

## THE ACRIDOIDEA (INSECTA : ORTHOPTERA) OF GOA

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( With 3 Text-figures )

### INTRODUCTION

This report is based on two collections made by Shri K. S. Pradhan in 1966 and Shri T. D. Soota in 1970, comprising about 172 exs. from Union Territory of Goa. The list includes 21 species distributed over 17 genera and 2 families. For list of collecting localities and map of Goa reference may be made to Tilak, (1969)\*.

We are grateful to Dr. S. Khera, Joint Director-in-Charge, Zoological Survey of India, Calcutta for his encouragement and to the collectors of this interesting material.

#### *Key to the genera represented in the collection examined from Goa*

1. Head acutely conical, with incurved frons, fastigial furrow present. External apical spine of hind tibia absent, lower basal lobe of hind femur usually longer than upper .2
- Head variable in shape, fastigial furrow absent, fully winged or with reduced wings or rarely apterus. Tympanum usually present. External apical spine of hind tibia present or absent, lower basal lobe of hind femur usually shorter than upper one .3
2. Pronotum above with posterior angles of lateral lobes spread sidewise, (Text-fig. 1a) strongly tuberculate, protruding from under pronotum even when vestigial. Male supra anal plate angular (Text-fig. 1b), cercus short obtusely conical (Text-fig. 1c), epiphallus with acutely curved large lophi (Text-fig. --1d) *Chrotogonus* Serville
- Pronotum elongate, subcylindrical, slightly widening backwards, crossed by three sulci, elytra and wings fully developed. Last abdominal sternite of normal

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\* TILAK, R. 1969. A study of the freshwater and Estuarine fishes of Goa. 2. Notes on the Fishes found within the territory of Goa.—*Rec. zool. Surv. India*.—67 (1-4) : 87—120.

- shape, Male supra anal plate elongate trigonal, cercus short subconical straight with subacute apex, epiphallus with middle portion anchor shaped (Text-fig. 1f) *.Atractomorpha* Saussure
3. Prosternal spine present .4  
 — Prosternal spine absent .11
4. Radial area of elytron with series of regular parallel stridulatory veinlets .. 5  
 — Radial area of elytron without stridulatory veinlets .6
5. Antennae long extending to posterior margin of pronotum or beyond. Pronotum without lateral carinae (Text. fig-1g) *.Gesonula* Uvarov  
 — Antennae short, do not extend to posterior margin of pronotum. Pronotum with distinct lateral carinae (Text-fig. 1h) *.Spathosternum* Karsch
6. Lower external lobe of hind knee with spine like apex ..*Oxya* Serville  
 — Lower external lobe of hind knee with apex rounded, angular or subacute but not spine like 7
7. Mesosternal lobes rounded or obtuse angular or acute angular but not rectangular 8  
 — Mesosternal lobes rectangular .10
8. Dorsum of pronotum flat or weakly tectiform with median and lateral carinae linear. Male cercus with strongly compressed, lobiform or subacute downcurved apex .9  
 — Dorsum of pronotum of variable shape, lateral carinae, if present not linear. Male cercus variable. Prosternal spine cylindrical, bluntly rounded, mesosternal lobes contiguous .. *.Catantops* Schaum
9. Hind femur moderately long, slightly produced beyond end of abdomen, not inflated in basal and not strongly narrowing in apical half. Hind tibia with narrow spines. Pronotum with distinct carinae, dorsum mostly with dark longitudinal spot (Text-Fig. 2f) ...*Eyprepocnemis* Fieber  
 — Hind femur long, produced far beyond end of abdomen, inflated in basal and narrowing in apical half, hind tibia with dense spines. Male cercus narrow with acute apex (Text-fig. 2g) *.Tylotropidius* Stål
10. Tegmina with oblique venation in apical part, transverse veins situated obliquely to principal veins (Text-fig. 3d). Male cercus elongate, conical with acuminate apex, male subgenital plate acuminate, apex pointed *.Pachyacris* Uvarov  
 — Tegmina with straight venation in apical part transverse veins forming almost right angle with principal veins (Text-fig. 3e). Male cercus short not reaching beyond the supra anal plate, narrow at base, conical with obtuse apex, male subgenital plate long, curved upwards conical, apex pointed. ...*Patanga* Uvarov

11. **Body sturdy, frons vertical, integument mostly rugose. Tegmina with intercalary vein, at least in the male well developed, serrate, forming the file of stridulatory mechanism** .12  
 — **Body slender, compressed laterally, frons oblique. Tegmina without stridulatory mechanism. Tarsi with a large wide empodium between the claws** ..... *Acrida* Linnaeus
12. **Median carina of pronotum distinct and cut by one transverse groove** .13  
 — **Median carina of pronotum cut by two grooves** .16
13. **Pronotum short** .14  
 — **Pronotum long** .15
14. **Pronotum above with light X-shaped pattern** *Oedaleus* Fieber  
 — **Pronotum above without X-shaped pattern** *Pternoscirta* Saussure
15. **Pronotum with strong crest and posterior margin elongate and strongly acute angular** ... *Gastrimargus* Saussure  
 — **Pronotum with distinct median carina and with numerous longitudinal ridges** *Morphacris* Walker
16. **Pronotum distinctly angular with well-marked crest which when view in profile is strongly bilobed in front (Text-fig. 31)** *Trilophidia* Stål  
 — **Pronotum very short with widely rounded posterior margin (Text-fig. 3i)** *Acrotylus* Fieber

