

## THE SCARABAEIDAE (INSECTA : COLEOPTERA) OF ANDAMAN AND NICOBAR ISLANDS, WITH DESCRIPTION OF A NEW SPECIES

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### INTRODUCTION

Arrow in his monographic works on Fauna of British India series (1910, 1917, 1931) recorded 37 species of scarab beetles from Andaman and Nicobar groups of Islands. Since then no further report is available to us for members of 4 subfamilies dealt with in this work. The present paper deals with materials collected by various survey parties of Zoological Survey of India during last several years from the Andaman and Nicobar Islands. Earlier materials which were already incorporated in National Zoological collections from Andaman and Nicobar Islands have also been studied. In order to ascertain the range of variation of individual species, wherever available, extralimital specimens of the species recorded here have also been studied. New distributional data thus obtained have been incorporated under appropriate species. Biological informations, whenever available, have also been included. One species, *Onthophagus nicobaricus* has been described as new to Science and six more species have been recorded for the first time from these areas. Altogether 43 species belonging to 22 genera and 4 subfamilies are recorded here. Types will be deposited in Zoological Survey of India, Calcutta.

### SYSTEMATIC LIST

#### FAMILY SCARABAEIDAE

#### SUB-FAMILY 1 CETONIINAE

#### Genus 1 *Macronota* Hoffmanssegg

1. *M. regia* (Fabricius)

#### Genus 2. *Diceros* Lacordaire

2. *D. roepstorffi* Wood-Mason

#### Genus 3. *Glycyphana* Burmeister

3. *G. torquata* (Fabricius)
4. *G. nicobarica* Janson
5. *G. andamanensis* Janson

Genus 4. *Glycosia* Schoch

- 6.
- G. biplagiata*
- Arrow

Genus 5. *Protaetia* Burmeister

7. *P. andamanarum* Janson  
 8. *P. bidentipes* Arrow  
 9. *P. fusca* (Herbst)  
 10. *P. acuminata* (Fabricius)

Genus 6. *Agestrata* Eschscholtz

- 11.
- A. orichalcea*
- (Linnaeus)

Genus 7. *Thaumastopeus* Kraatz

12. *T. pullus* (Billberg)  
 13. *T. nicobaricus* (Janson)

Genus 8. *Dasyvalgus* Kolbe

- 14.
- D. insularis*
- Arrow

Genus 9. *Charitovalgus* Kolbe

- 15.
- C. andamanicus*
- Kolbe

## SUB FAMILY II. DYNASTINAE

Genus 10. *Oryctes* Illiger

- 16.
- O. rhinoceros*
- (Linnaeus)

Genus 11. *Eophileurus* Arrow

- 17.
- E. planatus*
- (Wiedmann)

Genus 12. *Clyster* Arrow

- 18.
- C. retusus*
- Arrow

Genus 13. *Heteronychus* Burmeister

- 19.
- H. lioderes*
- Redtenbacher

Genus 14. *Alissonotum* Arrow

- 20.
- A. elongatum*
- Arrow

## SUB FAMILY III RUTELINAE

Genus 15. *Parastasia* Westwood

21. *P. andamanica* Ohaus  
 22. *P. confluens* Westwood

23. *P. heterocera* Ohaus
24. *P. bimaculata* Guerine
25. *P. luteola* (Westwood)

Genus 16. ***Popillia*** Serville

26. *P. marginicollis* Hope
27. *P. andamanica* Kraatz

Genus 17 ***Anomala*** Samovelle

28. *A. dorsalis* ( Fabricius)
29. *A. andamanica* Arrow
30. *A. decorata* Kirsch
31. *A. shanica* Arrow
32. *A. chloronota* Arrow
33. *A. desiccata* Arrow
34. *A. rhodomela* Arrow
35. *A. isolata* Arrow

Genus 18. ***Adoretus*** Castelnau

36. *A. costopilosus* Ohaus
37. *A. vulpeculus* Arrow
38. *A. versutus* Harold

SUB FAMILY IV COPRINAE

Genus 19. ***Catharsius*** Hope

39. *C. molossus* (Linnaeus)

Genus 20. ***Copris*** Geoffroy

40. *C. spinator* Harold

Genus 21 ***Onthophagus*** Latreille

41. *O. cervus* (Fabricius)
42. *O. nicobaricus* sp. nov.

Genus 22. *Paraphytus* Harold43. *P. andamanus* Arrow

## SYSTEMATIC ACCOUNT

I. *Macronota* Hoffmanssegg1 *Macronota regia* (Fabricius)1801. *Cetonia regia*, Fabricius, *Syst. Eleut.*, 2 : 1591910. *Macronota regia*, Arrow, *Fauna Brit. India* (Coleopt. Lamell.), 1: 46-47*Material examined* 13 exs.

*Diagnostic characters* Pronotum gradually narrowed in front, base lobed in the middle; decorated with three pale longitudinal lines. Elytra excised at outer margins. Sexual dimorphism is not well marked. Length 15-17 mm; Breadth 8 mm.

*Distribution* The species has been recorded from Indonesia; Malay peninsula; Burma; Bangladesh; Chittagong (Rangamati) and Andaman Islands.

*Remarks* Of the thirteen specimens examined, four are from Andaman. Specimens from Andaman are a little larger in size and markings on dorsal surface are more strongly marked. The species was not earlier known from Bangladesh, Rangamati Chittagong is a new locality record.

II. *Diceros* Lacordaire2. *Diceros roepstorffi* Wood-Mason1876. *Diceros roepstorffi* Wood-Mason, *Jour. Asiat. Soc. Beng.*, (2) : 521910. *Diceros roepstorffi*, Arrow, *Fauna Brit. India* (Coleopt. Lamell.), 1 : 74*Material examined* 2 exs.

*Diagnostic characters* Black and shining with a yellow patch on each elytron a little before middle. Hind angles of pronotum a little produced, scutellum short, sides sinuate and apex blunt. Clypeus unarmed with a single median lobe. Length 17 mm; Breadth 8 mm.

