THE CHRYSOMELIDAE, COLEOPTERA OF PAKISTAN

Part III.—A Key to the Genera and Species of the Galerucinae, with Descriptions of New Genera and Species

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Keys (with distinguishing characters) are provided for the genera and species of the Galerucinae of West Pakistan and East Pakistan. Information on their economic importance is also given. New taxa proposed from West Pakistan are: *Aulacophora naseemi* **sp. n.**, *Neoatysa* **gen. n.**, *N. shahidi* **sp. n.**, *Neoclitena* **gen. n.**, *N. simplex* **sp. n.**, and *Neosastra* **gen. n.**, *N. murreeiensis* **sp. n.** *Diorhabda lusca* Maulik, 1936 is a **new record** for West Pakistan.

Introduction

The Galerucinae constitutes the group Trichostomes of older authors, and are pests of economic importance in Pakistan. They are more common in East Pakistan than in West Pakistan. Some records of host plants are given in the following Table 1.

Key to the Genera and Species of the Galerucinae of West Pakistan (Maulik, 1936)

1. All claws simple; somewhat broad, depressed beetles; prothorax broader than long, sides rounded, front and hind margins almost straight, upper surface roughly sculptured
Leptosonyx Weise, 1885
black, shining, slightly convex; prothorax and elytra brownish-yellow, subnitid, each elytron with four shining costae
L. octocostatus Weise, 1912

All claws not of the same character or different in the sexes; prothorax always much broader than long, somewhat narrowed behind; sides rounded but with a fine margin; front margin widely concave; hind margin almost straight, tibia without an apical spine
Apophylia Duponchel & Chevrolat, 1842
insect black; elytra strongly bluish-green; second, third and fourth segments of antenna pitch-brown
A. nilakrishna Maulik, 1936

All claws bifid 2

All claws appendiculate.... 26

2. Elytra without a clothing of hairs 3

Elytra with a clothing of hairs 15

3. Elytra roughly punctate or variolose; elytra distinctly or indistinctly ribbed or flattened; antennae comparatively short
Galeruca Geoffroy & Fourcroy, 1762 4

Elytra smoothly punctate 5

4. Three costae along the middle of each elytron
G. sexcostata Jacoby, 1904

Four costae weak, not prominently raised along the middle of each elytron; other minor costae may be present; the colour contrast between the costae and the background absent; elytra not flattish *G. indica* Baly, 1878

5. Body ovate, narrowed in front, broadest in the middle, gradually and uniformly narrowed behind 7.5–17×4.5–10.5mm 6
Oides Weber, 1801

No such combination of characters 7

6. The sides of the elytra attain an extraordinary expansion beyond the epipleura (see underside) *O. maculata* (Olivier, 1807) Maulik, 1936

Elytra sides without such expansion; anterior lateral angles of pronotum acute; scutellum and suture piceous
O. scutellata (Hope, 1831) Maulik, 1936

7. Body robust, broadened behind, apical margin not broadened, 10–16.5×5–9 mm.; pronotum hardly punctate; elytra generally dark metallic bluish purple, antennae in male with extraordinarily swollen segments
Agetocera Hope, 1840

*Senior author's paper number 77 on the Coleoptera.

TABLE 1.—ECONOMIC IMPORTANCE OF THE GALERUCINAE.

Pest species	Host plants	Localities
1	2	3
Agelastica alni L.	*Alnus* sp. & *Corylus* sp.	Europe
Aulacophora excavata Baly	*Luffa aegyptiaca, L. acutangula* & other Cucurbitaceae	India & Pakistan
A. foveicollis Lucas	Curcurbitaceae	India & Pakistan
A. hilaris Boisduval	Pumpkins & marrows	Australia
A. olivieri Baly	Melons, cucumbers, pumpkins, squashes and cherries	Australia
A. stevensi Baly	Snake-gourd, bittergourd & bottle-gourd	India
Cerotoma trifurcata Forster	Bush & pole beans, cow peas, bush clover (*Lespedeza* spp.), hog peanuts (*Falcata comosa* L.), tickfoil or beggar weed (*Meiloinea* spp.), English horse beans (*Faba* sp-), soya beans; root-nodules of moth beans, kultri beans & *Phaseolus* sp.	America
Diabrotica balteata LeConte	Wheat, squash, melon, cabbage, bean, cotton, *Desmodium tortuosum, Sesbania aculeata, Cajanus indicus, Dolichos atropurpureus.*	America
D. duodecempunctata Fabricius	Spinach, kale, peas cucumber, melon, Cantaloupe, pumpkin, beat, mustard, turnip, peanut, corn, cane & coffee-bean	America
D. longicornis Say	Corn	America
D. picticornis Horn	Okra, beets, vetch, horse beans & cucumber	America
D. trivittata	Pumpkins, cucumbers, squashes, musk-melon	America
D. vittata	Pumpkins, squash-vines	America
Exora gracilicornis Weise	*Crotalaria grandibracteata*	West Africa
E. lusitanica Linnaeus	*Narcissus tazetta, N. poeticus* & Compositae	Europe
Galeruca laticollis Sahlberg	*Thalictrum flavum* and *T. aconitum*	Europe
G. lineola Fabricius	*Rumex* sp., *Salix* sp. & *Alnus* sp	Europe
G. pomonae Scopoli	*Centaurea jacea, Scabiosa succisa* & *Cirsium palustra*	Europe
G. tenaceti (Linnaeus)	*Sinapis arvensis, Achillea millefolium, Centaurea jacea, Cerastium arvense.*	Europe
Galerucella alni Fall.	*Alnus incana* Linn. and *Vaccinium pennsylvanicum* Lam.	America
G. biramanica Jacoby	Waternut *Trapa bispinosa* (singhara)	India, Pakistan
G. calmariensis Linn.	*Lythrum* sp.	Europe
G. cavicollis LeConte	*Prunus pennsylvanica*	America
G. cribrata LeConte	*Solidago nemoralis* Ait., & golden rod	America
G. decora Say	*Salix rostrata* Richards	America
G. kalmiae Fall	*Kalmia angustifolia* L. and *K. latifolia* L.	America
G. luteola Muller	*Ulmus* sp.	Europe
G. notata Fabricius	*Eupatorium perfoliatum*	America
G. notulata Say	*Ambrosia artemisiaefolia* L.	America
G. nymphaeae Linnaeus	Aquatic plants-*Nymphaea sagittaria, Brasenia* and *Polygonum* sp.	Europe
G. perplexa Fall	Brown willow	America
G. placida Baly	Larva on *Polygonum* sp.	India
G. rufosanguinea Say	*Rhododendron nudiflorum* L. and the purple azalea	America
G. sagittariae Gyllenhal	Rumex, *Lysimachia vulgarias* and *L. thyrsiflora*	Europe
G. spiraeae Fall	*Spiraea latifolia* Borkh, and meadow sweet	America
G. tenella Linnaeus	Strawberry, *Spiraea ulmaria*	Europe
G. vaccinii Fall	*Vaccinium pennsylvanicum* Lam., & low sweet blueberry	America
Lochmaea capreae Linnaeus	Sallows	Europe
L. crataegi Froster	*Crataegus* sp.	Europe
L. suturalis Thomson	Heather	Europe
Luperodes praeustus Motschulsky	Cucurbitaceae, Solanaceae	Japan
Luperus longicornis Fabricius	Sallows and birches	Europe
Monocesta coryli Say	Elm and *Corylus americanus*	America
Monoxia consputa LeConte	Larvae on leaves of *Chenopodium album, Atriplex* sp. & *Grindelia* sp.	America
M. puncticollis Say	Sugar beet, garden or table beet, mangel-wurzel, Swiss chard, spinach (*Spinacia obraca*) etc.	America
Neobrotica decimsignata Blake	*Anona* sp.	Costa Rica
N. dentata Blake	*Chamaedorea* sp.	Costa Rica
N. dimidiaticornis Jacoby	*Paponax* sp. and *Crescentia*	Venezuela
N. hepatica Bechyne	*Erythrina* sp.	Peru
N. noumenia Blake	*Eupatorium adenophorum*	Mexico
N. pluristicta Fall	*Chilopsis linearis*	Arizona
N. sexmaculata Jacoby	*Lantana* sp.	Mexico
Oides affinis Jacoby	Paddy (rice plant)	India & Ceylon
O. bipunctata Fabricius	*Vitis trifolia*	India
O. collaris Baly	*Manihot glaziovii*	West Africa
O. decempunctata Bilberg	Grapes, *Vitis tambrusca* L.	China
O. flava Olivier	Paddy	Bengal

(*Continued*)

TABLE 1 (*Continued*)