## TAXONOMIC ACCOUNT

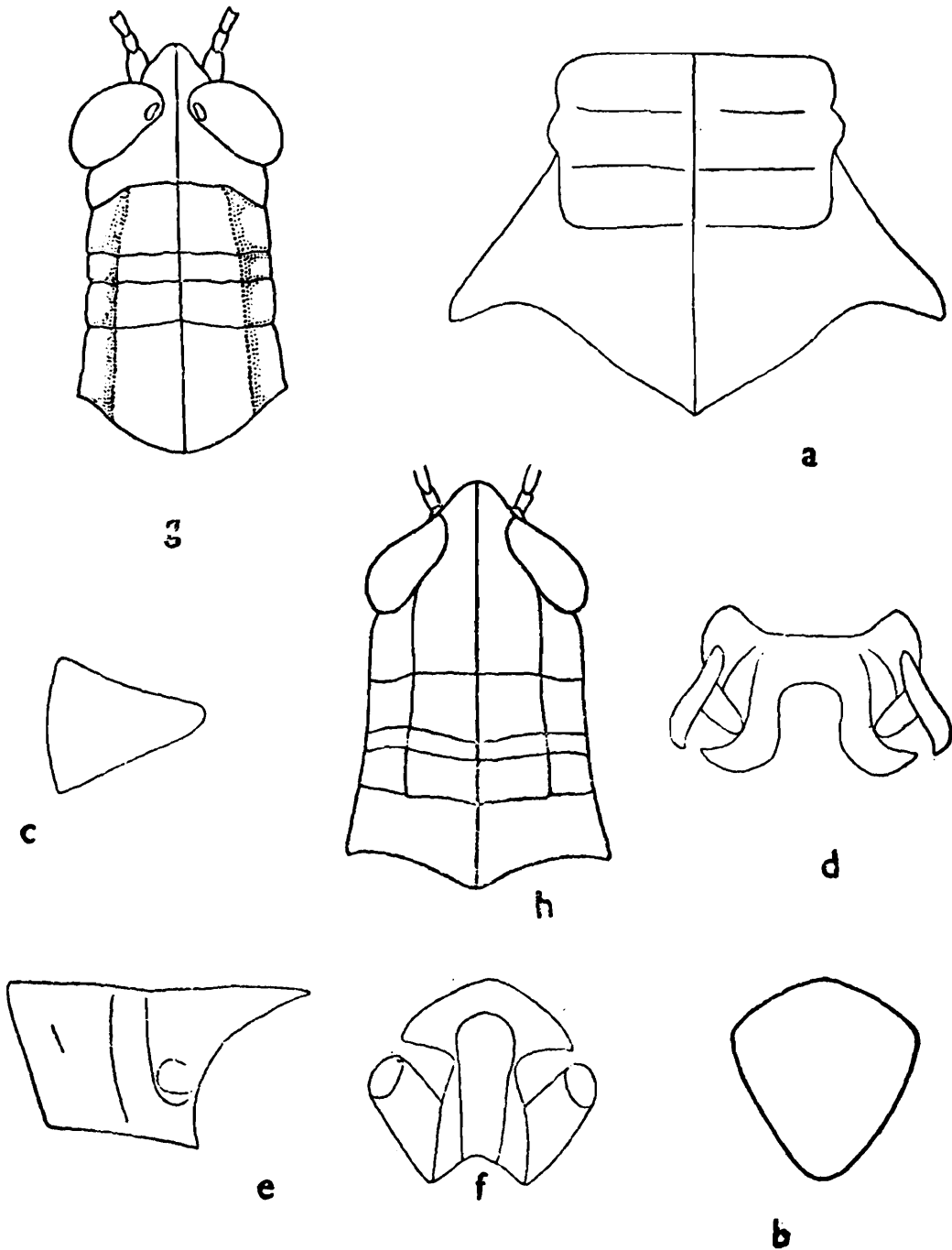
## Family PYRGOMORPHIDAE

1. *Chrotogonus* (*Chrotogonus*) *oxypterus* (Blanchard)

1798. *Gryllus scaber* Fabricius, *Suppl. Ent. syst.* : 196, no. 62-3 (nec. Gmelin, 1788).  
 1836. *Ommexecha oxypterus* Blanchard, *Ann. Soc. ent. Fr.*, 5 : 622  
 1959. *Chrotogonus* (*Chrotogonus*) *oxypterus*: Kevan, *Publ. cult. Comp. Diam.* Angola, no. 43 : 48.