*Distribution* The species is known only from the Andaman Islands.

III. *Glycyphana* Burmister3. *Glycyphana torquata* (Fabricius)1801 *Cetonia torquata* Fabricius, *Syst. Eleut.*, 2 : 1571881 *Glycyphana subcineta* Janson, *Cist. Ent.*, 2 : 6071894. *Glycyphana bimacula* Kraatz, *Deutsche Ent. Zeitschr.*, 294 p.1910. *Glycyphana torquata*, Arrow, *Fauna Brit. India* (Coleopt. Lamell.) 1 : 124

*Material examined* 1 ex.

*Diagnostic character* Elongate, depressed and feebly narrowed behind. Black, except front of the head, opaque above, shining below. Pronotum broadly bordered with red, red markings interrupted before scutellum and terminate before front angles. Clypeal margin sinuate behind. Hind angles of pronotum obtuse, scutellum blunt. Elytral markings dull, not spinose at apical angles. Mesosternal epimera yellow. Length 17 mm; Breadth 8.5 mm

*Distribution* The species has been recorded from Andaman Islands and Singapore.

*Remarks* · Fabrician type had Java as the locality. Arrow (1910) thought that the author was ignorant of the type locality, and Java was subsequently erroneously added to the type. This is the first time the species is recorded from Singapore based on a single specimen present in the collection of Zoological Survey of India, Calcutta.

4. *Glycyphana nicobarica* Janson

1877. *Glycyphana nicobarica* Janson, *Cist. Ent.*, 2 : 144

1910. *Glycyphana nicobarica*, Arrow *Fauna Brit. India* (Coleopt. Lamell), 1 : 124-125

*Material examined* 3 exs.

*Diagnostic characters* : Elongate, feebly narrowed behind, depressed and almost parallel-sided. Dorsal surface deep green, lower surface, head and legs olivaceous, pygidium brick red; decorated with pale yellow markings. Clypeus sinuate in front, hind angles of pronotum obtuse, scutellum blunt. Elytra strongly sinuated behind shoulders, sharply angular but not spinose at apical angles. Pygidium concentrically striated.

*Distribution* The species has been recorded from Nicobar Islands and Burma.

*Remarks* : The species was so far known only from the Nicobar Islands. During the present study two specimens have been studied from Burma (One from Rangoon and another from Tavoy).

5. *Glycyphana andamanensis* Janson

1877. *Glycyphana andamanensis* Janson *Cist. Ent.* 2 : 143

1910. *Glycyphana andamanensis* Arrow, *Fauna. Brit. India* (Coleopt. Lamell.), 1 : 127-128

*Material examined* 6 exs.

*Diagnostic characters* Moderately elongate and depressed. Dark green or olive in male, black in female, head, legs and lower surface castaneous or blackish; decorated with whitish markings. Clypeus sinuate in front margin. Hind angles of pronotum obtuse, not abruptly excised behind. Scutellum blunt, tarsi compact. Elytra spinose at apical angles, all spots minute. Length 13-14 mm; Breadth 6.5-7 mm.

*Distribution* The species has been recorded only from Andaman Islands.

*Remarks* The species shows sexual dimorphism in colouration. The male is olive green or brown above with the lower surface green and broadly bordered with yellow. Female is black with small yellowish spots only at the sides of abdomen.

IV *Glycosia* Schoch6. *Glycosia biplagiata* Arrow

1907. *Glycosia biplagiata* Arrow. *Ann. Mag. nat. Hist.*, (7) 19 : 351

1910. *Glycosia biplagiata* Arrow, *Fauna Brit. India* (Coleopt. Lamell.), 1 : 130-131

*Material examined* No material was available to us for study.

*Diagnostic characters* Elongate oval and depressed, broad at shoulders. Shining black, elytra opaque and shorty with a lemon yellow patch, beyond the middle of each elytron. The patch broad at outer margin, narrowing towards inner margin.

Pronotal base inclined at sides and excised in front of scutellum. Sternal process vertical in front, hind tibia not digitate.

*Distribution* The species is known from Burma and Andaman Islands.

*Remarks* Above description is given from literature.

V *Protaetia* Burmister7 *Protaetia andamanarum* Janson

1877. *Protaetia andamanarum* Janson, *Cist. Ent.*, 2 : 145

1910. *Protaetia andamanarum* Arrow, *Fauna Brit. India* (Coleopt. Lamell.), 1 : 148

*Material examined* 6 exs.

*Diagnostic characters* Compact and moderately convex. Black; vertex, pronotum, scutellum and elytra opaque and shooty, elytra decorated with irregular orange spots, reduced in male. Clypeus broad, finely punctured, slightly notched and feebly reflexed in front. Pronotum with sides sinuated, posterior angles well marked, base deeply but narrowly excised in the middle, sparsely punctured. Length 20-24 mm; Breadth 11-12.5 mm

*Distribution* The species has been recorded only from the Andaman Islands.

*Remarks* Sexes vary in number of characters. Besides of reduction of colour pattern in male it has apices of elytra sharply spinose, uppermost tooth of front tibia reduced, abdomen a little arched and spurs of the hind tibia sharp. Apical angles of the elytra blunt and last ventral segment closely punctured in female.

8. *Protaetia bidentipes* Arrow

1907. *Protaetia bidentipes* Arrow, 1907, *Ann. Nat. Hist.*, (7) 19 : 351

1910. *Protaetia bidentipes*, Arrow, *Fauna Brit. India* (Coleopt. Lamell.) 1 : 153

*Material examined* No material was available to us for study.

*Remarks* The species is definitely known from Nicobar Islands and doubtfully referred to Burma (Rangoon). Nothing is known regarding its biology.

The species is with an opaque bloom on upper surface, mesosternum transverse before coxae, front tibiae bidentate in both sexes and clypeus deeply notched in front. Length 18mm; Breadth 10mm

### 9. *Protaetia fusca* (Herbst)

1790. *Cetonia fusca* Herbst, *Natursyst. Käfer*, Part III : 257 p. 32, fig 4.