1	2	3
Periclitena vigorsi Hope	*Cordia myxa*	India
Platyxantha chinensis Maulik	Mulberry	China
Phyllobrotica limbata Fabricius	*Scutellaria lateriflora*	Quebec
P. quadrimaculata Linnaeus	*Scutellaria* sp.	Europe
Prosmidia magna Weise	Green berries of Coffee	West Pakistan
Pyrrhalta viburni Paykull	*Viburnum opulus* and *V. lantana*	Europe
Sermylassa halensis L.	*Galium mollugo* & *V. verum*	Europe
Trirhabda attenuata Say	*Solidago* sp. & *Artemisia* sp.	America
T. brevicollis LeConte	*Citrus aurantium*, orange, *Zanthoxylum* sp. & prickly ash	America
T. canadensis Kirby	*Solidago* sp., golden rod & *Artemisia* sp.	America
T. nitidicollis LeConte	*Gutierrezia sarothrae*, *Chrysothamnus* sp. & *Artemisia* sp.	America
T. tomentosa Linnaeus	*Baccharis halimifolia* L., groundselbush	America
T. virgata LeConte	*Salidago* sp.	America

antennae, head and prothorax concolorous; general colour yellow brown, with the elytra deep violet or purple *A. hopei* Baly, 1865

No such combination of characters 8

8. Body convex above, somewhat broadened behind, 10–14×5.5–8.5 mm.; antennae fine, long; elytra with alternate brown and dark bands
Merista Chapuis, 1875 9

No such combination of characters 11

9. Underside unicoloured; suture always stained with the metallic colour; apical brown area on each elytron without a dark spot
M. sexmaculata Kollar & Redtenbacher, 1848

Underside not unicoloured 10

10. Elytra with a marginal black band at base; each elytron without a dark spot on the apical area *M. trifasciata* (Hope, 1831) Maulik, 1936

Elytra without a marginal basal band; apical area of elytron with a dark spot; pronotum with a black patch (sometimes reduced into spots); antennae more flattened; elytral punctures well impressed, more crowded; length, 10–11.5mm.; breadth, 5.5-6.5 mm
M. quadrifasciata (Hope, 1831) Baly, 1879

11. Insects narrow, parallel-sided, never more than 9×3 mm., generally 7×3 mm.; pronotum quadrate, with sides margined
Hoplasoma Jacoby, 1884
each elytron with one postbasal and two postmedian spots, the latter sometimes coalescing
H. sexmaculata (Hope, 1831) Maulik, 1936

Insects not parallel-sided; broadened behind, never more than 11 mm. long usually 6–7 mm.; pronotum broader than long; epipleuron abbreviated
Aulacophora Chevrolat, 1842 12

12. Elytra completely yellow or yellow-brown 13

Elytra completely black, blue-black, or with a greenish tint 14

13. Scutellum black
A. almora Maulik, 1936

Scutellum not black, abdominal sternites black; upper surface of elytra generally shining; insect smaller in size length, 6.75 mm., breadth, 3.5mm., in the male humerus covered with erect hairs
A. foveicollis (Lucas, 1849) Baly, 1879

14. Third antennal segment almost as long as fourth segment; transverse sulcus of the pronotum curved; (Fig. 1)
A. naseemi **sp. n.**

Third antennal segment slightly longer than fourth segment; transverse sulcus of the pronotum straight *A. intermedia* Jacoby, 1892

15. Head, pronotum and elytra brilliant metallic green or a mixture of green, purple and violet 16

No such brilliant coloration 17

16. Body not constricted before the middle; 5–7×2–3mm., antenna extending to one-third distance beyond bases of elytra; (Figs. 3-4)
Neoclitena **gen. n.**
general colour black; upper surface more shining, ventral side with patches of brown here and there; smooth *N. simplex* **sp. n.**

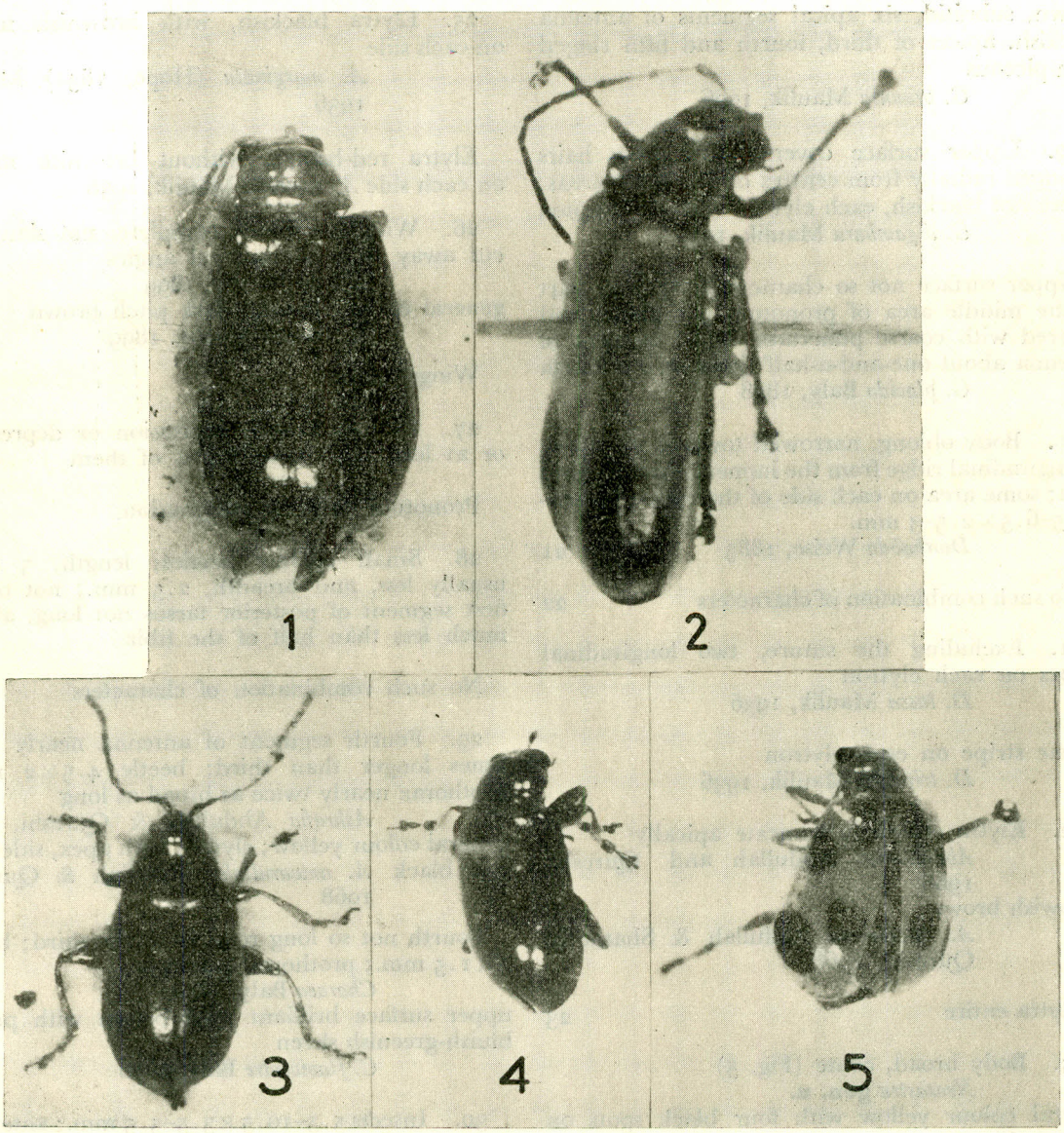

Fig. 1.—*Aulacophora naseemi* **sp. nov.,** paratype, dorsal view.
Fig. 2.—*Neoatysa shahidi* **Gen. et. sp. nov.,** holotype, dorso-lateral view.
Fig. 3.—*Neoclitena simplex* **Gen. et. sp. nov.,** holotype, dorsal view.
Fig. 4.—*Neoclitena simplex* **Gen. et. sp. nov.,** paratype, dorso-lateral view.
Fig. 5.—*Neosastra murreeiensis* **Gen. et. sp. nov.,** holotype, dorsal view.