**Material.**—25 exs.: Goa, Margao (Fatorda), 21.iii.1966 (1♂ and 1♀), 23.iii.1966 (1♀), 31.iii.1966 (IN and 2♂♂); Old Goa, 27.iii.1966 (3♀♀); Collem, 3.iv.1966 (4♂♂ and 7♀♀); Sanguem, 5.iv.1966 (1♀); Canacona, 6.iv.1966 (1♀); Margao, 7.iv.1966 (1♂); Veluz, Valpoi Nagargaon, 13.iv.1966 (1♂); Colva Road 14.iv.1966 (1♂); Nuvem, Majorda, 20.iv.1966 (1♀).

**Remarks.**—This species is widely distributed in southern and central India to Bombay on west, north east to West Bengal and Bangladesh and has been known to feed upon the plants of paddy, wheat and coffee. It can easily be distinguished by its characteristic large and broad head and infumated to dark fuscous hind wings.

2. *Atractomorpha crenulata* (Fabricius)1793. *Truxalis crenulata* Fabricius, *Ent. Syst.* 2 : 28.1971. *Atractomorpha crenulata* : Kevan and Tandon, *Ent. mon. Mag.*, 107 : 216,*Material.*—16 exs.: Goa, Margao, 23.iii.1966 (2♀♀), 25.iii.1966 (2♀♀), 2.iv.1966 (1♀); Vasco, 9.iv.1966 (2♀♀); Colva Road, 14.iv.1966

Text-fig. 1 a-d. *Chrotogonus* (*Chrotogonus*) *oxypterus* (Blanchard); a, pronotum, dorsal view; b, Male supra-anal plate, dorsal view; c, Male cercus, lateral view; d, Male epiphallus; e-f. *Atractomorpha crenulata* (Fabricius); e, Pronotum, (lateral view); f, Male epiphallus. g. *Gesonula punctifrons* (Stal); Head and Pronotum, dorsal view; h. *Spathosternum prasiniferum prasiniferum* (Walker); Head and Pronotum, dorsal view.

(2♀♀); Nuvum, Majorda, 20.iv.1966 (1♀); Collem, 3.iv.1966 (1♀); Valpoi, 21.xii.1970 (2♂♂), Partagl village, 25.xii.1970 (1♀).

*Remarks.*—Distributed widely in India and in the neighbouring Indo-Malayan subregion. The size and colour of this species is extremely variable, specimens from Goa are similar in shape and colour when compared to the examples from peninsular India. It can easily be separated by generally slender body form, fastigium of vertex rather short, longer tegmina and in having a well developed membranous area near the posterior margin (Text-fig. 1e). It feeds upon variety of hosts.

### Family ACRIDIDAE

#### Subfamily HEMIACRIDINAE

#### 3. *Gesonula punctifrons* (Stål)

1861. *Acridium (Oxya) punctifrons* Stål, *Eugenies Resa, Orth.*, : 336.

1955. *Gesonula punctifrons* : Willemse, *Publ. natuurhist Gen. Limburg*, 8 : 161.

*Material.*—3 exs.: Goa, Valpoi, 21.xii. 1970 (3♂♂).

*Remarks.*—Recorded earlier from Calcutta (West Bengal), Ledo (Assam), Coimbatore, Madurai and Nedungadun (Tamilnadu). This species occurs in mixed habitat of grass and low vegetation and feeds on paddy and allied crops. It can easily be identified by the characteristic wide vertex in both sexes (Text-fig. 1g), mesonotum with a rather narrow space between the lobes and dorsal valve of female ovipositor with small blunted teeth along the dorso-outer margin.

#### 4. *Spathosternum prasiniferum prasiniferum* (Walker)

1871. *Heteracris prasinifera* Walker, *Cat. Derm. Salt. Brit. Mus.*, 5 : 65.

1952. *Spathosternum prasiniferum prasiniferum* : Mishchenko, *Fauna S.S.S.R.*, 4, no. 2 : 127.

*Material.*—19 exs.: Goa, Canacona, 6. iv. 1966 (1♂); Concalim, 6. iv. 1966 (1♂), Margao, 7. iv. 1966 (1♂), 10. iv. 1966 (1♂); Bicholim, 10. iv. 1966 (2♂♂); Colva Road, 14. iv. 1966 (1♂); Nandre, 16. iv. 1966 (1♀); Marmagoa Harbour, 18. iv. 1966 (1♂); Ponda, 1.xii. 1970 (1♂ and 1♂); Marmagoa harbour, 5.xii. 1970 (1♂ and 2♀♀); Naturlin village (5♂♂)

*Remarks.*—This species occurs throughout India and Indo-Malayan subregion. It has also been reported from south eastern China. It lives in the grassy habitats and can easily be separated from *Spathosternum prasiniferum sinense* Uvarov, in having well developed tegmina reaching distal end of hind femora or slightly beyond it, wing well developed.

## Subfamily OXYINAE

5. *Oxya fuscovittatus* (Marschall)

1836. *Gryllus fuscovittatus* Marschall, *Annln. wien. Mus. Naturg.*, 1 : 211.  
 1971. *Oxya fuscovittatas* Hollis, *Bull. Br. Mus. nat. Hist. (Ent.)*, 26 (7) : 289.

