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On the Genera of Oriental Cossoninae (Coleoptera : Curculionidae)

By

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Summary : The present paper deals with genera of Cossoninae from the oriental region including Pacific islands. This subfamily is classified into three tribes. Cotasterosomini is newly synonymized with Himatinini. Key to three tribes and one hundred and twenty-two genera is given. *Microtribodes formosanus* gen. et sp. nov. and *Conisius yaeyamanus* gen. et sp. nov. are described. *Macrohimatium* KONISHI and *Isotrogus* WOLLASTON are newly synonymized with *Himatinum* COCKERELL and *Cossonus* CLAIRVILLE, respectively. Type-species of seventy-three genera are illustrated.

Since the publication of WOLLASTON's "On the genera of the Cossonidae", no monograph including all the described genera of the oriental region has appeared. WOLLASTON's work is still a fundamental treatise and remarkable for its excellent descriptions at that time, but it did not include any illustrations and it lacked keys. After the time of WOLLASTON, partial revisions of the oriental genera were published by MARSHALL (1931～58), VOSS (1940～64) and others, and faunas of New Zealand, Samoa and Guam were monographed by BROUN (1909), MARSHALL (1931) and ZIMMERMAN (1941), respectively. KONISHI began the revision of Japanese species with papers published in *Insecta Matsumurana*, but has suspended his taxonomic work since 1962.

The present study was carried out at the British Museum (Natural History) in 1968 based on the excellent collections including many types described mostly by BROUN, CHAMPION, MARSHALL, PASCOE, WOLLASTON and ZIMMERMAN, and concerns primarily the genera of the oriental region including New Guinea, but many genera from Pacific islands are included where this is expedient for taxonomists.

The author wishes to offer his sincere thanks to Mr. R. T. THOMPSON, of the British Museum (Natural History) for his help in various ways. He offers also his special thanks to Dr. K. ITO and Mr. K. ODA, of Government Forest Experiment Station, for their kindness in the course of the present study.

The following genera from the named region are not included in the key given here.

Atopoxydema VOSS
Attarus BROUN
Agytonischius VOSS
Deinocossonus PERKINS
Dendroctonomorphus WOLLASTON
Dexipeus PASCOE
Dolichotelus BLACKBURN
Ellaticus PASCOE
Eutornus WOLLASTON
Gaurocryphus BROUN
Lixomimus VOSS
Macrocordylus FAUST

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Macropentarthrum Voss
Orothreptes Perkins
Pentarhyncholus Voss
Pseudolus Sharp
Psilotrogus Pascoe
Rhypax Pascoe
Stereotribodes Voss
Stilboderma Broun
Touropsis Broun

Some taxonomic notes on Cossoninae

As opposed to such theory on Cossoninae by Crowson (1954) as "possibly the subfamilies Cossoninae, Scolytinae, Ipinae and Platypodinae could constitute a special subsection of the Phanerognatha", the author (1962) claimed that Scolytidae and Platypodidae are valid families and fundamentally different from Curculionidae (including Cossoninae) on the structures of mouth organ, tentorium and aedeagus. Crowson (1967) insisted on his opinion that Scolytidae, Platypodidae and Curculionidae are of the same family and *Xenocnema* is completely bridged among them. After a careful examination of *Xenocnema*, the author came to the conclusion that this is apparently a genus of Cossoninae and does not bridge to Scolytidae, judging from the position of postcoila of mandibles (see family characters, Morimoto, 1962), and has a characteristic inner setose fringe on the front tibiae (important character of Cossoninae) (Fig. 1).

Dryophthorini has often been regarded as a tribe of Cossoninae, but the author (1962) transferred it to Rhynchophoridae on the morphological characters of mouth organ, male genitalia, etc.

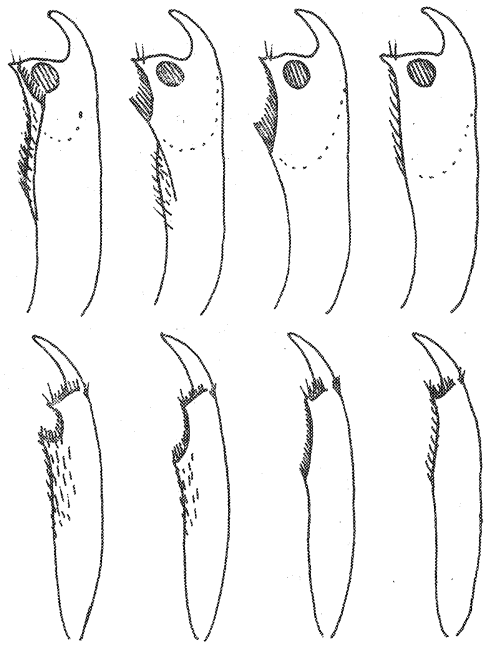

Fig. 1　Front tibiae of Cossoninae in dorsal and lateral aspects showing the inner setose fringe and angulation on the lower margin.