1801. *Cetonia mandarina* Weber, *Obs. Ent.*, 168

1801. *Cetonia atomaria* Fabricius, *Syst. Eleuth.*, part II : 153.

1830. *Cetonia fictilis* Newman, *Ent. Mag.*, part V : 169

1910. *Protaetia fusca*, Arrow, *Fauna Brit. India* (Coleopt. Lamell.), 1 : 154

*Material examined* 1 ex.

*Diagnostic characters* · Upper surface decorated with an indefinite grey or yellow tracery, opaque. Scutellum very short and blunt, apical angles thinly spinose. Hind tibiae covered with yellow hairs at the inner side. Length 14-16 mm; Breadth 7-9 mm

*Distribution* This species is known from Mauritius; N. Queensland; S. China; Malay Archipelago; Malay Peninsula; Tenasserim; Siam, Burman and India. In India the species is known from Andaman Island, West Bengal (Calcutta) and Assam (Cachar).

*Biology* It has been reported that the larvae are very destructive to the roots of Canna and other cultivated plants in Singapore. In Queensland the beetles have been found to attack the nests of the stingless bees, *Trigona* sp. for honey.

*Remarks*: It is one of the most widely distributed species among the Cetoniinae. The single specimen studied is from Burma and it agrees well with the description given by Arrow (1910).

### 10. *Protaetia acuminata* (Fabricius)

1775. *Cetonia acuminata* Fabricius, *Syst. Ent.*, p. 50

1801. *Cetonia marmorata* Fabricius, *Syst. Eleut.* 2 : 154

1910. *Protaetia acuminata*, Arrow, *Fauna Brit. India* (Coleopt. Lamell), 1 : 155

*Material examined* 13 exs.

*Diagnostic characters* Upper surface partly shining and partly covered with opaque bloom, clothed with yellow setae at the sides. Head bearing a longitudinal carina. Front tibiae tridentate. Mesosternum transverse before the coxae. Length 14-19 mm; Breadth 7-10 mm

*Distribution*: The species is known from Malay peninsula Java; Sumatra; Borneo; Burma and Nicobar and Andaman Islands.

*Biology* · The species occurs in large numbers in Andaman Islands but nothing is known about its habit.

*Remarks* Specimen from Andaman differ from typical form by larger size, more evenly distributed pale markings and less distinct median line.

## VI. *Agestrata* Eachscholtz

### 11 *Agestrata orichalcea* (Linnaeus)

1769. *Scarabaeus orichalceus* Linnaeus, *Amoen. Acad.*, 7 : 507  
 1775. *Cetonia chinensis* Fabricius, *Syst. Ent.*, p. 42  
 1776. *Scarabaeus oblongus* Brown, *Illustr. Zool.*, : 122 pl. 49 fig. 4.  
 1833. *Agestrata chinensis* Gory and Percheron, *Monogr. Cet.*, : 305 pl. 59 fig. 2.  
 1910. *Agestrata orichalcea*, Arrow, *Fauna Brit. India* (Coleopt. Lamell.), 1 : 192-194

*Material examined* 21 exs.

*Diagnostic characters* Size large; shape elongate, narrow, parallel-sided and rather depressed. Colour bluish green purplish or black with the coxae, femora, meso-epimeral sides of sternum and abdomen orange red. Antennal club long. Scutellum extremely sharp. Elytra smooth and gently sinuated behind the shoulders. Apex of clypeus sharply biangulate and spinose. Length 36-46mm. Breadth 15-22mm.

*Distribution* The species is known from Burma, Malay-peninsula; Sumatra, Borneo, China, Srilanka, Bangladesh and India. In India the species was recorded from Tamil Nadu, Maharashtra and Andaman Island.

*Biology* The beetle appears to be common in Andaman Island species.

*Remarks* This is monotypic genus. Club of the antenna in *A. orichalcea* -male is larger than female, last abdominal segment is deeply emerginate in the middle.

## VII. *Thaumastopeus* Kraatz

### 12. *Thaumastopeus pullus* (Billberg)

1817. *Cetonia pulla* Billberg, *Schonh. Syn. Insect.* (1) 3 : 46  
 1898. *Thaemastopeus simillimus* Schoch, 1898, *Mitth. Schweiz. ent. Ges.*, 10 : 157  
 1910. *Thaumastopeus pullus*, Arrow, *Fauna Brit. India* (Coleopt. Lamell.), 1 : 195-196

*Material examined* 1 ex.

*Diagnostic characters* Moderate, flat, shape long and taper from shoulder to apex, pronotum strigose at the sides but unpunctured at the middle, metasternum and abdomen smooth in the middle but laterally smooth.

*Distribution* : The species is known from Malay Peninsula, Java, Burma, Srilanka and India. In India the species was recorded from west Bengal, Punjab, Assam, Sikkim, Bhutan and Andaman Island.



**Remarks :** Sexes are indistinguishable but hind tarsi of male a little longer and tibial spurs are sharper than female.

### 13. *Thaumastopeus nicobaricus* Janson

1877. *Thaumastopeus nicobaricus* Janson, *Cist. Ent.* 2 : 249

1910. *Thaumastopeus nicobaricus*, Arrow, *Fauna Brit. India* (Coleopt. Lamell.) 1 : 196

The species was described by Janson from Nicobar Island. Type should be in Janson collection. No material was available to us.

**Distribution :** Nicobar Island.

## VIII. *Dasyvalgus* Kolbe

### 14. *Dasyvalgus insularis* Arrow

1910. *Dasyvalgus insularis* Arrow, *Fauna Brit. India* (Coleopt. Lamell), 1 : 240-241

**Material examined** No material was available to us for study.

**Diagnostic characters** The species may be recognised by pygidium being convex in both sexes, absence of caudal appendages in female. Front tarsi tridentate, hind tarsi simple and slender, 1st segment much longer than the second, pygidium covered with prominent erect setae and feebly elevated terminal spiracles.