*Material.*—2 exs.: Goa, Tarvala, Margao. 11. iv. 1966 (1♂), Concalim, Margao, 6. iv. 1966 (1♂).

*Remarks.*—Recorded earlier from southern, north west and north east India. This species is a well known pest of rice in various countries. It can easily be distinguished by laterally compressed, weakly bifurcate male cercus (Text-fig. 2 a) and ventral surface of subgenital plate in female almost completely flat or weakly concave.

6. *Oxya hyla hyla* Serville

1831. *Oxya hyla* Serville, *Ann. Sci. Natur.*, 12 : 287.  
 1971. *Oxya hyla hyla* : Hollis, *Bull. Br. Mus. nat. Hist. (Ent.)*, 26(7) : 282.

*Material.*—1 ex.: Goa, Margao, 11. iv. 1966 (1♀).

*Remarks.*—This species is widely distributed in different parts of Indian subcontinent and Africa. It is variable in its general appearance and can easily be identified in having ventral surface of subgenital plate in female with two longitudinal ridges extending forwards from posterior margin, these ridges often toothed (Text-fig. 2 b).

7. *Oxya japonica japonica* (Thunberg)

1824. *Gryllus japonicus* Thunberg, *Mem. Acad. Sci. St. Petrsb.*, 9 : 429.  
 1971. *Oxya japonica japonica* : Hollis, *Bull. Br. Mus. nat. Hist. (Ent.)*, 26 (7) : 302.

*Material.*—3 exs.: Goa, Concalim, Margao, 6.iv.1966 (1♀); Vasco (Margao), 15.iv.1966 (2♀♀).

*Remarks.*—This subspecies is widely distributed in India and Indo-Malayan region. It has also been reported from Andaman Islands. *O. japonica japonica* is variable in size, relative length of tegmina and in the form of male cercus. It can easily be distinguished in female by the lateral longitudinal ridges on ventral surface of subgenital plate without spines except at apices (Text-fig. 2c).

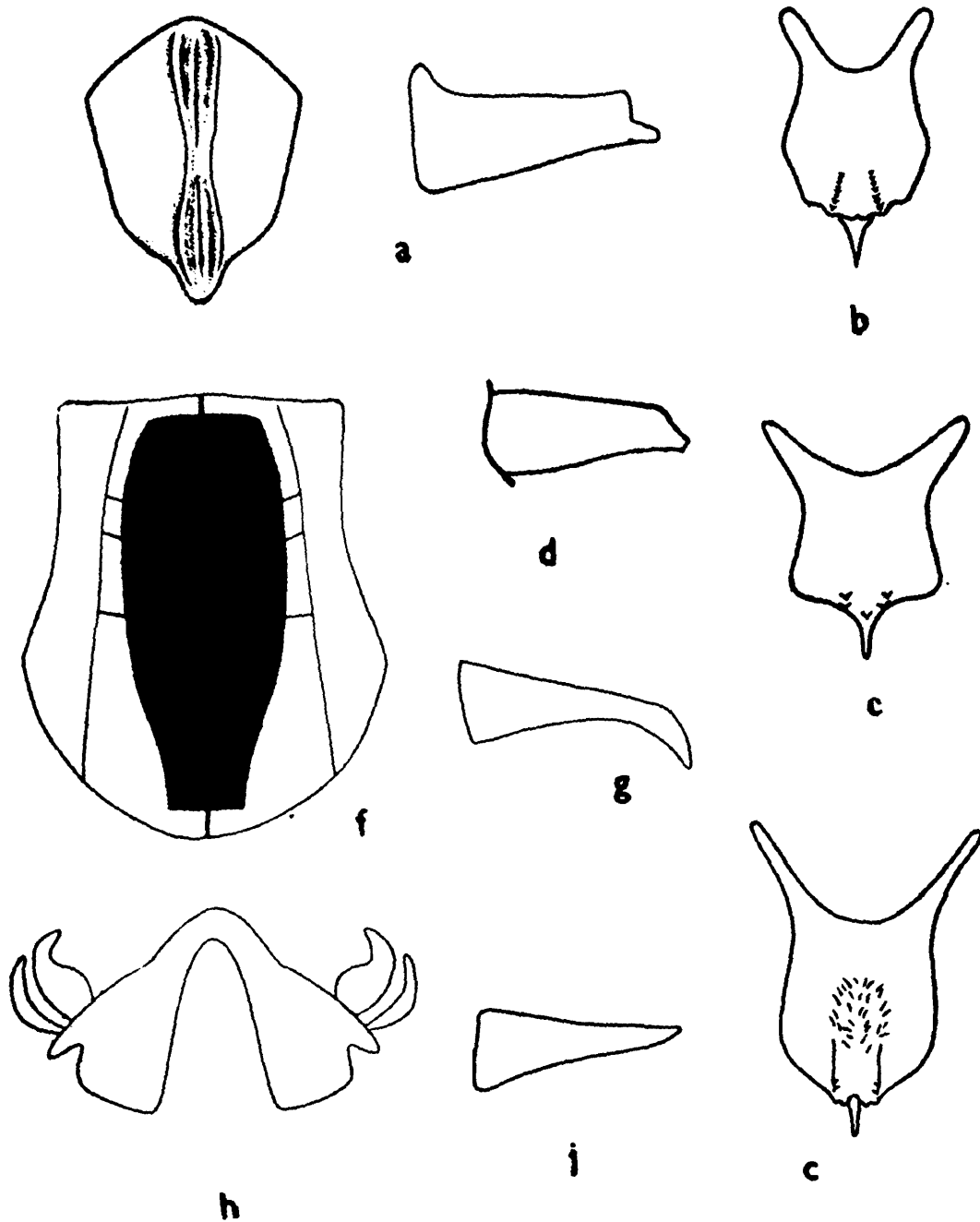
8. *Oxya nitidula* (Walker)