For the tribe Aphelini, *Isonycholips* Chûjô et Voss (1960) described from Japan is synonymous with *Aphela* Pascoe (1865) from southern Australia and Tasmania (***syn. nov.***) and close to *Emphyastes* Mannerheim from the Pacific coast of North America. Weevils of these genera have characteristic front tibiae of which the outer angles are protruding into long processes, but these processes are not homologus with unci. From this point, tribe Aphelini should be transferred from Cossoninae.

Konishi (1962) classified Japanese Cossoninae into five tribes, Cotasterosomini, Cotasterini, Stereocorynini, Himatinini and Cossonini. *Cotasterosoma* Konishi is prima fascie similar to *Allaorus* Broun except the position of constriction on head. Reduction of the hind wings in Coleoptera is often correlated with the terrestrial habit and such species often have the elytra with round or reduced humeri and vestigial scutellum. Weevils of Cossoninae can not be exceptional on this

point. Cotasterosomini and Cotasterini are apparently apterous tribes and KONISHI's key characters could not afford them as tribes.

In this paper the author classified the oriental genera into three tribes.

Tribe Himatinini KONISHI (1962)

=Cotasterosominini KONISHI (1962), syn. nov.

Tribe Rhyncolini, sensu MARSHALL (1937)

Tribe Cossonini, sensu lato.

including Cotasterini and Pentarthrini.

Description of new genera

***Microtribodes* gen. nov.**

Type-species : ***Microtribodes formosanus* sp. nov.**

Frons between eyes a little narrower than the base of rostrum, post-ocular constriction obsolete, rostrum nearly parallelsided, curved, scrobes convergent behind, underside of rostrum with a median keel on the basal half ; antennal funicle not exceeding eye, 5-segmented, segment 1 and 2 longer than broad, 3~5 transverse, widening distally. Prothorax longer than broad, truncate at the base. Scutellum small, flat. Elytra oblong with reduced humeri, punctate-striate, ultimate stria weaker behind hind coxa. Sternum with front coxae very narrowly separated, mesosternum on the same level with metasternum, mesosternal process narrower than coxa, metasternum nearly as long as ventrite 1 in the median line, suture between ventrite 1 and 2 obsolescent at the middle. Femora clavate, tibiae uncinate and not mucronate, tarsi with bilobate segment 3.

This new genus is closest to *Microtribus* WOLLASTON and *Mesoxenophasis* WOLLASTON, but separable from the former by the presence of scutellum, and from the latter by the characters noted in the key.

***Microtribodes formosanus* sp. nov.** (Fig. 2)

Blackish brown, legs and anterior margin of pronotum dark reddish brown, tarsi and antennae reddish brown, bare, glossy.

Frons shagreened and finely punctured ; eyes oval, slightly convex, coarsely facetted. Rostrum longer than broad (15 : 7), similarly punctured and shagreened as frons behind the antennal insertions, and sparsely provided with fine punctures thenceforth, neither striate nor carinate. Antennae inserted just before the middle of rostrum, funicle a little shorter than scape, segment 1 robust, a little longer than broad and 1.5 times as long as 2.

Prothorax 5/4 times as long as broad, broadest at the middle, nearly as wide at the apex as the base, gently rounded laterally, subapical constriction well marked on the sides and feeble on the disk, closely punctured on the disk, finely shagreened on the sides, impunctate along the anterior margin.

Scutellum small, bare, not punctured.

Elytra oblong-oval, broadly rounded behind ; striae containing deep punctures, which tend to become weaker behind, intervals narrower than striae, convex, inpunctate.

Underside excepting ventrites 3~5 strongly punctured, their interspaces narrower than punctures ; ventrite 3~5 sparsely provided with fine punctures.