**Distribution :** The species is known only from Andaman Islands.

**Biology** Nothing is known about its biology.

**Remarks :** Of the genera of Valgini genus *Dasyvalgus* Kolbe is having the largest number of species in Indian region (17 spp.). Only one species *D. insularis* Arrow has so far been recorded from Andaman.

## IX. *Charitovalgus* Kolbe

### 15. *Charitovalgus andamanicus* Kolbe

1904. *Charitovalgus andamanicus* Kolbe, *Stellin ent. Zeit.* p. 22

1910. *Charitovalgus andamanicus*, Arrow, *Fauna Brit. India* (Coleopt. Lamell.), 1 : 248

**Material Examined** , 3 exs.

**Diagnostic characters :** Size small. Front tibiae short, scutellum small. Pygidium flat and as long as broad. Female with caudal appendage. Length 5-6 mm; Breadth 2.5.-3mm.

**Distribution** The species is known only from Andaman Island.

**Biology :** Nothing is known.

*Remarks* Three specimens present in collection of Zoological Survey of India were submerged in flood water and colouration has changed considerably one of these, a male, bears the specific name by Arrow's own hand writing. The other two females agrees well with the description.

## X. *Oryctes* Illiger

### 16. *Oryctes rhinoceros* (Linnaeus)

1758. *Scarabaeus rhinoceros* Linnaeus, *Syst. Nat.*, 1: 346

1910. *Oryctes rhinoceros*, Arrow, *Fauna Brit. India* (Coleopt. Lamell.), 1 : 278-281.

*Material examined* 15 exs.

*Diagnostic characters* · Large beetle, cylindrical in shape. Black or pitchy in colour. Head with an backwardly directed horn, larger in male. Length 39-47 mm; Breadth 18-22 mm.

*Distribution* : The species is widely distributed and has been recorded from Burma; Siam; Annam; Singapore; Pahang; Sumatra; Java; Celebes; Ceram; Ambyona Philippines Is., Formosa Korea; Hongkong; Srilanka and India. In India the species was known from Tamil Nadu, Maharashtra, West Bengal and Andaman Islands.

*Biology* · This is a serious pest of coconut and considerable literature exists on its biology. The species has developed a specific taste to the coconut tree. It attacks the tree from the top and works its way downwards, causing considerable damage to the tree. In fact, it is one of the greatest enemies of the coconut cultivation. The larvae also develop in decaying vegetable detritus.

*Remarks* : Beeson (1962) pointed out that up to 1885 the species did not reach the Andaman Island. This is the first time the species is being recorded from Andaman Island. As the Islands are famous for coconut there is an immediate need for the study of this pest in the island.

## XI. *Eophileurus* Arrow

### 17. *Eophileurus planatus* (Wiedmann)

1823. *Geotrupes planatus* Wiedmann, *Zool. Mag.*, 2 (1) : 5

1910. *Eophileurus planatus*, Arrow, *Fauna Brit. India* (Coleopt. Lamell.), 1 : 288-289

*Material examined* 2 exs.

*Diagnostic characters* : Large, long, narrow and parallel sided, rather depressed. Black and shining., Male with a short and simple cephalic horn, anterior part of pronotum depressed. Pygidium convex and shining; strongly but sparsely punctured. Female with a faint longitudinal pronotal furrow. Pygidium with feebly flattened near base with a little prominence before apex; rugosely punctured. Length 22-25 mm; Breadth 9.5-11 mm.

**Distribution** The species is known from Burma, Bangladesh and India. In India the species has been recorded from Uttar Pradesh; Sikkim; Nagaland; Manipur and Andaman and Nicobar Islands.

**Biology** : Specimens were collected during the month of March; nothing more is known.

**Remarks** : Specimens examined agree well with the description given by Arrow (1910).

## XII. *Clyster* Arrow

### 18. *Clyster retusus* Arrow

1908. *Clyster retusus*, Arrow, *Trans. Ent. Soc. Lond.*, p. 330

**Material examined** 2 exs.

**Diagnostic characters** Large, elongate and convex. Black or piceous. Male with short erect cephalic horn. Pronotum with prominent anterior declivity, dorsal margin of declivity sharp, some times little projecting. In female declivity smaller, upper margin with two tubercles.

**Distribution** The species is known from Burma, Penang and India. In India the species has been recorded from only Andaman Island.

**Biology** : Both specimens have been collected during the month of March.

**Remarks** : In one of the specimens, the declivity is not sharply defined into three parts and the central part is not recorded punctured.

## XIII. *Heteronychus* Burmeister

### 19. *Heteronychus lioderes* Redtenbacher

1867. *Heteronychus lioderes* Redtenbacher, *Reise der Novara, Zool.* 2 : 75

**Material examined** 2 exs.

**Diagnostic characters** Size medium, elongate oval and moderately convex. Upper surface black, reddish brown beneath. Male with front tarsus thick and dilated into a plate and feebly cleft.

**Distribution** : The species is known from Burma; Malay-Peninsula, Java; Celebes; Nepal; Bangladesh from West Bengal, Bihar, Orissa and Andaman Island.

**Biology** : This is reported to be a common species and attracted to light during Nov. and December (Arrow 1910). In Andaman it has been collected during the month of March and July.

**Remarks** : This is the first time the species is being recorded from Andaman.

## XIV *Alissonotum* Arrow

### 20. *Alissonotum elongatum* Arrow

1910. *Alissonotum elongatum* Arrow, *Fauna. Brit. India* (Coleopt. Lamell.), 1 : 299-300

*Material examined* 9 exs.

*Diagnostic characters* Size medium; elongate and convex. Black, smooth and shining. The inner claw of the front tarsus thickened and strongly bent.

*Distribution* The species was known from Bangladesh and India. In India the species was recorded from only Patkai mountains and Andaman Islands.

*Biology* Specimens were collected from the tunnels of the dead branches of the Cashewnut trees, and have been obtained from January-April.