1870. *Acridium nitidulum* Walker, *Cat. Derm. Salt. Brit. Mus. London*, IV : 631.  
 1971. *Oxya nitidula* : Hollis, *Bull. Br. Mus. nat. Hist. (Ent.)*, 26(7) : 315.

*Material.*—3 exs.: Goa: Margao (Fatorda), 23.iii. 1966 (1♀); Concalim (Margao), 6.iv. 1966 (1♀), Margao, 15.iv. 1966 (1♂).

*Remarks.*—Recorded earlier from South India and Ceylon. *O. nitidula* is very similar to *O. japonica* but can easily be separated from

the latter by the truncate apex of the male cercus (Text-fig. 2d) and in having a subapical tooth on each side of a median apical spine on the ventral surface of subgenital plate in female (Text-fig. 2e).



**Text-fig. 2-a.** *Oxya fuscovittata* (Marschall); Male cercus, lateral view; b. *Oxya hyla hyla* Serville; Female subgenital plate, ventral view; c. *Oxya japonica japonica*; Female subgenital plate, ventral view; d-e. *Oxya nitidula* (Walker); d, Male cercus, lateral view; e, Female subgenital plate, ventral view; f-h. *Eyprepocnemis alacris alacris* (Serville); f, Pronotum dorsal view; g, Male cercus, lateral view; h, Male epiphallus; i-j. *Tylotropidius varicornis*; i, Male supraanal plate, dorsal view; j, Male cercus, lateral view.

## Subfamily EYPREPOCNIMIDINAE

9. *Eyprepocnemis alacris alacris* (Serville)

1893. *Acridium alacre* Serville, *Hist. Nat. Ins. Orth.*, : 682.

1958. *Eyprepocnemis alacris alacris* : Dirsh, *Proc. R. ent. Soc. Lond.*, (13) 27 (3-4) : 40.

*Material*.—1 ex.: Veluz, Valpoi Nagargaon, 13.iv. 1966 (1♂).

*Remarks*.—This is a typical species of the genus with a wide distribution in Northern, Southern and Eastern India. It has also been reported from Pakistan, Afghanistan, Bangladesh and Ceylon. It can easily be separated from other members of genus in having bluish grey hind tibia, with two whitish rings at the base and reddish apex and tarsus; male cercus gradually narrowing towards apex incurved and downcurved, with acute apex (Text-fig. 2 g) and the shape of male epiphallus (Text-fig. 2h).

10. *Tylotropidius varicornis* (Walker)

1870. *Heteracris varicornis* Walker, *Cat. Derm. Salt. Brit. Mus. (nat. Hist.)*, IV : 667.

1921. *Tylotropidius varicornis* : Uvarov, *Trans. R. ent. Soc. Lond.*, : 136.

*Material*.—20 exs.: Goa, Anja Diu, 13.xii. 1970 (1♂); Khawat village 14.xii. 1970. (3♂♂ and 2♀♀); Partagl village, 15.xii. 1970 (1♂); Sishorh village, 13.xii. 1970 (6♂♂). Banmag village, 20.xii. 1970 (6♂♂ and 2♀♀)

*Remarks*.—This species has been recorded mainly from South India, Burma and Ceylon. This species can easily be distinguished by bituberculate prosternal spine, elytra with semi-transparent membrane having a row of triangular whitish spots upon the radial nervure, male supra anal plate elongate triangular (Text-fig. 2 i) sulcated and male cercus slightly compressed in apical part, acuminate (Text-fig. 2j).

## Subfamily CATANTOPINAE

11. *Catantops henryi* I. Bolivar

1918. *Catantops henryi* I. Bolivar, *Rev. Acad. Madrid*, 16 : 404.

1956. *Catantops henryi* : Dirsh, *Publ. Cult. Comp. Diam. Angola*, no. 28 : 90.

*Material*.—5 exs : Old Goa, 27.iii. 1966 (1♂); Aralem, 28.iii. 1966 (1♂); Canacona, 6.iv. 1966 (1♀); Suctalem, 16.iv. 1966 (1♀); Mahalvasa 16.xii. 1970 (1♂).