Body constricted behind the shoulders; 8-13×5.7 mm.; antenna much shorter than the body *Periclitena* Weise, 1902

head and pronotum blue or bluish-green or with golden suffusion; on the blue-violet back-ground one large bright golden patch at the middle, and another large similar patch on the apical area *P. vigorsi* (Hope, 1831) Maulik, 1936

17. Smallish dull brown insects, generally 5×2.5 mm.; rarely 6.75×3.25 mm.; rarely 6.75×3.25 mm. 18

Insect larger, not of uniform dull brown colour 20

18. Elytral punctures deep, large and with intermediate smooth spaces; antennae comparatively more slender and longer *Galerucella* Crotch, 1873 19

Elytral punctures uniformly distributed, without intermediate smooth spaces; antennae thicker and shorter *Galerupipla* Maulik, 1936

brown, subnitid, six apical segments of antenna blackish, apices of third, fourth and fifth ringed with piceous
G. brunnea Maulik, 1936

19. Upper surface covered with silky hairs arranged radially from centres of depressed areas; suture not blackish, each elytron with interrupted ribs *G. digambara* Maulik, 1936

Upper surface not so characterized; front part of the middle area of pronotum not plane, and covered with coarse punctures; third segment of antenna about one-and-a-half times as the fourth
G. placida Baly, 1878

20. Body oblong, narrowed towards the apex; a longitudinal ridge from the humerus to the apical area; some area on each side of the suture flattened, 5–6.5×2.5–3 mm.
Diorhabda Weise, 1883 21

No such combination of characters 22

21. Excluding the suture, two longitudinal stripes on each elytron
D. lusca Maulik, 1936

One stripe on each elytron
D. trirakha Maulik, 1936

22. Elytra obliquely truncate apically
Abdullahius Abdullah and Qureshi, 1968
yellowish brown
A. shameemae Abdullah & Shameem Qureshi, 1968

Elytra entire 23

23. Body broad, ovate (Fig. 5)
Neosastra **gen. n.**
general colour yellow with four black spots on elytron (Fig. 5)
N. murreeiensis **sp. n.**

Body oblong, parallel-sided (Fig. 2) 24

24. Pronotum and elytra hairy; pronotum and scutellum punctate
Atysa Baly, 1864 25

Pronotum and elytra not hairy (latter only sparsely at apex); pronotum and scutellum impunctate *Neoatysa* **gen n.**

general colour yellowish brown with a black band on elytron (Fig. 2)
N. shahidi **sp. n.**

25. Elytra blackish, with brownish margin on each side
A. marginata (Hope, 1831) Maulik, 1936

Elytra red-brown, without brownish margin on each side *A. mureana* Maulik, 1936

26. Wingless; elytra complete, not slantingly cut away from the sutural angles
Khasia Jacoby, 1899
general colour shining, dark pitch brown
K. kraatzi Jacoby, 1899

Wings present 27

27. Pronotum with depression or depressions or at least with some traces of them 35

Pronotum without depression 28

28. Small narrow beetles; length, 5 mm., usually less, and breadth, 2.5 mm.; not ovate; first segment of posterior tarsus not long, always much less than half of the tibia 29

No such combination of characters 30

29. Fourth segment of antenna nearly three times longer than third; beetle 4.5×2 mm.; prothorax nearly twice as broad as long
Ashrafia Abdullah & Qureshi, 1968
general colour yellow; elytron with apex, sides and base black *A. anwarullahi* Abdullah & Qureshi, 1968

Fourth not so long relative to the third; beetle 3×1.5 mm.; prothorax quadrate
Charaea Baly, 1878
upper surface brilliant pitch-brown with purple bluish-greenish sheen
C. flaviventre Baly, 1878

30. Insects 5.5–10.5×3.5–5.5 mm.; antennae not very thin, extending a little beyond the humerus, second and third segments small, latter sometimes slightly longer than former; upper side with metallic coloration or other coloration with metallic sheen
Morphosphaera Baly, 1861
pronotum with four or five round spots; elytra and scutelleum shining blue, or as a variety pitch-brown with a metallic sheen; 7.0–9.0×5.5 mm.
M. japonica (Hornstedt., 1788) Maulik, 1936

No such combination of characters 31

31. Body oblong, narrowed towards the apex, 7×4 mm.; antenna slender, extending to middle

of elytron, second segment short, third longer than second; upper side shining blue-green abdominal sternites brown; viewed at certain angles faint longitudinal ridges, on elytron
Bijukta Maulik, 1936
antenna blackish, the insect is shining but not brilliant *B. flaviventre* (Baly, 1878) Maulik, 1936

No such combination of characters 32

32. Body slightly broadened behind; antenna long, with the third segment longer than second; pronotum strongly convex; elytra fairly strongly convex and distinctly punctate
Cneorane Baly, 1865
pronotum yellow-brown, lateral margins hardly explanate *C. varipes* Jacoby, 1896

No such combination of characters 33

33. Small ovate beetles, sometimes larger; generally differentiated as follows, although characters variable:-

First segment of posterior tarsus compared with the tibia not long
Dercetis Clark, 1865 34

First segment of posterior tarsus compared with the tibia very long, more than half
Monolepta Erichson, 1843
elytral stripe with the margins undulate 3.75 × 2mm.
M. nigrobilineata (Motschulsky, 1860) Maulik, 1936

34. Insect not more than 6 mm. long; head and pronotum always shining brown; elytra shining blue-black
D. puncticollis (Jacoby, 1889) Maulik, 1936

Insect more than 6 mm. long; head and pronotum shining reddish-brown; elytra shining metallic green
D. dimidiaticornis (Jacoby, 1891) Maulik, 1936

35. Body oblong, parallel-sided, slightly narrowing at the apex; pronotum impunctate, elytra finely punctate, punctures not very close together; antenna extending a short distance beyond the basal area of elytron, in male fifth and sixth segments are characteristically modified; 5.5 × 2 mm
Oedicerus Kollar & Redtenbacher, 1848
general colour bright brown; elytra very dark brown with a bluish-violet sheen
O. cyanipennis Kollar & Redtenbacher, 1848

No such combination of characters 36

36. Body oblong, broadened posteriorly; general colour usually shiny brown with black spots and patches on the elytra, antenna long and slender, extending nearly to the apical area of elytron; pronotum sparsely punctate, punctures extremely fine; elytra moderately closely punctate, punctures fine but well impressed; 4–7.75 × 2.5–4.75 mm.
Paridea Baly, 1886
insect smaller, 6.5 × 3.5 mm. or slightly smaller; spots on elytra larger
P. octomaculata (Baly, 1886) Maulik, 1936

No such combination of characters 37

37. Body oblong, moderately elongate, sometimes slightly broadened behind and then narrowed; general colour dull brown with black or metallic patches; head and prothorax shining, elytra subnitid, sometimes altogether shiny; antennae slender, extending to or beyond the apical area; prothorax much broader than long, surface uneven with depressions, impunctate, sometimes indistinctly punctate; elytra closely and rugosely punctate, sometimes with ribs, in shining species not rugose, very indistinctly and finely punctate
Mimastra Baly, 1865
elytron with a large variable dark apical patch with blue-green reflections 9.5 × 4.75 mm
M. cyanura (Hope, 1831) Duvivier, 1891

No such combination of characters 38

38. Body oblong, stout, somewhat convex, fairly broad and slightly narrowing towards the apex; general colour shining brown, with black spots and patches, sometimes with very brilliant metallic coloration; head broad enough to be enclosed in the emargination of the pronotum; antennae stout, generally extending to about one-third the length of elytron, but sometimes almost to the apical area; front margin of prothorax widely emarginate; each elytron with irregular double rows of punctures, punctures sometimes confused; 6–9.5 × 3.5–6 mm
Gallerucida Motschulsky, 1860 39

No such combination of characters 40

39. Bright metallic coloration; blue, blue-green, purple-blue, purple, green, pure blue, etc.
G. rutilans (Hope, 1831) Maulik, 1936

No such coloration; general colour dark brown with black spots and patches on the upper and

ventral surfaces
G. bicolor (Hope, 1831) Maulik, 1936

40. In male the front of the head extraordinarily excavated; body oblong, eyes strongly convex, sometimes so prominent that in some aspects the head seems broader than prothorax; shining or subnitid; antenna generally long, fine, extending to the apical area or a little beyond. 41

No such combination of characters; body broad, moderately large, ovate, widened behind the middle; general colour brown with metallic colours but not brilliant; pronotum very uneven, generally punctate, reflexed margin strongly wrinkled; 9–11.5×6–7 mm
Leptarthra Baly, 1861
general colour shining black; pronotum yellow-brown elytra dark red-brown with a purplish sheen *L. collaris* Baly, 1878

41. Pronotum much broader than long; outer apical angle of elytra broadly obtuse; 7 mm. long
Macrima Baly, 1878
general colour pale brown; the interantennal space excavated and full of hairs
M. armata Baly, 1878

Pronotum more quadrate; outer apical angle of elytra more rounded
Palpoxena Baly, 1861
general colour yellow-brown; breast and abdomen (except the apical segments) black; on each elytron three principal and three subsidiary shorter costae; punctation fine, almost imperceptible; 6 mm. long
P. costata (Allard, 1889) Maulik, 1936

One species of *Monolepta* Erichson, 1843, *M. erythrocephala* (Baly, 1878) Maulik, 1936 which keys out to couplet 27, second alternative has not been incorporated in the above key. This insect is black with the head red to reddish brown.