*Remarks* First time, the species is being recorded from the Andaman Islands.

## XV *Parastasia* Westwood

### 21 *Parastasia andamanica* Ohaus

1898. *Parastasia andamanica* Ohaus, *Stettin Ent. Zeit.*, p 13

1917. *Parastasia andamanica*, Arrow, *Fauna Brit. India* (Coleopt. Lamell.), 2 : 40-41

*Material examined* 4 exs.

*Diagnostic characters* Size moderate; cylindrical and convex. Black or deep brown with a characteristic shoulder spots consisting of an oblique bar adjoining the scutellum and a curved lobe extending from the middle of the bar to near the outer margin. Clypeus strongly bidentate. Pronotum strongly punctured and not longitudinally impressed. Pygidium densely sculptured. Length 12-13 mm; Breadth 7.5-8mm.

*Distribution* The species is endemic to Andaman Islands.

*Biology* Specimens were collected during the period from March to May.

*Remarks* The specimens agree well to the description given by Arrow (1917).

### 22. *Parastasia confluens* Westwood

1841. *Parastasia confluens* Westwood, *Ann. Mag. nat. Hist.*, 8 : 304

1917. *Parastasia confluens*, Arrow, *Fauna Brit. India* (Coleopt. Lamell.), 2 : 41

*Material examined* : 1 ex.

*Diagnostic characters* Size moderate; cylindrical and convex. Light mahogany in male, deep brown in female with an irregular shaped lighter patch before the middle of each elytron. Clypeus strongly bidentate, pronotum strongly punctured and with a median longitudinal impressed line. Pygidium densely punctured.

*Distribution* The species is known from Malay Peninsula; Sumatra; Java; Borneo; Celebes; Timor; Burma; Philippine Island and India. In India the species was recorded only from Nicobar Islands.

*Biology* Larvas have been collected from a dead tree trunk in Andaman Island but nothing is known about its adult biology.

**Remarks** The species closely resembles *P. andamanica* but may be easily separated by the characteristic elytral pattern and pronotum being longitudinally impressed.

### 23. *Parastasia heterocera* Ohaus

1898. *Parastasia heterocera* Ohaus, 1898, *Stettin Ent. Zeit.*, p. 27

1917. *Parastasia heterocera*, Arrow, *Fauna Brit. India* (Coleopt. Lamell.), 2 : 41-42

**Material examined** Nil.

**Diagnostic characters** · Size small to medium, short and broad, slightly depressed. Black, elytra fully or partly bloodred clypeus labrum not visible from above. Posterior tibiae not spinose at their outer edges. Pygidium irregularly sculptured.

Male with clypeal teeth very strong and sharp, pronotum rugose at sides, hind angles sharp. Female with an additional clypeal tooth on each side.

**Distribution** : The species was known from Burma and India. In India the species was recorded only from Andaman and Nicobar Islands.

**Biology** : Nothing is known.

### 24. *Parastasia bimaculata* Guerin

1843. *Parastasia bimaculata* Guerin, *Delessert's Voyage*, 2 : 41 pl.11. fig. 2

1917. *Parastasia bimaculata*, Arrow, *Fauna Brit. India* (Coleopt. Lamell. ) 2 : 42-43

**Material examined** 8 exs.

**Diagnostic characters** : Size medium; short, subglobose and very convex. Reddish testaceous, elytra mottled with darker shades, a pair of black spots near the hind margin of pronotum. Clypeus strongly bidentate in front. Pygidium irregularly densely sculptured. Length 13-16 mm; Breadth 8-9 mm.

**Distribution** The species was known from Burma; Malay Peninsula; Sumatra; Borneo; Celebes; Gilolo; Ternate; Ceram; Newguinea; Solomon Is. and India. In India, the species was recorded from the Andaman and Nicobar Islands.

### 25. *Parastasia luteola* (Westwood)

1875. *Lutera luteola* Westwood, *Trans. Ent. Soc. Lond.*, p. 236

1917. *Parastasia luteola*, Arrow, *Fauna Brit. India* (Coleopt. Lamell.), 2 : 45-46.

**Material examined** : Nil.

**Diagnostic characters** Size medium; short and broad, moderately convex. Yellowish with black or brown markings. Clypeal margin bluntly bilobed and elytra punctured in straight lines.

**Distribution** The species was known from Malay peninsula; Siam; Borneo and India. In India the species was recorded from Nicobar Islands. Ohaus's record from the Himalay has been doubted by Arrow.

*Biology* Nothing is known.

## XVI. *Popillia* Serveille

### 26. *Popillia marginicollis* Hope

1831. *Popillia marginicollis* Hope, *Gray's Zool. Miscell.*, P. 23

*Material examined* · Size medium; short and broad not very convex above. Major part of the head, pronotum and scutellum green, rest reddish. Pronotum without hair, elytra with 5 equidistant dorsal striae, interval moderately convex. Meosternum produced, abdominal sternite with double rows of hairs. Length 11-13mm; Breadth 6-7mm.

*Distribution* The species was known from Nepal, Bangladesh and India. In India the species was recorded from Assam. This is the first time the species is being recorded from Andaman Islands.

*Biology* : Nothing is known.

*Remarks* As things stands now the species is very varriable and has been divided into several varieties. Specimens from Andaman are smaller in size. It may prove to belong to an undescribed species.

### 27. *Popillia andamanica* Kraatz

1892. *Popilli andamanica* Kraatz, 1892, *Deutsche Ent. Zeits.*, p. 279.

*Material examined* 3 exs.

*Diagnostic characters* : Size small; rhomboidal and depressed. Larger part of head and pronotum green, sides brownish, elytra dark with an antero-median pale patch enclosing a black spot. Length 8-9 mm; Breadth 5-5.5mm.

*Distribution* The species is known only from Andaman and Nicobar Islands.

*Biology* : Nothing is known.

*Remarks* The species is close to *P. marginicollis* Hope, but can be separated by having without prolongation of mesosternal process and colour pattern. Two specimens present in Z.S.I. collection are much smaller in size and having difference in colouration. These may belong to an undescribed species, however for time being refered here due to lack of more materials.