*Remarks*.—This species occurs all along the western coast of India and has also been recorded from upper Burma. *Catantops henryi* can easily be distinguished by two broad incomplete black fasciae on external side of hind femur (Text-fig. 3 a) and moderately robust male cercus (Text-fig. 3 b), broadened in the base, almost straight, with bifurcate apex, the internal-upper lobe short, with rounded apex.



12. *Catantops pinguis innotabilis* (Walker)

1870. *Acridium innotabile* Walker, *Cat. Derm. Salt. B. M.*, IV : 629.  
 1956. *Catantops pinguis innotabilis* Dirsh, *Publ. Cult. Comp. Diam. Angola* no. 28 : 105.

*Material*.—5 exs.: Goa Marmogoa harbour, 22.iii. 1966 (1♀), Old Goa, 27.iii. 1966 (1♀); Caisua Fort, 29.iii. 1966 (1♀); Marmogoa, 18. iv. 1966 (1♂); Marmogoa harbour 2.xii. 1970 (1♂ and 1♀).

*Remarks*.—This species is widely distributed in Indian subcontinent. It is very variable in size, colour pattern and in the shape of male cercus. Male cercus normally with widened, slightly hammer shaped apex (Text-fig. 3c).

## Subfamily CYRTACANTHACRIDINAE

13. *Pachyacris vinosa* (Walker)

1870. *Acridium vinosum* Walker, *Cat. Derm. Salt. B. M.*, 3 : 588.  
 1923. *Pachyacris vinosa* : Uvarov, *Ann. Mag. nat. Hist.* 9(XI) : 478.

*Material*.—2 exs.: Goa, Margao (Fatorda), 23.iii. 1966. (1♂ and 1♀).

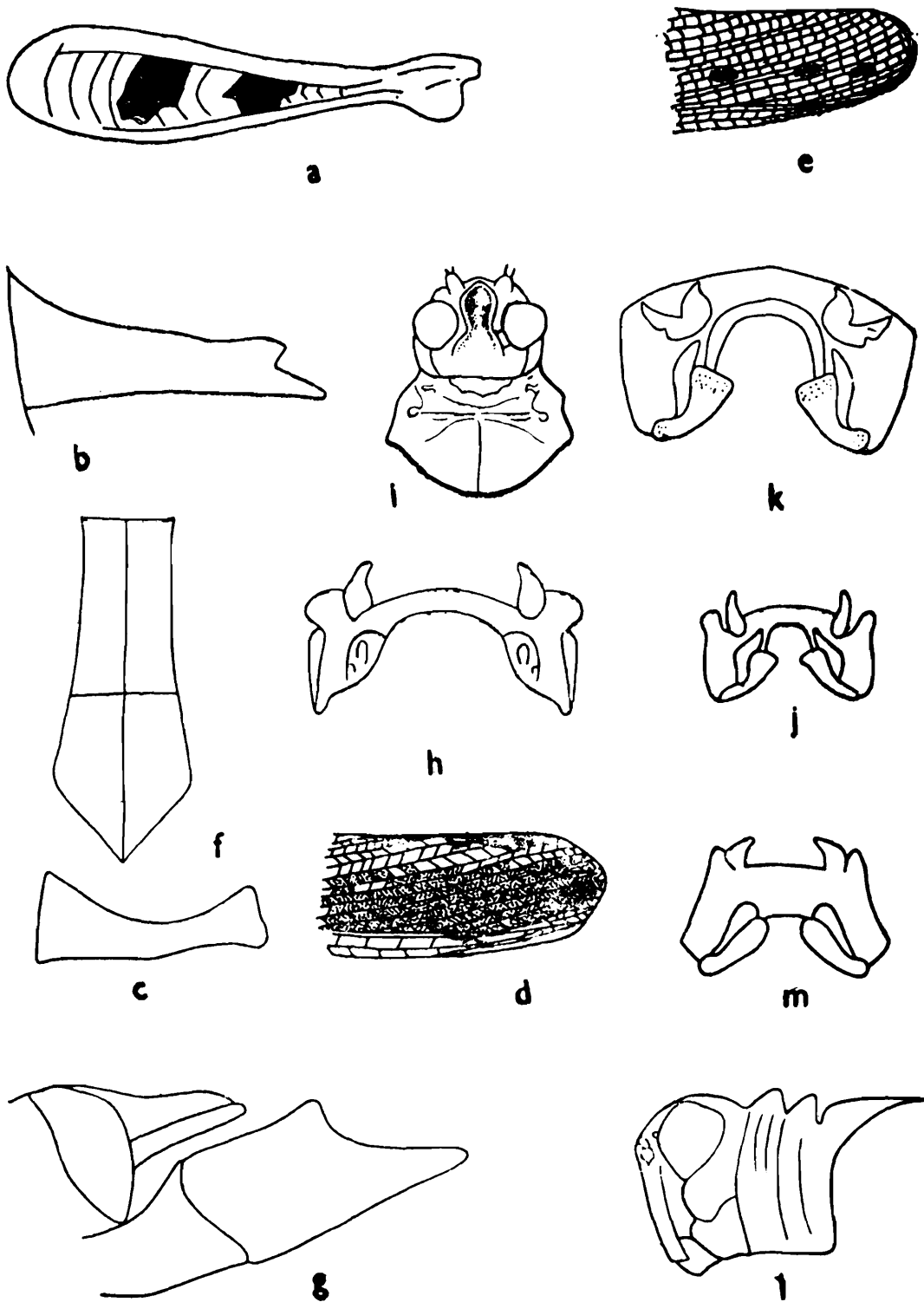
*Remarks*.—This species is fairly well distributed in India. Recorded earlier from Kumaon hills (U.P.), Chakardharpur (Orissa), Chota nagpur (Bihar), Mohanpur, pukur (West Bengal), Aijal, Lushai Hills, (Assam). *P. vinosa* has also been known from Burma, western and south eastern china. It can easily be indentified in having tegmina with oblique venation in apical part, transverse vein situated obliquely to principal veins (Text-fig. 3d), mesosternum in the female with a trapezoidal space between the lobes and male cercus elongate conical with acuminate apex.