Key to the Genera and Species of the Galerucinae of East Pakistan
(Maulik, 1936)

1. All claws not of the same character or different in the sexes; prothorax always much broader than long, somewhat narrowed behind; sides rounded but with a fine margin; front margin widely concave; hind margin almost straight; tibia without an apical spine
Apophylia Duponchel & Chevrolat, 1842 2

All claws bifid 5

All claws appendiculate 47

2. Insects of large build, not less than 7×3 mm.; elytra with the greenish tint predominating; head pronotum, scutellum and underside black; legs brown
A. aeruginosa (Hope, 1831) Maulik, 1936

No such combination of characters 3

3. Elytra golden, sometimes with greenish tint; head black, pronotum reddish-brown, with median black patch; three apical segments of antenna much shorter than others
A. lebongana Maulik, 1936

No such combination of characters; insects of variable size and colour pattern, 4×2 mm. -7×3 mm 4

4. Head brown, with a black patch; pronotum brown, with a median black patch
A. sericea (Fabricius, 1798) Maulik, 1936

Head brown, with a black, patch; pronotum brown, with three black patches
A. crotchi (Jacoby, 1887) Maulik, 1936

Head black; pronotum brown; suture with a golden tint *A. metallica* Jacoby, 1904

5. Elytra without a clothing of hairs 6

Elytra with a clothing of hairs 42

6. Elytra roughly punctate or variolose 7

Elytra smoothly punctate 9

7. Elytral punctures coalescing to form large pits or shallow cavities; elytra without ribs; antennae comparatively short
Pseudadimonia Duvivier, 1891 8

Elytra distinctly or indistinctly ribbed or flattened; antennae comparatively short
Galeruca Geoffroy & Fourcroy, 1762
four costae weak, not prominently raised; other minor costae may be present; the colour-contrast between the costae and the background absent; elytra not flattish
G. indica Baly, 1878

8. Insect large, 7–14.5×4.5–7.5 mm.; elytra not flattened, variolose sculpturing coarser
P. variolosa (Hope, 1831) Duvivier, 1891

Insect smaller, 6–7×3.5 mm.; elytra flattened, variolose sculpturing less coarse
P. debria Maulik, 1936

9. Body ovate, narrowed in front, broadest in the middle, gradually and uniformly narrowed behind, 7.5–17×4.5–10.5 mm
Oides Weber, 1801 10

No such combination of characters 18

10. Elytra with black spots or patches 11

Elytra without black spots or patches, at most with an absolescent brownish spot on each elytron 14

11. Each elytron with one small or large patch varying from a small oval spot to a large patch covering almost the entire elytral surface; insect of large build, length 10 to 14.5 mm., not shining
O. bipunctata (Fabricius, 1781) Weber, 1801

Each elytron with more than one patch 12

12. Each elytron with two small round patches; pronotum without spots
O. bengalensis Maulik, 1936

Each elytron with more than two patches; pronotum with a pair of black spots 13

13. Elytral sides attain an extraordinary expansion beyond the epipleura (see underside); scutellum not black
O. coccinelloides Gahan, 1891

Elytral sides with no such expansion; scutellum black *O. maculosa* Gahan, 1891

14. Elytral sides attain an extraordinary expansion beyond the epipleura (see underside)
O. maculata (Olivier, 1807) Maulik, 1936

Elytral sides without such expansion 15

15. Elytral surface with a mixture of deeper and scattered punctures, and apparently finer and closer ones 16

Elytra uniformly punctate; with one kind of punctures (generally fine) 17

16. Viewed from above head black and pronotum without black spots
O. pectoralis (Clark, 1865) Jacoby, 1884

Viewed from above head not black and pronotum with two pairs of round spots
O. semipunctata Duvivier, 1884

17. Front margin of pronotum not deeply concave; insect narrowly oblong-ovate, length 7.5–10.5 mm.
O. flava (Olivier, 1807) Maulik, 1936

Front margin of pronotum deeply concave and anterior lateral angles acute; insect of broader and of larger build, always larger than *O. flava* (Olivier); scutellum and suture piceous
O. scutellata (Hope, 1831) Maulik, 1936

18. Body with the apex generally broader than the base, 14–16×7-10 mm.; sides of pronotum bisinuate, sometimes sharply, and its surface distinctly punctate
Doryxena Baly, 1861 19

No such combination of characters 20

19. Underside blackish
D. siva Maulik, 1936

Underside not blackish; scutellum black; crests of undulations of lateral margins of pronotum not strongly pronounced
D. geniculata Baly, 1879

20. Body robust, broadened behind, apical margin not broadened, 10–16.5×5–9 mm.; pronotum hardly punctate; elytra generally dark metallic bluish-purple, antennae in male with extraordinarily swollen segments
Agetocera Hope, 1840 21

No such combination of characters 25

21. Head and pronotum yellow, yellow-brown, dark brown or red; elytra black or violet 22

Head and pronotum black; elytra violet, green or blue 24

22. Antenna of male with eighth segment characteristically enlarged; elytra violet, sometimes mixed with blue 23

Antenna of male with ninth segment enlarged; elytra black; head and prothorax generally red, sometimes yellow
A. lobicornis Baly, 1865

23. Insect large; length 14–16 mm.; breadth 8–9 mm.; third segment of antenna of both sexes with a deep emargination on the inner side
A. mirabilis (Hope, 1831) Maulik, 1936

Insect smaller; third segment of antenna of both sexes not emarginate; antennae, head and

prothorax concolorours
A. hopei Baly, 1865

24. Elytra purple or deep violet
A. flaviventris Jacoby, 1879

Elytra pure blue
A. manipuria Maulik, 1932

25. Body convex above, somewhat broadened behind, 10–14×5.5–8.5 mm.; antennae fine, long; elytra with alternate brown and dark bands
Merista Chapuis, 1875 26

No such combination of characters 31

26. Elytra uniformly red-brown to lighter brown; head, pronotum, legs metallic green or blue *M. dohrni* (Baly, 1861) Maulik, 1936

No such combination of colours 27

27. Underside unicoloured 28

Underside not unicoloured 29

28. Suture always stained with the metallic colour; apical brown area on each elytron without a dark spot
M. sexmaculata Kollar & Redtenbacher, 1848

Suture not stained with the metallic colour; with an apical dark spot on each elytron; transverse metallic bands on elytra not broken up
M. fraternalis (Baly, 1879) Weise, 1922

29. Elytra with a marginal black band at base; each elytron without a dark spot on the apical area
M. trifasciata (Hope, 1831) Maulik, 1936

Elytra without a marginal basal band; apical area of elytron with a dark spot 30

30. Pronotum without a black patch, sometimes with two round spots; antennae less flattened; elytral punctures finer and sparser; length, 11.5–13.5 mm.; breadth, 7–8 mm.
M. fallax Harold, 1880

Pronotum with a black patch (sometimes reduced into two spots); antennae more flattened; elytral punctures well impressed, more crowded; length, 10–11.5mm.; breadth, 5.5–6.5 mm.
M. quadrifasciata (Hope, 1831) Baly, 1879

31. Insects narrow, parallel-sided; never more than 9×3 mm. generally 7×3 mm.; pronotum quadrate, with sides margined
Hoplasoma Jacoby, 1884 32

Insects not parallel-sided, broadened behind, never more than 11 mm. long, usually 6–7 mm.; pronotum broader than long 35

32. Each elytron with one postbasal and two postmedian spots, the latter sometimes coalescing
H. sexmaculata (Hope, 1831) Maulik, 1936

Elytra without spots or markings 33

33. Each elytron with a distinct lateral longitudinal costa; underside of abdomen black; apical sutural angle with a tooth
H. costatipennis Jacoby, 1896

Elytron without a costa 34

34. Four apical segments of antenna distinctly thickened, more so in the male
H. dilaticornis Jacoby, 1900

Four apical segments of antenna not thickened at all in either sex; male abdominal processes long, rounded; the sloping surface of the last visible sternite not depressed and with a median elevation not very prominent; in female the last visible sternite with a cavity near the apex
H. unicolor (Illiger, 1800) Maulik, 1936

35. Epipleuron abbreviated
Aulacophora Chevrolat, 1842 36

Epipleuron continued to the apex
Pseudocophora Jacoby, 1884 40

36. Elytra completely yellow or yellow-brown 37

Elytra completely black, blue-black, or with a greenish tint 38

Elytra with more than one colour, including those in which the yellow-brown elytra have black spots or bands or marginal and sutural stripes 39

37. Scutellum black
A. almora Maulik, 1936

Scutellum not black; abdominal sternite black (except only the tip in some cases); upper surface of elytra generally shining; insect smaller in size: length, 6.75 mm., breadth, 3.5 mm.; in the male humerus covered with erect hairs
A. foveicollis (Lucas, 1849) Baly, 1879

38. Insect large, not less than 7.5 mm. in length, generally 8–10 mm.; broad excavation on the pronotum, deeper in the male; elytra fine steel-blue, not shining
A. excavata Baly, 1886

Insect always smaller than 7.5 mm.; pronotum with the usual transverse depression; elytra shining black and not steel-blue; in the male the vertical area of head without structures
A. intermedia Jacoby, 1892

39. Colour of basal half of elytra brown and of apical half black, the basal brown area sometimes containing humeral and sutural black spots
A. bicolor (Weber, 1801) Baly, 1886

Elytra differently coloured; general colour shining red; insect large, length, 6.75–10.75 mm., breadth, 4 to a little more than 6 mm.; lateral margins of pronotum more explanate
A. rosea (Fabricius; 1801) Maulik, 1936