## XVII. *Anomala* Samouelle

### 28. *Anomala dorsalis* (Fabricious)

1775. *Melolontha dorsalis* Fabricious, *Syst. Ent.*, p. 35

1844. *Anomala dorsalis* Burmister *Handb Ent* 4 (1) · 232

*Material examined* 20 exs.

*Diagnostic characters* Size medium; moderately elongate-and convex. Colour variable, vertex black, usually reddish or testaceous with elytral suture black. Clypeus and fore head densely and pronotum minutely punctured. Metasternum feebly punctured ventral lobe with a row of hairs: Pygidium thinly and minutely punctured.

*Distribution* The species is known from almost throughout Indian mainland and Andaman Island.

*Biology* Nothing is known.

*Remarks* The species can be distinguished by its larger size, tridentate foretibiae and clypeus of male with a sharp front angle and elytra of the female angularly dilated.

### 29. *Anomala andamanica* Arrow

1917. *Anomala andamanica* Arrow, *Fauna Brit. India* (Coleopt. Lamell), 2 : 165

*Material examined* 9 exs.

*Diagnostic characters* Size moderate; elongated and parallel sided rather depressed. Testaceous, vertex, two spots on the middle of front margin of pronotum, a spot on humeral callus and extreme margin of the elytra black. Tarsi and extremities of tibiae deep brown. Clypeus small, sides round, head strongly and closely punctured. Pronotum with basal margin. Length 13-15 mm; Breadth 6.5-7.5mm.

*Distribution* The species is known from Andaman and Nicobar Islands.

*Biology* The species have been collected during the month of March-May.

*Remarks* The species is very close to *A. communis* Burm. But can be easily separated by the presence of black spot or spots on pronotum.

### 30. *Anomala decorata* Kirsch

1878. *Anomala decorata* Kirsch, 1878, *Mitth. Mus. Dresden*, 1 : 78

*Material examined* 1 ex.

*Diagnostic characters* Size medium; oval, rather depressed. Brownish, with pronotum a greenish tinge and longitudinal dark band along the elytral suture. Head strongly punctured rather rugosely. Clypeus broad with margin rounded. Pronotum strongly and closely punctured. Elytra with close set rows of large punctures.

*Distribution* The species was previously recorded from Burma and Malay peninsula. This is the first time the species is being recorded from south Andaman (Chidiatapu).

*Biology* The single specimen was collected during the month of May.

31 *Anomala shanica* Arrow

1917. *Anomala shanica* Arrow, *Fauna Brit. India* (Coleopt. Lamell.), 2 : 218-219

*Material examined* 30 exs.

*Diagnostic characters* Size moderate; oval, convex coppery, with dull green tinge. Head strongly rugosely puncture, clypeus short and regularly semicircular Pronotum closely and uniformly punctured.

*Distribution* The species was so far known from Burma. This is the first time the species is being recorded from Andaman Island.

*Biology* Specimens were attracted to light and collected in the month of April.

*Remarks:* The specimens under study agrees with the description but differ in being a little smaller in size and duller in colour.

32. *Anomala rhodomela* Arrow

1917. *Anomala rhodomela* Arrow, *Fauna Brit. India* (Coleopt. Lamell.), 2 : 235

*Material examined* 14 exs.

*Diagnostic characters:* Size large; oval and convex, smooth and shining above. Olivaceous green with a rosy red suffusion above. Clypeus rather broad, rugosely punctured. Pronotum finely in the middle and strongly punctured on lateral line. Pygidium granular. Length 23-28mm; Breadth 13.5-17 mm.

*Distribution* The species is known from Andaman Island.

*Biology.* The specimens have been collected during March and April.

*Remarks* The species can be identified by the large size and its typical colouration.

33. *Anomala desiccata* Arrow

1917. *Anomala desiccata* Arrow, *Fauna Brit. India* (Coleopt. Lamell.), 2 : 226-227

*Material examined* 7 exs.

*Diagnostic characters* Size large; shortly oval, convex. Olivaceous green not shining. Clypeus broad, straight in front, densely punctured, forehead a little less strongly punctured. Pronotum strongly punctured at sides, little less strongly at middle. Front angles of pronotum acute, hind angles distinct but obtuse. Pygidium strongly punctured; with pale erect setae and granular at apex.

*Distribution* The species is endemic to Nicobar Islands.

*Biology* Specimens have been collected during the month of May.

*Remarks* The species resembles *A. rhodomela* but may be easily separated by its smaller size, dull colour and absence of any rosy tinge.



### 34. *Anomala isolata* Arrow

1917. *Anomala isolata* Arrow, *Fauna Brit. India* (Coleopt. Lamell), 2 : 260

*Material examined* 1 ex.

*Diagnostic character* Size medium; broadly oval, convex and compact. Green, clypeus short, broad, rounded at the sides, rugosely punctured, forehead strongly but not rugosely punctured. Pronotum with front angle acute, hind angle obtus base not margined in the middle; strongly and evenly punctured. Mesosternum produced in front. Pygidium strongly punctured. Length 16 mm; Breadth 9 mm.

*Distribution* The species is known only from Andaman Island.

*Biology* Nothing is known.

*Remarks* The species may be easily recognised by its colour, size, shape and prosternal process.

### 35. *Anomala chloronota* Arrow

1911. *Anomala chloronota* Arrow, 1911, *Ann. Mag. nat. Hist.*, 8 (8) : 358

*Material examined* 4 exs.

*Diagnostic characters* Size moderate to large; oval and convex. Green turning to olivaceous upon the elytra; lateral margins of pronotum and lower surface pale, clypeus broad, nearly straight in the middle, densely punctured. Pronotum finely punctured in the middle and strongly at sides. Pygidium rugosely punctured and with scanty setae. Length 15-20 mm; Breadth 9-11.5 mm.

*Distribution* The species was known from Srilanka. This is the first time it is being recorded from Andaman Island.