14. *Patanga succincta* (Johansson)

1763. *Gryllus Locusta succinctus* Johansson, *Amoen. Acad. VII Centur. Ins. rarior.*, : 398.  
 1923. *Patanga succincta* Uvarov : *Ann. Mag. nat. Hist.* 9(XII) : 364, 365.

*Material*.—2 exs.: Goa, Mangeshi, 27.iii. 1966 (1♂ and 1♀).

*Remarks*.—*Patanga succincta* is popularly known as Bombay Locust and is widely distributed throughout plains of Indian subcontinent and all over south and south eastern Asia and Malayan Archipelago. This species can easily be distinguished in having tegmina with a straight venation in apical part, transverse veins forming almost right angle with principal veins (Text-fig. 3e), wing base rosy violet or colourless, apically colourless, male subgenital plate long, curved upwards, conical, apex pointed.



Text-fig. 3 a-b. *Catantops henryi* I. Bolivar; a, Hind-femur, external side; b, Male cercus, lateral view; c. *Catantops pinguis innotabilis* (Walker); Male cercus, lateral view; d. *Pachyacris vinosa* (Walker); Elytra, apical part; e. *patanga succincta* (Johansson); Elytra, apical part; f.-h. *Acrida exaltata*; f, Pronotum, dorsal view; g. Male subgenital plate in profile; h, Male, epiphallus; i-j. *Acrotylus humbertianus* Saussure; i, Head and Pronotum, dorsal view, j, Male epiphallus; k. *Gastrimargus africanus orientalis* Sjostedt; Male, epiphallus; l-m. *Trilophidia annulata*; l, Pronotum in profile; m Male, epiphallus.

## Subfamily ACRIDINAE

15. *Acrida exaltata* (Walker)

1859. *Truxalis exaltata* Walker, *Ann. Nat. Hist.*, 4 : 222.

1954. *Acrida exaltata* : Dirsh, *Bull. Soc. Fouad. Ent.*, 38 : 149.

*Material.*—7 exs. : Goa, Mercas, 24.iii. 1966 (2♂♂); Collem, 3.iv. 1966 (2♂♂ and 1♀); Veluz Valpoi, 13.iv. 1966 (1♂); Satpali village, 26.xi. 1970 (1♀).

*Remarks.*—This species is widely distributed throughout plains and hilly regions of Indian subcontinent. It has also been reported from south east Tibet, Afghanistan, south east Iran and middle east countries. *Acrida exaltata* varies in size and general colouration from uniformly green to ochraceous and brownish. It can easily be recognised by comparatively slender pronotum (Text-fig. 3f) pronotal disc, relatively narrow, head less robust, male subgenital plate in profile short (Text-fig. 3g) and the shape of male epiphallus (Text-fig. 3 h).

## Subfamily OEDIPODINAE

16. *Acrotylus humbertianus* Saussure

1884. *Acrotylus humbertianus* Saussure, *Mém. Soc. Genève*, xxviii (9) : 189.

*Material.*—4 exs. : Goa, Mangeshi (Panjim), 27.iii. 1966 (1♂); Margao, 2. iv. 1966 (1♂); Veluz Valpoi, 13. iv. 1966 (1♀); Kodal Valpoi, 13.iv. 1966 (1♀).

*Remarks.*—This species is fairly well distributed all over Indian subcontinent and Ceylon. It can easily be identified by the following characters, Tegmina long, extending beyond the middle of hind tibiae, wing base yellow with a wide incomplete dark band and the shape of male epiphallus (Text-fig. 3j).

17. *Gastrimargus africanus orientalis* Sjöstedt

1888. *Oedaleus* (*Gastrimargus*) *marmoratus* var. *africanus* Saussure, *Mem. Soc. Geneve*, 30 (1) : 39.

1951. *Gastrimargus africanus orientalis* Bei-Bienko and Mischenko, *Fauna, S.S.S.R.*, No. 40 : 581.