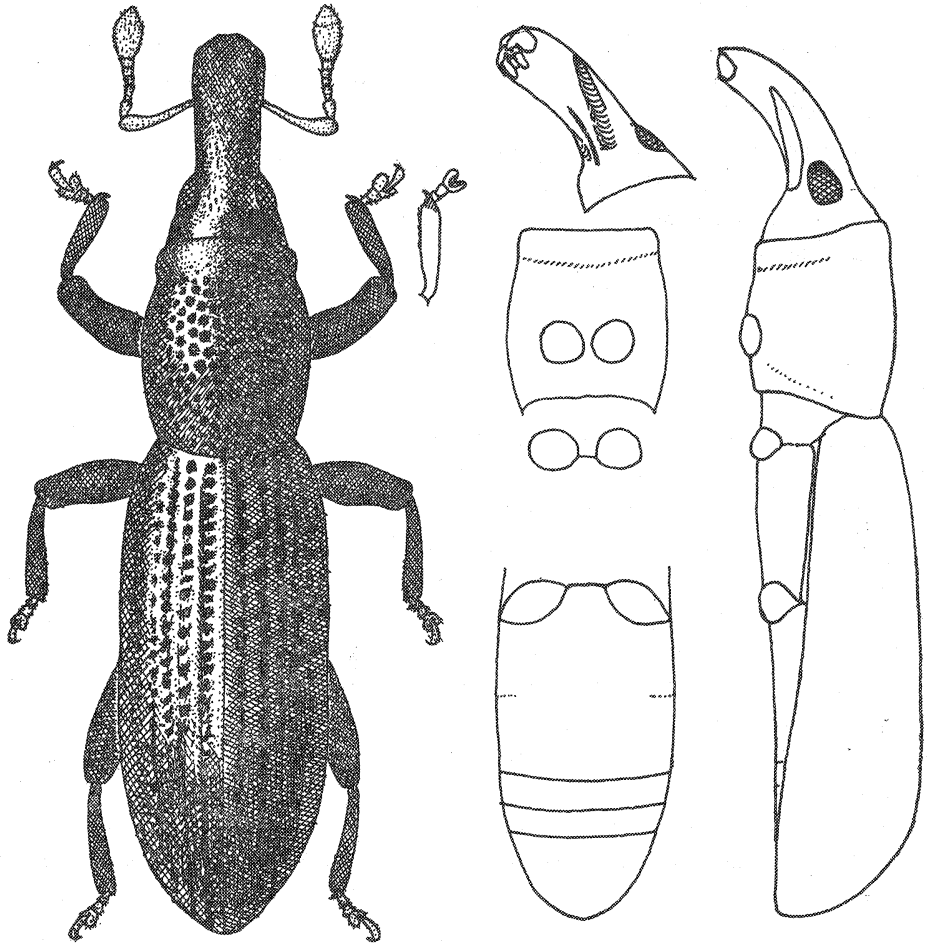

Fig. 2　*Microtribodes formosanus* gen. et. sp. nov.

♂ : Ventrites 1 and 2 weakly depressed at the middle.

Length : 2.1 mm (excl. rostrum)

Holotype : ♂, Fenchihu, Chiai Hs., Formosa, 24. VII. 1966, H. Sasaji leg. Paratype : 1♀, Chiao-Li-Ping, Chiai Hs., Formosa, 13. VI. 1965, S. Ueno leg.

Types are preserved in the collection of the Entomological Laboratory, Faculty of Agriculture, Kyushu University in Fukuoka.

***Conisius* gen. nov.**

Type-species : ***Conisius yaeyamanus* sp. nov.**

Frons between eyes narrower than the base of rostrum, post-ocular constriction distinct, distance between eye and post-ocular constriction shorter than the diameter ef eye ; rostrum parallel-sided, longer than head and shorter than pronotum ; scrobe oblique, its dorsal margin touching the ventral margin of eye ; underside of rostrum with a sharp median keel running from the constriction to near the apex ; antenna with scape longer than funicle, slightly exceeding eye, funicle 5-segmented, segment 1 robust, a little longer than broad, segment 2 much longer than broad, segments 3～5 transverse, widening distally. Prothorax a little longer than

broad, truncate at the base. Scutellum oval, flat. Elytra parallel-sided with roundly rectangular shoulders, a little broader than pronotum, punctate-striate, ultimate stria abbreviate behind hind coxa. Sternum with the front coxae very narrowly separated, mesosternum on the same level with metasternum, mesosternal process narrower than a coxa, metasternum nearly as long as ventrites 1 and 2 taken together in the median line. Femora clavete, tibiae strongly uncinate and with a small mucro, tarsi with entire segment 3.

This new genus is the closest to *Gitonischius* MARSHALL, but separable from it by the characters noted in the key.

***Conisius yaeyamanus* sp. nov.** (Fig. 3)

Derm reddish brown, bare.

Head finely shagreened, with reticulate punctures before the post-ocular constriction; eye slightly convex, coarsely facetted, frons without median fovea. Rostrum similarly punctured as frons behind the antennal insertion, and sparsely provided with fine punctures thenceforth, neither striate nor carinate. Antennae reddish brown, scape a little exceeding eye.

Prothorax a little longer than broad (7 : 8), the sides very slightly curved, subapical constriction well marked on the lateral and ventral sides and weak on the disk, dorsum closely punctate on the disk, the punctures wider than the interspaces and becoming closer and shagreened laterally, impunctate at the middle before subapical constriction.