*Biology* Specimens have been collected during the month of October.

## XVIII. *Adoretus* Castelnau

### 36. *Adoretus costopilosus* Ohaus

1914. *Adoretus costopilosus* Ohaus, 1914, *Deutsche Ent. Zeits.*, P. 506, fig. 42.

*Material examined* 12 exs.

*Diagnostic characters* Size medium; parallel sided, elongate and not convex. Dark brown, antennae and tibiae little pale. Clypeus semicircular, antennae 10 jointed. Elytra with prominent costae, moderately closely covered with decumbent white setae, outer edge of the front tibia serrated at its basal half, Length 10-11 mm; Breadth 4.5 mm.

*Distribution* . The species was known from India, Bangladesh and Burma. In India the species was recorded from Andaman Islands, Sikkim; Uttar Pradesh (Dehradun) and Punjab (Kangravally).

*Biology* The species has been collected from Andaman in the month of March from Uttar Pradesh in September-October and in July from Punjab.

*Remarks* The species shows geographic-variation both morphology and in aedeagus.

### 37. *Adoretus vulpeculus* Arrow

1917. *Adoretus vulpeculus* Arrow, 1917, *Fauna Birt. India*. (Coleopt. Lamell.), 2 : 327.

Arrow described the species from Andaman Island. No material was available to us for study.

*Distribution* The species is known only from Andaman Island.

### 38. *Adoretus versutus* Harold

1869. *Adoretus versutus* Harold, 1869, *Col. Heftu*, 5 : 124

*Material examined* 14 exs.

*Diagnostic characters* Size small to medium; moderately broad and convex; redish with forehead and clypeus dark. Clypeus semicircular in female, transverse in male, rugosely punctured. Pronotum strongly but unevenly punctured, less closely in the middle. Tibiae-armed with three teeth, not serrated above. Elytra strongly and closely punctured, with distinct but narrow costae. Pygidium moderately closely punctured and covered with hair.

*Distribution* The species was known from India, Srilanka, Malay peninsula; Java; Fiji Is. Samoa; Tongatabu; Mauritius; Saycheles; and St. Helena. In India the species was recorded from Uttar Pradesh (Ranikhet); Bihar (Pusa, Darbhanga); West Bengal (Sundarbans, Calcutta, Murshidabad); Madhya Pradesh (Jabalpur) ; Tamil Nadu (Coimbatore, Bellary, Seruguppa, Trichinepoli) and Andaman Islands.

*Biology*: The species occurs in large numbers. Like most of its congeners it feeds at night and bides during the day. It attacks a number of cultivated crops. Serious damages have been recorded for Roses, Cannas, Cacao Vines, Oats and Apple.

## XIX. *Catharsius* Hope

### 39. *Catharsius molossus* (Linnaeus)

1758. *Scarabaeus molossus* Linnaeus, 1758, *Syst. Net.*, 10 : 347

1801. *Copris ursus* Fabricius, *Syst. Eleuth.*, 1 : 43

1931. *Catharsius molossus*, Arrow, *Fauna Brit. India* (Coleopt. Lamell.) 3 : 94-95

*Material examined* 5 exs.

*Diagnostic characters* Size large; highly convex and broadly oval. Black sparingly covered with reddish hair beneath. Head with a small smooth area adjoining each eye, pronotum covered with granules, hind angles obtuse. Elytra entirely opaque. Metasternal shield fringed; mesometasternal line angular.

*Distribution* : The species has been recorded from India; Bangladesh and Srilanka. In India the species is known from Andaman Islands; Kerala; Karnataka; Maharastra; Uttar Pradesh; Himachal Pradesh and Meghalaya.

**Biology** : This is one of the commonest scarab species in India and found both in hills and plains. It is found both in dung of herbivorous animal and in human faces. This beetle prefers sandy or muddy soil and excavate almost vertical tunnel. It is found through out the year though in lesser numbers in winter months.

**Remarks** The species closely resemble *C. granulatus* Sharp and *C. sagax* (Quens) but may be separated from both by the presence of a smooth shining area adjoining each eye.

## XX. *Copris* Geoffroy

### 40. *Copris spinator* Harold.

1881. *Copris spinator* Harold, *Mitth. Munch. Ent. Ver.*, **5** : 89

1886. *Copris haroldi* Lansberge, *Tijds. Ent.*, **29** : 15

1931. *Copris spinator*, Arrow, *Fauna Brit. India* (Coleopt Lamell.), **3** : 113-114.

No material has been seen either in the Zoological Survey of India's old collection or in the material collected during the recent surveys. Arrow (1931) however, reported the species from Andaman.

The species may be distinguished by the following characters.

**Remarks** : Body broadly oval and very convex, black and shining, antennae, mouth organs with scanty hairs upon the legs and lower surface reddish. Head semicircular, clypeus smooth, front margin feebly notched in the middle. Elytra strongly striate, striae finely punctured length.

## XXI. *Onthophagus* Latreille

### 41 *Onthophagus cervus* (Fabricius).

1798. *Copris corvus* Fabricius, *Ent. Syst.*, P. 31

1877. *Onthophagus ceylonicus* Harold, 1877, *Ann. Mus. Civ. Geneva*, **10** : 61

1931. *Onthophagus cervus* Arrow, 1931. *Fauna Brit. India* (Coleopt. Lamell.), **3** : 348-350.

**Material examined** : 18 exs.

Size small (Length 6-7 mm; Breadth 3.5-4.5 mm) shape moderately convex and oval. Colour variable, usually black and on elytra decorated with orange. Antennae, mouth organs, femora and pygidium usually yellow. Pronotum unevenly covered with simple punctures. Upper surface covered with minute yellow setae. Pygidium pale with a basal ridge, *clypeus* not pointed.

**Distribution** The species is widely distributed in India; West Bengal, Uttar Pradesh, Madhya Pradesh, Maharashtra, Tamil Nadu, North Andaman Islands, Srilanka.