40. Elytra almost entirely black
P. bicolor Jacoby, 1887

Elytra entirely brown 41

41. In the male the postscutellar region not excavated, but with a shallow depression; in the female the last visible abdominal sternite deeply and narrowly emarginate
P. pectoralis Baly, 1888

In the male the postscutellar region deeply excavated; in the female the visible abdominal sternite not emarginate
P. flaveola Baly, 1888

42. Head, pronotum and elytra brilliant metallic green or a mixture of green, purple and violet; body constricted behind the shoulders, 8-13×5.7 mm; antenna much shorter than the body, last four segments smaller than those of the middle *Periclitena* Weise, 1902
head and pronotum blue or bluish-green or with golden suffusion; on the blue-violet black ground one large bright golden patch at the middle, and another similar large patch on the apical area
P. vigorsi (Hope, 1831) Maulik, 1936

No such brilliant coloration 43

43. Smallish dull brown insects, generally 5×2.5 mm., rarely 6.75×3.25 mm.; elytral punctures deep, large and with intermediate smooth spaces; antenna comparatively more slender and longer
Galerucella Crotch, 1873

front part of the middle area of pronotum not plane, and covered with coarse punctures; third segment of antenna about one-and-a-half times as long as the fourth
G. placida Baly, 1878

Insect larger, not of uniform dull brown colour 44

44. Pronotum with punctures differing from those of the elytra; elytra with the clothing of hairs always more than that of pronotum
Sastra Baly, 1865 45

Pronotum and elytra equally punctate with same kind of punctures and hairy to an equal extent *Galerotella* Maulik, 1936 46

45. Antenna (except the basal segment) and tibiae black *S. tibialis* (Jacoby, 1900) Maulik, 1936

Antenna and tibiae not so coloured; insect large, length, 11.25–12.5 mm.
S. indicus (Jacoby, 1894) Maulik, 1936

46. Insect with upper side apple-green
G. virida (Jacoby, 1887) Maulik, 1936

Insect with upper side not apple-green; antenna slightly shorter than the body, not thickened towards the apex
G. garoana Maulik, 1936

47. Wingless; antenna long, thin
Shaira Maulik, 1936
from head to near the apex of elytra a broad blackish stripe
S. maculata Maulik, 1936

Wings present 48a

48a. Prothorax elongated
Konbirella Duvivier, 1892
brilliant dark blue, elytra violaceous, labrum bronzy-black, palpi and antennae black, scutellum bronze *K. cardoni* Duvivier, 1892

Prothorax not elongated 48b

48b. Pronotum without depression 49

Pronotum with depression or depressions or at least with some trace of them 72

49. Small narrow-beetles; length, 5 mm., usually less, and breadth, 2.5 mm.; not ovate; first segment of posterior tarsus not long, always much less than half of the tibia 50

No such combination of characters 51

50. Fourth segment of antenna slightly longer than third segment; beetle 3.5–4×2–2.5 mm.; upper side dark bluish, underside piceous with the breast nearly black
Taphinellina Maulik, 1936
frontal tubercles broadish, not very strongly raised; antenna fine; sulcation on the inner side of humerus not deep; epipleuron broadly continued to the apex *T. bengalensis* (Jacoby, 1900) Maulik, 1936

Fourth segment of antenna equal to the third segment; antenna short, extending a little beyond the humerus
Eumelepta Jacoby, 1892
elytra either entirely brown or with the margins all round and the suture deep pitch-brown
E. clypeata Jacoby, 1900

51. Insect plump, broadened posteriorly, 7.5–11.5×5–7.5 mm.; antenna short, extending in female a little beyond the humerus, in male slightly longer
Miltina Chapuis, 1875
general colour shining brown, underside paler than upper *M. dilatata* Chapuis, 1875

No such combination of characters 52

52. Insects 5.5–10.5×3.5–5.5 mm.; antenna not very thin, extending a little beyond the humerus, second and third segments small, latter sometimes slightly longer than former; upper side with metallic coloration or other coloration with metallic sheen
Morphosphaera Baly, 1861 53

No such combination of characters 54

53. Pronotum with large diffused longitudinal median and two lateral patches; elytra and scutellum pitch-brown with a metallic sheen; 9.5–10.5×5.5 mm
M. montivaga Maulik, 1936

Pronotum with four or five round black spots; elytra brown with a metallic sheen, scutellum red-brown; 5.5–7.0×3.5–4.5 mm.
M. prava Maulik, 1936

54. Body slightly broadened behind; antenna long, with the third segment longer than second; pronotum strongly convex; elytra fairly strongly convex and distinctly punctate
Cneorane Baly, 1865 55

No such combination of characters 59

55. Elytra dull, not shining 56

Elytra not dull, shining 57

56. Elytra greenish-blue or blue-green
C. rubricollis (Hope, 1831) Maulik, 1936
Elytra greenish-bronze; hind legs only completely black or blackish
C. rugulipennis Baly, 1886

57. Insect narrow, not broader than 3.5 mm.; pronotum yellow-brown, lateral margins hardly explanate *C. varipes* Jacoby, 1896

Insect broader than 3.5 mm 58

58. Insect 8×4.5 mm.; elytra blue, all legs (except tarsi) brown, abdominal sternites and metasternum black, antennae and tarsi piceous
C. manipurana Maulik, 1936

Elytra purple-violet, often with opal reflections, legs yellow-brown (except tarsi which are blackish), antenna black except the three basal segments which are brown
C. braeti Duvivier, 1892

59. Small ovate beetles, sometimes larger; generally differentiated as follows, although characters variable:—

First segment of posterior tarsus compared with the tibia not long
Dercetis Clark, 1865 60

First segment of posterior tarsus compared with the tibia very long, more than half
Monolepta Erichson, 1843 65

60. Insect always smaller than 10×5.3 mm. 61

Insect between 10–11×5.3–5.5 mm.; each elytron without such a lateral ridge
D. indica (Duvivier, 1891) Maulik, 1936

61. Elytra unicoloured, completely shining red-brown, elytra with a purplish sheen; body ovoid, strongly convex, 7.25×5.5 mm.
D. subcaerulea (Jacoby, 1891) Maulik, 1936

Elytra not unicoloured 62

62. Posterior portion of elytral surface metallic blue-violet; basal portion brown; terminal segments of antenna not thickened
D. posticata (Baly, 1879) Maulik, 1936

Elytra with bands 63

63. Elytra with a single light band on a blackish background 64

Elytra with more than one band, median and apical bands very broad, alternate bands of black, red, black, pale brown, black and red
D. histrio (Baly, 1879) Maulik, 1936

64. Head always dark brown; general colour always uniform black or blackish; elytral band extending to suture and lateral margins, never tending to be reduced to a transverse ovate patch; 5–6.5 mm. × 3–4 mm.
D. flavocincta (Hope, 1831) Maulik, 1936

Head always pale brown; general colour varies from pale to red-brown the whole elytral pattern sometimes faint, elytral band with a tendency to reduction to a transversely ovate patch; body usually smaller 4.5–5 × 2.5–3 mm.
D. mandarensis (Jacoby, 1900) Maulik, 1936

65. Insect always less than 6 mm. in length 66

Insect always 6 mm. or over in length 71

66. Elytra completely unicoloured, not even the margins or suture with different colour; body ovate, convex; underside light brown, upper side darker brown; head black; apical segments of antennae smoky; 2.8–3 mm. long
M. conformis Weise, 1922

Elytra not unicoloured 67

67. Elytral colours present variation in shades, though distinctly marked yet without any well-defined limits between them; no contrast between pronotal and elytral basal colour; nearly half or more than half of the basal portion of elytra dark red, rest of the elytral area lighter with a tendency to form a longitudinally ovate patch, suture dark red; a little less than 6 × 2.5 mm.
M. eunicia Maulik, 1936

Elytra with longitudinal stripes; elytral stripe with the margins undulate; 3.75 × 2 mm.
M. nigrobilineata (Motschulsky, 1860) Maulik, 1936

Elytra with spots and patches 68

Elytra with transverse bands or with more complicated patterns 70

68. General colour brown; each elytron with two black patches, one basal and the other (which is large) apical; 5 × 2.7 mm.
M. khasiensis Weise, 1916

No such combination of characters 69

69. General colour brown; a short sutural stripe terminating before the middle, a nearly transversely ovate patch behind the middle on each elytron, a short lateral marginal stripe from the humerus; 2.5–3 × 1.5 mm.
M. cardoni Jacoby, 1900

No such combination of characters; eyes not surrounded by black, often with black spot on the vertical surface of head, suture black in its entire length; 3.25–5 × 1.75–3 mm.
M. scripta (Motschulsky, 1866) Maulik, 1936

70. Elytra with transverse bands; elytra with basal black, brown, black and apical brown bands, four in all; 3 × 2 mm.
M. birmanensis Jacoby, 1892

Elytra with more complicated patterns; the colour band of the basal margin of elytra covering the scutellum and a certain area beyond it, a postmedian band from the suture to the lateral margin, an apical band continuous with a narrow marginal stripe all round, and suture narrowly black or piceous; 3 × 2 mm.
M. trifasciata Jacoby, 1896