*Material.*—5 exs. : Goa, Caisua Fort uphill, 29.iii.1966 (1♂); Nandre, 16.iv. 1966 (2♂♂); Khawat village, 14.xii.1970 (2♂♂).

*Remarks.*—This species occurs from peninsular India to the north of Himalayas, Ceylon and southern Tibet. It can easily be distinguished in having pronotum without a distinct constriction, its median carina cut by the transverse sulcus, hind femora ventrally blue black and the shape of male epiphallus (Text-fig. 3k).

18. *Morphacris citrina* Kirby

1910. *Morphacris citrina* Kirby, *Syn. Cat. Orth.*, 3 : 219.

*Material*.—15 exs.: Goa, Margao, 22.iii.1966 (1N); Margao (Fatorda), 23.iii.1966 (2♂♂ and 2♀♀); 24.iii.1966 (2♂♂ and 1N); Arvalem, 29.iii.1966 (2♀♀); Collem, 3.iv.1966 (3♀♀); Colva Road, 14.iv.1966 (1♂); Nandre, 16.iv.1966 (1♂); Concalim, Margao, 6.iv.1966 (1♂).

*Remarks*.—This species is fairly well distributed in India and Ceylon and can easily be distinguished in having numerous longitudinal ridges on the pronotum. Wing light yellow at the base, bordered by dark black fasciae.

19. *Oedaleus abruptus* (Thunberg)

1815. *Gryllus abruptus* Thunberg, *Mèm. Acad. Petersb.*, 5 : 233.

1951. *Oedaleus abruptus* Bei-Bienko and Mishchenko, *Fauna S.S.S.R.*, No. 4:0 579.

*Material*.—2 exs: Goa, Calangute Beach, 29.iii.1966 (1♂ and 1♀).

*Remarks*.—This is a typical species of the genus with a wide distribution in Indian subcontinent from Himalayas to Kanya Kumari and has also been known from southern and central China. It can easily be distinguished by the light bands of the X-shaped markings of the pronotum situated on slightly raised ridges.

20. *Pternoscirta cinctifemur* (Walker)

1859. *Acidium cinctifemur* Walker, *Ann. Mag. nat. Hist.*, 4 (3) : 223.

1914. *Pternoscirta cinctifemur* Kirby, *Faun. Brit. India, Orth. Acrid.*, : 134.

*Material*.—2 exs.: Goa, Mercedes, 24.iii.1966 (1♂); Canacona uphill. 6. iv. 1966 (1♂).

*Remarks*.—Recorded earlier from southern India and Ceylon. It can easily be distinguished in having wings red at base, external side of hind femora buff or bluish grey, internal side black and banded with black above.

21. *Trilophidia annulata* (Thunberg)

1815. *Gryllus annulatus* Thunberg, *Mem. Acad. Sci. Sb. Petersb.*, 5 : 234.

1965. *Trilophidia annulata* Hollis, *Trans. R. ent. Soc. Lond.*, 117 (8) : 251.

*Material*.—29 exs.: Goa, Margao (Fatorda), 21.iii.1966 (1♂), 23.iii.1966 (1♂ and 1♀); Mercedes, 24.iii.1966 (1♂); Margao, 25.iii.1966 (1♂ and 1♀); Mangeshi, Panjim, 27.iii.1966 (1♂ and 2♀♀); Old Goa 27.iii.1966 (1♂); Arvalem, 28.iii.1966 (1♂); Caisua Fort, uphill, 29.iii.1966 (3♀♀); Barim bridge, 1.iv.1966 (1♂), 1.iv.1966 (2♀♀); Margao, 2.iv.1966 (1♂ and 1♀); Colem, 3.iv.1966 (1♀); Sanguem, 5.iv.1966 (1♀); Margao,

7.iv.1966 (1♂); Bicholim, 10.iv.1966 (1♂ and 1♀); Margao, 11.iv.1966 (1♀); Veluz Valpoi, 13.iv.1966 (1♀), 21.xii.1970 (2♀♀); Sanguem, 11.xii.1970 (1♂).

*Remarks.*—*Trilophidia annulata* is widely distributed in India. Its range of distribution extends from Pakistan to North Borneo and extends into Palaearctic region in Mongolia, China, Korea and Japan. This species is very variable in size and general colouration. It can easily be distinguished by the shape of the lophi of male epiphallus (Text-fig. 31).

#### SUMMARY

A comprehensive report of the Acridoidea fauna of Goa is given here for the first time, and is based on the collections made by parties of the Zoological Survey of India. In all 21 species belonging to 2 families and 17 genera are reported as follows:—

**Family 1.** PYRGOMORPHIDAE : *Chrotogonus*, *Atractomorpha*.

**Family 2.** ACRIDIDAE : *Gesonula*, *Spathosternum*, *Oxya*, *Eyprepocnemis*, *Tylotropidius*, *Catantops*, *Pachyacris*, *Patanga*, *Acrida*, *Acrotylus*, *Gastrimargus*, *Morphacris*, *Oedaleus*, *Pternoscirta*, *Trilophidia*.

A key to the identification of genera examined has also been provided.