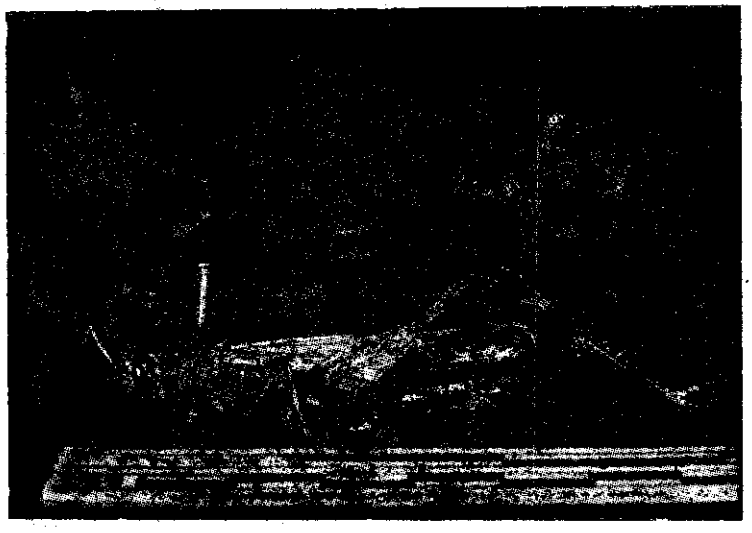

Fig. 116—EUPREPOCNEMIS PULCHRA, Bolivar.

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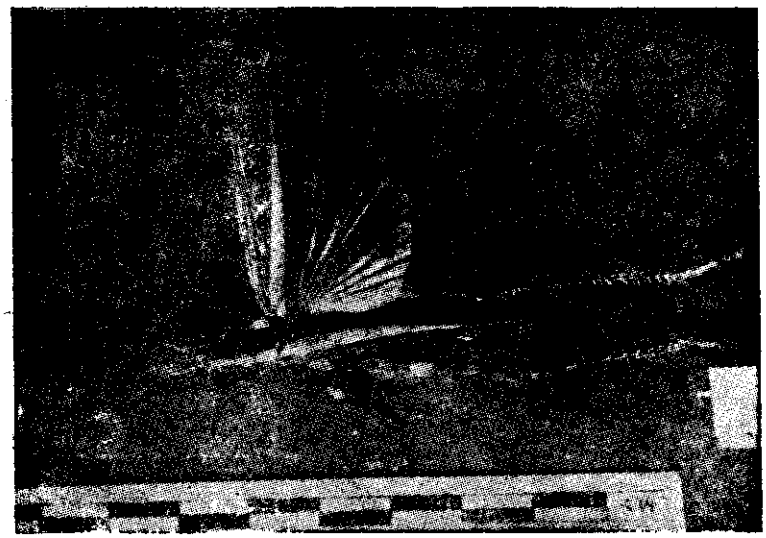

Fig. 117—EUPREPOCNEMIS PULCHRA, Bolivar.

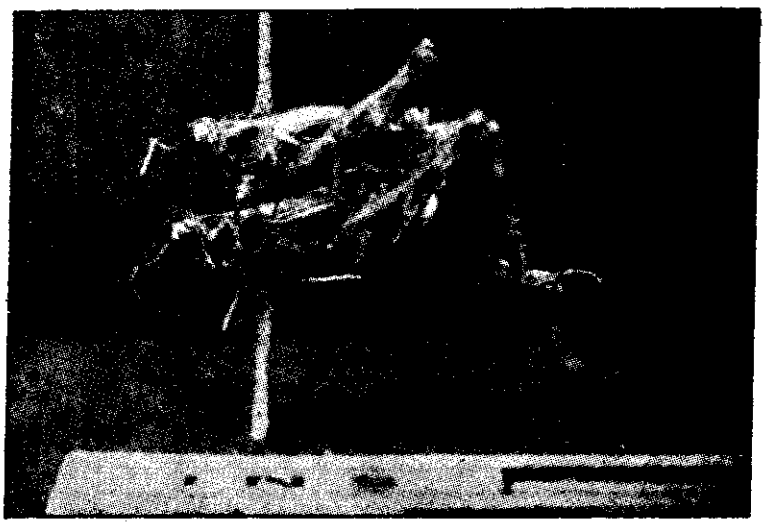

Fig. 118—PARAEUPREPOCNEMIS PICTIPES, Bolivar.