71. Insect large, 8–10.5 × 4.5–6 mm.; breast and abdominal sternites not black
M. nigripes (Olivier, 1808) Maulik, 1936

Insect 6.5 × 3 mm.; breast and abdominal sternites black
M. braeti (Duvivier, 1892) Maulik, 1936

72. Body strongly convex at about the middle, sloping down rather steeply behind and more gently in front; completely dark brown with faint but distinct violet sheen; 9 × 6 mm
Shamshera Maulik, 1936
completely dark brown; eyes black; elytra with a faint but distinct violet sheen
S. bennetti (Hope, 1831) Maulik, 1936

No such combination of characters 73

73. Body oblong, somewhat broadened behind; completely shining yellow-brown, breast

black; 7.25×4 mm.; in male eighth segment of antenna characteristically modified
Mimagitocera Maulik, 1936
colour entirely shining yellow-brown except the breast and eyes which are black
M. flava (Jacoby, 1904) Maulik, 1936

No such combination of characters 74

74. Body small, oblong, with strongly punctate elytra; shining dark blue, antenna blackish, abdominal sternites and legs pitch-brown much mixed with blue or violet; 5.5–6×2.5 mm.
Mandarella Duvivier, 1892
antenna blackish, with the two basal segments more shining and less hairy; abdominal sternites and legs pitch brown much mixed with violet and sometimes with green
M. nagpurensis Duvivier, 1892

No such combination of characters 75

75. Body oblong, slightly narrowed at the apex; prothorax constricted towards the base and with the surface impunctate, elytra with fine punctures having a tendency to arrange themselves in longitudinal rows; antennae extending to the apex of elytron; entirely metallic blue; antenna black with basal segment blue, 5.5×2.5 mm.
Agelopsis Jacoby, 1896
mouth-parts black with the apices of some parts deep brown; scutellum black
A. coeruleus Jacoby, 1896

No such combination of characters 76

76. Body oblong with apex rounded; coloration generally shining metallic blues or greens; antenna hardly extending to the middle of elytron, in male sixth, seventh or eighth segments modified; pronotum finely and sparsely punctate or sometimes impunctate, elytra fairly closely punctate, 4.5–7×2–3.5 mm.
Corophysa Chevrolat, 1843
general colour bright brown to piceous, elytra blue black mixed with purple; 5×2.5 mm.
C. mandarensis Jacoby, 1904

No such combination of characters 77

77. Body oblong, parallel-sided, narrow, slender; general colour shining brown; antenna slender, extending a short distance beyond the middle of elytron or sometimes to the apical area; pronotal surface impunctate, convex in front; lateral surface of each elytron often deeply concave, sometimes between two longitudinal ribs both arising from behind the humerus; in male sometimes a single abdominal process; 5.5-7×2-3 mm. *Hoplasomedia* Maulik, 1936
elytra red brown; 5.75×3 mm.
H. nirada Maulik, 1936

No such combination of characters 78

78. Body oblong, broadened posteriorly; general colour usually shiny brown with black spots and patches on the elytra; antenna long and slender, extending nearly to the apical area of elytron; pronotum sparsely punctate, punctures extremely fine; elytra moderately closely punctate, punctures fine but well impressed; 4-7.75×2.5-4.75 mm *Paridea* Baly, 1886 79

No such combination of characters 86

79. At least the head, pronotum and scutellum, and often basal margin of elytra including the humeral area black; elytra with four light patches on a black background; 4×2.5 mm.
P. quadriplagiata Jacoby, 1894

Head, pronotum and scutellum very often not black 80

80. Elytra entirely light brown to dark brown 81

Elytra with black spots or patches on a brown background 82

81. General colour shining brown; breast, middle and hind tibiae and tarsi in varying degree black; prothorax shining red; 5.75×3.5 mm.
P. ruficollis Jacoby, 1892

General colour dark brown with following parts black metasternum, abdomen (except the last segment), upper side of anterior tibia, tibia and tarsi of middle and posterior legs; 6.5×2.6 mm.
P. livida Duvivier, 1892

82. Each elytron with two spots, one basal and the other postmedian, four in all 83

Each elytron with four spots, two basal and two postmedian, eight in all 85

83. Antenna and legs entirely light coloured 84

Antenna and legs not entirely light coloured; 4.5–5 mm. long
P. approximata Duvivier, 1892

84. Spots on elytra smaller; insect smaller, 5-5.5×3 mm.
P. tetraspilota (Hope, 1831) Maulik, 1936

Spots on elytra very large; insect larger, 6.5×3.5 mm. *P. balyi* Jacoby, 1898

85. Insect smaller, 6.5×3.5 mm. or slightly smaller; spots on elytra larger
P. octomaculata (Baly, 1886) Maulik, 1936
Insect larger, 7.75×4.75 mm.; spots on elytra reduced and more rounded
P. perplexa Baly, 1879

86. Body slender, oblong, parallel-sided, narrowed towards the apex; general colour brown, elytra sometimes with metallic colouration, sometimes upper side entirely blue-green or bronzy with faint purplish sheen (when this is the case elytra without rugosity or ribs); antenna not robust, extending nearly to the apical area of elytron; elytra shagreened, coarsely punctate, rugose, punctures arranged in longitudinal rows, with ribs; 3-6.5×1.25-2.5 mm.
Cynorta Baly, 1865 87

No such combination of characters 88

87. Elytra ribbed and punctate-striate; on each elytron eight longitudinal ribs; upper side blue-green with bronzy sheen, underside blackish with metallic sheen, antennae and legs yellowish; head without hairs; 6.5×2.5 mm.
C. sarvesha Maulik, 1936

Elytra not ribbed and punctate-striate; colour pale reddish yellow-brown; in certain aspects with bluish reflections, each elytron with a long metallic dark blue patch; length about 6 mm.
C. apicalis (Wiedemann, 1823) Maulik, 1936

88. Body oblong or oblong ovate; shining metallic green or brown, legs piceous or yellow; antenna extending to three quaters of the length of the body, in male tenth and eleventh segments modified; pronotum finely punctate, some punctures fine and others stronger; elytra with the postscutellar area depressed, fairly closely and distinctly punctate; 5.5-9.5×2.5 mm.
Sikkimia Duvivier, 1891
upper side fawn-coloured; length 9.5 mm.
S. antennata Duvivier, 1891

No such combination of characters 89

89. Body oblong, moderately elongate, sometimes slightly broadened behind and then narrowed; general colour dull brown with black or metallic patches; head and prothorax-shining, elytra subnitid, sometimes altogether shiny; antennae slender, extending to or beyond the apical area; prothorax much broader than long, surface uneven with depressions, impunctate; elytra closely and rugosely punctate, sometimes with ribs, in shining species not rugose, very indistinctly and finely punctate; one example with hairs on elytra; 3-9×1.25-4.75 mm.
Mimastra Baly, 1865 90

No such combination of characters 93

90. Insect always more than 5 mm. in length 91

Insects always less than 5 mm. in length; shining black; each elytron with two brownish bands (median and preapical); elytra very minutely and indistinctly punctate; length of antenna 7.5 mm. *M. nitida* Maulik, 1936

91. Elytra with more than one colour 92

Elytra unicoloured; general colour very pale brown, sometimes whitish, fine stripe on upper side of each femur and tibia (sometimes completely); body slender, antennae and legs very long; head and prothorax shining, elytra subnitid; 7.5×3 mm. *M. gracilis* Baly, 1878

92. Each elytron with a large variable dark apical patch with blue-green reflections: 9.5×4.75 mm. *M. cyanura* (Hope, 1831) Duvivier, 1891

Each elytron piceous with metallic bluish sheen except the basal and lateral margins and suture which are brown; 8.5×4 mm.
M. limbata Baly, 1879

93. Body oblong, stout, somewhat convex, fairly broad and slightly narrowing towards the apex; general colour shining brown, with black spots and patches, sometimes with very brilliant metallic coloration; head broad enough to be enclosed in the emargination of the pronotum; antennae stout, generally extending to about one-third the length of elytron, but sometimes almost to the apical area; front margin of prothorax widely emarginate; each elytron with irregular double rows of punctures, punctures sometimes confused; 6-9.5×3.5×6 mm.
Gallerucida Motschulsky, 1860 94

No such combination of characters 98

94. Bright metallic coloration; blue, blue-green, purple-blue, purple, green, pure blue, etc. 8.5-9×4.5-5 mm.
G. rutilans (Hope, 1831) Maulik, 1936

No such coloration 95

95. Shoulders lighter than the background colour of the body; on the apical surface of each elytron a group of three round spots, sometimes the apical spot absent; 7–8.5×4·5×5·5 mm.
G. singularis Harold, 1880

No such characters 96

96. Insect completely reddish-brown; elytral punctures irregularly arranged in longitudinal series; 8 mm. long
G. indica Harold, 1880