**Biology** This is one of the most abundant species in India. Coprinae are found in plain as well as in hills. Nothing is recorded about its food and feeding habit.

42. *Onthophagus nicobaricus* sp. nov.

Black, sides of clypsus, elytra, femora, tibiae and tarsi, specially those of middle and hind legs pale. Elongate oval and not very convex.

Clypeus rounded at sides, deeply emerginate in front lobes, reflexed, head strongly punctured, rugosely in front, clypeofrontal carina indistinct. Vertex with a feeble carina, sides of which tuberculate.

Pronotum uniformly strongly and rugosely punctured sides feebly rounded in front, strongly behind front angles blunt, base broadly rounded and margined.

Elytra feebly striate, striae punctured, elytral interval feebly convex, interval covered with setigerous asperate punctures. Pygidium margined at base uniformly and moderately strongly punctured.

Length 6 mm; Breadth 4 mm

Holotype female. Campbell Bay. 13.III. 1968, A. Danial Coll.

The species comes close to *Onthophagus metallicus* Arrow, but differs in having (1) Clypeofrontal carina indistinct, (2) Head without posterior projection, (3) Elytral interval with setigerous asperate punctures and (4) Pygidium uniformly and moderately strongly punctured.

XXII. *Paraphytus* Harold43. *Paraphytus andamanus* Arrow

Species was described by Arrow on the basis of a single specimen. No material has been collected during the present survey. Unique type is in the collection of British Museum.

## SUMMARY

The Present paper deals with 43 species belonging to 22 genera under 4 subfamilies. One species *Onthophagus nicobaricus* has been described as new to science and six species namely *Oryctes rhinoceros* (Linnaeus), *Heteronychus lioderes* Redtenbacher, *Alissonotum elongatum* Arrow, *Popillia marginicollis* Hope, *Anomala decorata* Kirsch, *Anomala shanica* Arrow have been recorded for the first time from Andaman Islands. Selected synonymies, distributional data and diagnostic characters of each species have also been provided.

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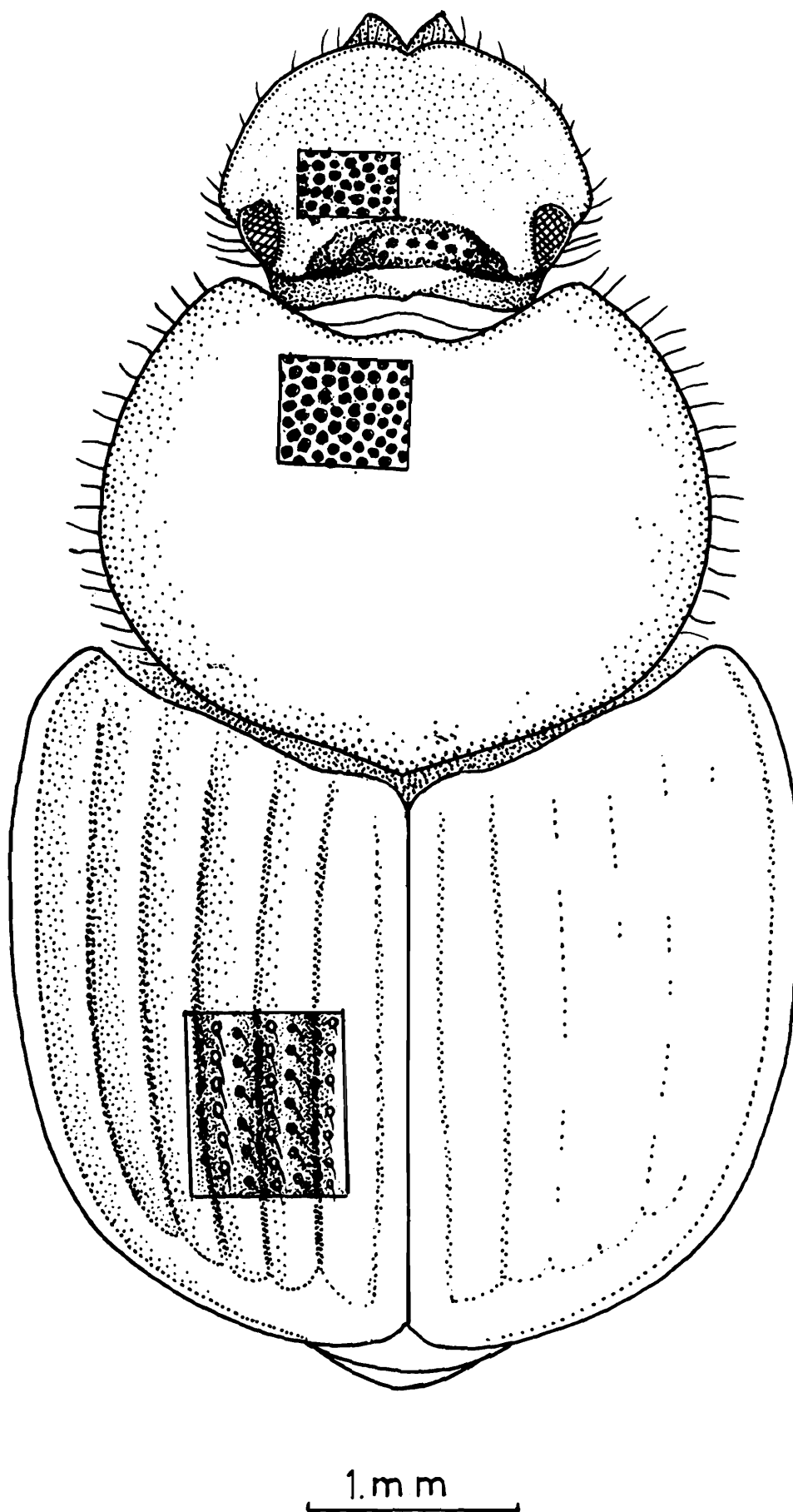


Fig. 1. Dorsal View of *Onthophagus nicobaricus* sp. nov.

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