Insect not completely of one colour; elytral punctures more regularly arranged in rows 97

97. Each side of prothorax with a distinct convexity in front of the middle; 8–8.5×4.5–5mm.
G. bicolor (Hope, 1831) Maulik, 1936

Each side of prothorax with no such convexity; insect large, 7–9.5×4.5–5 mm.; elytra almost black with a bluish tint
G. flavicollis (Clark, 1865) Maulik, 1936

98. In male the front of the head extraordinarily excavated; body oblong, eyes strongly convex, sometimes so prominent that in some aspects the head seems broader than prothorax; shining or subnitid; antenna generally long, fine, extending to the apical area or a little beyond 99

No such combination 101

99. Pronotum much broader than long; elytra with the apex truncate, so that the broadly obtuse outer apical angle of the elytron can be recognized when viewed at a certain angle; 7 mm. long
Macrima Baly, 1878
general colour pale brown; metasternum, external edge of the epipleuron extending to the base of elytron, scutellum, the sutural apical angles of the elytra and several basal sternites of the abdomen black *M. armata* Baly, 1878

Pronotum more quadrate; outer apical angle more rounded; body somewhat smaller, moderately long, gradually narrowed and rounded towards the apex; shining, sub-nitid or dull; pronotum narrowed towards the base but not much widened towards the apex, anterior corners thickened or swollen, surface never closely coarsely punctate; elytra never with distinct lines; 5–8.75×2–4.52 mm. *Palpoxena* Baly, 1861 100

100. Elytra unicoloured; completely pale brown to whitish yellow; 5–5.5×2–2.5 mm.
P. albicans (Jacoby, 1900) Maulik, 1936

Elytra with more than one colour; elytra rich bright brown with one-third of the apical area piceous with a bluish-purple sheen, seen at certain angles the brown, portion with a violet sheen; 6.5×3 mm.
P. konbirensis (Weise, 1924) Maulik, 1936

101. Body robust, broad, moderately shining; head together with the eyes much narrower than the prothorax; antenna extending to the apical area of elytron, fourth to tenth segments laterally flattened; pronotum with upper surface not convex, sparsely but distinctly punctuate; elytra broader than the prothorax, finely punctate, punctures tending to form longitudinal rows, a short row of strongly-impressed punctures on the inner side of humerus; 9.5–12×5.5–7 mm.
Hylaspes Baly, 1865 102

No such combination of characters 103

102. General colour light brown; antenna, except the three basal segments, tibiae and tarsi black *H. longicornis* Baly, 1865

Elytra brown, moderately shining, the rest of the body shining black except the fourth to eleventh segments of antenna which are dull pitch-black; in the males the sides of abdominal sternites red-brown *H. apurva* Maulik, 1936

103. Body broadened behind; antenna in male extending nearly to two thirds, in female to half the length of the body, fourth to tenth segments triangularly dilated; pronotum quadrate, smooth, convex; each elytron with three single rows (counting from the suture) moderately close together, after these double rows remotely placed; brilliant metallic coloration with golden reflections; 9×4.5 mm.
Hylaspoides Duvivier, 1892
head, prothorax, breast and femora of a beautiful metallic green colour with golden or purple reflections; abdomen red; scutellum and elytra coppery bronze with purple reflections; antennae, tibiae and tarsi black; first two segments of antenna shining with metallic reflections
H. magnifica Duvivier, 1892

No such combination of characters 104

104. Body large, broad, parallel; frontal tubercles widely separated from each other, root of antenna very close to eye-margin, a channel along front margin of eye for the reception of the basal portion of antenna, antenna very fine and slender; elytra moderately closely punctate; basal area on each side of scutellum convex; 9.5–10×5.5–6 mm. *Doryida* Baly, 1865

completely shining dark red-brown with black patches as follows: along the middle of pronotum an elongate patch; scutellum black; on each elytron across the base one on humerus and the other on the convexity, across postbasal area two patches corresponding in position to the basal ones, across preapical area two more in corresponding position *D. mouhoti* Baly, 1865

No such combination of characters 105

105. Body broad, moderately large, ovate, widened behind the middle; general colour brown with metallic colours but not brilliant; pronotum very uneven, generally punctate, reflexed margin strongly wrinkled; 9–11.5×6–7 mm.
Leptarthra Baly, 1861 106

Body large, with massive appearance; generally elytra shining blue or blue-green or green and other parts differently coloured; pronotum smooth punctate, reflexed margin not strongly wrinkled; 5.5–18×3–9 mm. usually 9–12 mm. long
Aplosonyx Duponchel & Chevrolat, 1842 107

106. Scutellum bronze; elytra brown, with no band *L. abdominalis* Baly, 1861

Scutellum black; each elytron with three violaceous bands
L. fasciata Jacoby, 1894

107. Colour of elytra blue, green or violet; pronotum with four raised areas in front of the median transverse line; 14.25–18×6.25–9 mm.
A. chalybaeus (Hope, 1831) Maulik, 1936

Colour of elytra different brown, not shining; antennae and legs black; 12×6.5 mm.
A. duvivieri Jacoby, 1900

Not incorporated in the above key are three species of *Monolepta* Erichson, 1843 which key out to couplet 48b second alternative. The species are *M. labiata* (Jacoby, 1900) Maulik, 1936; *M. erratica* (Jacoby, 1900) Maulik, 1936; and *M. limbata* (Olivier, 1808) Maulik, 1936.

Descriptions of new Genera and Species, etc.

I. Genus *Aulacophora* Chevrolat, 1842

(1) *Aulacophora foveicollis* (Lucas, 1849) Baly, 1879

There are 16 males and 17 females before us. One female from Punjab, Gujranwala (Ikram coll.), taken on September, 7, 1966 is at the the University of the Punjab, Lahore, and is probably a **new record.** Others from Karachi and Thatta in Sind are at the University of Karachi.

It should be mentioned that the ventral aspect of the male abdomen illustrated by Maulik (1936: fig. 53) is not quite accurate. The space between the central and lateral lobe on a side of the seventh sternite is widest at the base, gradually narrows in the middle and widens again at the apex or distally.

In this species as well as in the following species, the specimens have a few hairs on the apices and lateral margins of the elytra and thus make the working of the key given by Maulik (1936: 86) difficult. The hairs are visible on careful examination and have been overlooked by previous workers.

(2) *Aulacophora naseemi*, **new species**
(Fig. 1)

The specimens, two females and three males, described below key out to *A. intermedia* Jacoby, 1892 in Maulik (1936) but differ from this species in having the third antennal segment almost as long as fourth, transverse sulcus of the pronotum curved and elytra punctate. The specimens could be confused with *A. excavata* Baly, 1886 but the seventh abdominal sternites and tergites are differently shaped in both sexes here, apart from other differences.

Elytra shining, black; eyes black; the rest of the body brown to rufous.

Head broad; interocular impressed line not deep; clypeus and labrum with a few scattered long hairs. Antenna extending to about the middle of the elytron; first segment thickened at the apex, second segment smallest, third segment almost as long as fourth segment or only slightly longer, fifth to eleventh nearly equal to each other, last segment tapering at apex. *Prothorax* broader than long, broadening towards the front; anterior lateral angles rounded; sides sinuate; transverse sulcus curved; middle area free from punctures, lateral area punctate; as shining as the elytra.

Scutellum triangular with apex rounded or slightly truncate, impunctate. *Elytra* sparsely, uniformly punctate. *Underside:* in male, seventh sternite trilobed at apex; space between central and lateral lobes being widest at base and apex, getting narrowed in middle or sides of the central lobe rounded. In female, seventh sternite entire at apex.

Length, Female, 5.5–6.5 mm.; breadth, 3 mm.; male, length, 5–5.5 mm.; breadth, 2.5 mm.

Holotype, W. Pakistan, Punjab, Shorkot (Naseem), August 19, 1965, at the University of the Panjab, Lahore. *Paratypes*, 1, Shorkot (Naseem), August 18, 1965, at the University of the Panjab; 1, "8.5.30" at West Pakistan Agricultural University, Lyallpur; 2, no locality data, at the University of the Panjab.

The species has been named after the collector of the two female specimens.

II. *Neoatysa*, new genus

(Fig. 2)

The material described below keys out to couplet 21, near *Atysa* Baly, 1864 although does not fit in this genus or those treated subsequently by Maulik (1936). The material should have to be placed in a new genus even if one mistakes the tarsal claws to be appendiculate, near *Monolepta*, *Phyllectrus* and *Lyperus*, section IV E of Maulik (1936:424).

Body oblong, parallel-sided, widest behind near elytral apices. Underside more dull than upper side, without any metallic coloration.

Head exserted, slightly narrower than the prothorax; a median longitudinal line runs from middle of vertex to clypeolabral suture which divides clypeus into two convex portions; labrum with the apical margin nearly straight and densely hairy; maxillary palp with the apical (*i.e.* fourth) segment conical, nearly half as long as penultimate segment; labial palp with the apical (*i.e.* third) segment conical, slightly smaller than penultimate segment. Eyes strongly convex, prominent. Antenna slender; long, reaching almost to the apical one-third of elytra; covered by hairs, the basal segments sparsely, apical more thickly; first segment long, club-shaped, being narrower at base and widening towards apex, nearly twice as long as third; second and third very small, former nearly half of latter; fourth longest, as long as preceding two segments combined; fifth longer than sixth, remaining segments nearly equal in length; eleventh tapering at apex, only slightly longer than tenth.

Pronotum broader than long, with the anterior and posterior margins rounded, former more so; sides straight, except near apex where they are rounded; upper surface uneven, with a transverse median depression which is more prominent near sides, not hairy, impunctate; each corner with a seta-bearing pore.

Scutellum triangular, smooth, impunctate.

Elytra much broader at base than the pronotum; humerus strongly raised; each lateral border narrowly margined; upper surface coarsely irregularly punctate, not hairy except near apex and borders.

Underside sparsely covered with fine hairs; epipleuron widest at base, markedly narrowed one-fourth distance from base, continuing as a very narrow strip up to near apex; legs long, slender; tibial spurs not prominent; claws bifid.

Type of the genus. Neoatysa shahidi **sp. n.**

(3) *Neoatysa shahidi*, new species

(Fig. 2)

General colour yellowish brown, mixed with dark as follows.

Head.—Vertex at base, a median line and two lateral spots—black; eyes with small patches—black; mandible at apex—black; antennal segments five to eleven—fuscous.

Thorax.—Pronotum with a small, median spot near base, and two elongated spots near each side—black; elytron with a longitudinal band from near middle to apex—black; metathorax with sternum, episternum and epimeron—black; legs with tibiae and tarsi mostly—fuscous or black.

Abdomen.—Sternites three to six—black, except narrow margin of at apex in each—dark brown.

Length.—10.5 mm., breadth, 4 mm.

Holotype.—No locality data (W. Pakistan, probably Karachi), at the University of Karachi.

It is a pleasure to name this species in honour of Dr. S. Sahid Husain of these laboratories.

III. *Neoclitena*, **new genus**

(Figs. 3 and 4)

The claws appear to be appendiculate in certain angles and one may confuse the material described below with section IV E of Maulik (1936) and the genus *Monolepta* Erichson, 1843 but the given generic characters (*op. cit.* 374–376) are quite different. The tarsal claws are bifid and the presence of a few scattered hairs on the apices and lateral margins of the elytra (more clear in certain specimens than in others) and other characters mentioned in our key (*vide supra*) clearly suggest that a new genus has to be erected.

Body oblong, not constricted before the middle, narrowed and rounded at both ends, broader behind than towards apex.

Head slightly longer than wide, together with the eyes narrower than the front of the prothorax; interocular space uneven, rugose, with elevations and depressions; interantennal space with a deep channel meeting the median longitudinal ridge of the clypeus; labrum and clypeus with a few longish hairs, rest of the dorsal surface smooth; apical segment of the maxillary palp conical, shorter than penultimate segment; apical segment of the labial palp conical, shorter than penultimate segment. Eyes convex, protuberant, slightly obliquely placed. Antenna extending to one-third distance beyond bases of elytra; first segment long and club-shaped; second shortest; third and fourth nearly equal, fourth slightly longer; tenth shorter than preceding or succeeding segments; eleventh long, tapering at both ends. *Pronotum* nearly twice as broad as long, front margin very widely emarginate; somewhat drawn forward at the anterior lateral angles; sides scalloped; lateral margins slightly reflexed; each of the four corners bearing a fine seta; posterior lateral angles obtusely rounded; upper surface slightly uneven with a transverse depression near base, and sparsely, finely punctate. *Scutellum* triangular, with the apex rounded. *Elytra* broader at the base than the pronotum; convex; humerus prominent; upper surface confusedly punctate, the punctures being close together; not hairy, except along lateral margins and apices of elytra; lateral margins very slightly explanate and reflexed. *Underside:* epileuron broad at the base, narrowed towards and continued up to near apex; legs fairly long, tibiae markedly narrowed at the base and broadened towards the apex, channelled on outer side, their apices without prominent spine; hind femur not channelled on the underside; claws large, bifid, inner lobe short.

Type of the genus: Neoclitena simplex **sp. n.**

(4) *Neoclitena simplex*, **new species**

(Figs. 3 and 4)

General colour black; upper surface more shining, ventral side with patches of brown here and there; smooth. Apices of seventh sternite and tergite entire; in one specimen, the seventh sternite has a slight apical prolongation not distinct in others. There may be other differences correlated with this but we have not found them yet. Therefore, we are not describing this specimen in a second species for the present.

Length.—5–7 mm.; *breadth*, 2–3 mm.

Holotype.—No locality data given (W. Pakistan, probably Karachi) and *Paratypes*, 5, without locality data—all at the University of Karachi.

IV. *Neosastra*, **new genus**

(Fig. 5)

On account of the bifid tarsal claws and the hairs at apex and around lateral border of the elytron, and other characters, the material described below keys but to *Sastra* Baly, 1865 in Maulik (1936). The differences have already been noted in our key but perhaps the most important one is the shape of the pronotum (*cf.* fig. 77, *op. cit.*) which is said to be constant in the species included in *Sastra* which otherwise do not show a great uniformity of structure.

Body broad, ovate, narrowed at apex, broadest near base; elytra not completely covering the pygidium.

Head much longer than wide, together with the eyes a little narrower than prothorax; area between vertex and frons separated by a transverse suture; frons with a median, longitudinal ridge between antennae; clypeus not raised above; labrum long; maxillary palp long enough to be seen from the upper side, apical segment conical, narrow, as long as penultimate segment. Eyes convex, protuberant, slightly longer than wide. Antennae missing. *Pronotum* less than twice wider than long; anterior margin concave or emarginate, posterior margin broadly rounded, sides straight in basal half and rounded in apical half, margined; upper surface with a median transverse depression, prominent near sides, not hairy, impunctate; each corner with a seta-bearing pore. *Scutellum* triangular, smooth, impunctate; apex rather truncate.

Elytra broader at base than the pronotum; humerus prominent; each lateral border narrowly margined; coarsely, sparsely punctate; only sparsely hairy at apex and lateral margins, elsewhere not hairy. *Underside* only sparsely hairy; legs fairly long and slender, tibiae not ridged dorsally; the first segment of the posterior tarsus longer than the corresponding segment of either the front or middle tarsus; bilobed segment deeply cleft; tibial spurs not prominent; claws bifid; epipleuron widest at base, narrowed one-fourth distance from base, continued as a very narrow strip up to near apex.

Type of the genus. Neosastra murreeiensis **sp. n.**

(5) *Neosastra murreeiensis*, **new species**

(Fig. 5)

General colour yellow or rufous with dark as follows.

Head.—Eyes-black; labrum at apex-dark brown; mandible at apex—fuscous.

Thorax.—Elytron with four spots—black; mesepimera—fuscous; metathorax with sternum, epimera and episternum—black; hind coxa along outer—fuscous; tarsal claws-dark brown.

Abdomen.—Sternites three to six each with one spot on each side near base—black to fuscous; sternites three, four and five with a median spot on apices of first two and base of the third—black to fuscous; pygidium with a spot on each side—black.

Length.—6 mm.; *breadth*, 3.5 mm.

Holotype.—W. Pakistan, Murree (A. Rahman), June, 1929, at the West Pakistan Agricultural University, Lyallpur.

V. Genus *Diorhabda* Weise, 1883

Only one species, represented by two specimens from the Karachi University collection is available.

(6) *Diorhabda lusca* Maulik, 1936

This is a **new record** for W. Pakistan. The specimens have no information on their localities or host plant. If, they are from Karachi, which we are by no means certain, then the species has a wide range of distribution and would be expected to be found all over the southern portions of West Pakistan.

References

1. M. Abdullah and A. Abdullah, *Phyllobrotica decorata duportei, a new subspecies of the Galerucinae (Coleoptera: Chrysomelidae) with a review of the species of Phyllobrotica in the Lyman Museum collection.* Entomologists mon. Mag., **104,** 4(1968).
2. M. Abdullah, and S.S. Qureshi, Pakistan J. Sci. Ind. Res., **11,** 423(1968).
3. M. Abdullah and S.S. Qureshi, Pakistan J. Sci. Ind. Res., **11,** 425(1968).
4. D.H. Blake, *A review of the beetles of the genus Neobrotica and some closely related genera,* Proc. US Nat. Museum, **118,** 267 (No. 3529), (1966).
5. S. Maulik, *The fauna of British India, including Ceylon and Burma. Coleoptera, Chrysomelidae (Galerucinae)* xiv+648 pp., pl. I, (Taylor & Francis Ltd., London, 1936).
6. Y.C. Siew, *Some Physiological aspects of adult reproductive diapause in Galeruca tanaceti* (L.) *Coleoptera: Chrysomelidae* Trans. R. ent. Soc. London, **118**(11), 359, (1966).