Elytra parallel-sided, striae with large round punctures, which tend to become confluent and shagreened on the declivity, intervals narrower than striae, not punctured, glossy, stria 3 connate with 9 near the apex.

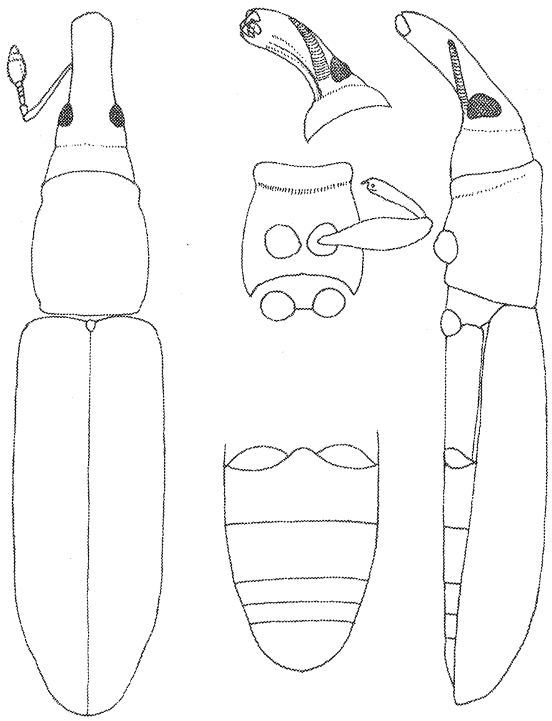

Fig. 3 *Conisius yaeyamanus* gen. et sp. nov.

Prosternum strongly punctured behind the subapical constriction, not punctured before the subapical constriction and the narrow area along the anterior margin of front coxae, shagreened behind coxae. Mesosternal process and metasternum punctate, interspace of the punctures as broad as or slightly narrower than punctures and tend to becoming closer and shagreened on the side, metepisternum linear. Ventrites 1 and 2 similarly punctures as metasternum, ventrites 3～5 sparsely provided with fine punctures.

♂ : Rostrum slightly shorter than twice the width.

♀ : Rostrum a little longer than twice the width.

Length : 1.55～1.7 mm (excl. rostrum)

Holotype : ♀; paratypes 1♂ 1♀, Nakaragawa, Iriomote, Ryukyus, 5. X. 1963, K. Morimoto leg. Holotype and male paratype are preserved in the collection of the Entomological Laboratory of Kyushu University, and female paratype is in the present author's cabinet.

Key to tribes

1 : Mesosternum strongly depressed below level of metasternum ; mesosternal process not or only slightly wider than prosternal process and much narrower than a middle tibia ; stria 6 of elytra reaching the base (exception : *Tarchius*), head not constricted behind eyes ……Rhyncolini

1′ : Mesosternum on the level of metasternum (exceptions : *Miorrhinus*. *Sphaerocorynus*) ; mesosternal process much broader than prosternal process, at least as broad as a middle tibia ; stria 6 of elytra not reaching the base (a few exceptions) ……2

2 : Eyes ventro-lateral, contiguous with the anterior margin of prothorax at their lower posterior corners ; rostrum separated from head by a transverse depression, or punctured rostrum sharply contrasted to unpunctured head at base of rostrum ; head not constricted behind eyes……Himatinini

2′ : Eyes lateral or dorso-lateral, distant from the anterior margin of pronotum ; rostrum continous with head in profile ; head often constricted behind eyes ……Cossonini

Key to genera of tribe Rhyncolini

1 : Scutellum absent ……*Pselactus* Broun

1′ : Scutellum present ……2

2 : Scutellum deeply sunk ……3

2′ : Scutellum on level with elytra ……4

3 : Striae 1—5 not reaching the base of elytra ; intervals not granulate……
……*Stenoscelodes* Konishi (fig. 4)

3′ : Stria 2 not reaching the base of elytra ; intervals always granulate ……
……*Stenoscelis* Wollaston (fig. 5)

4 : Rostrum broader than long ; scrobes curving downwards well in front of eyes……
……*Brachytemnus* Wollaston (fig. 6)

4′ : Rostrum longer than broad……5

5 : Funicle 6-segmented……*Hexarthrum* Wollaston (fig. 7)

5′ : Funicle 7-segmented ……6

6 : Mesosternal process pointing downwards below level of metasternum ; stria 6 of elytra reaching close to the base of elytra ; femora nearly parallel-sided… ……
……*Tarchius* Pascoe (fig. 8)

6′: Mesosternal process not pointing downwards below level of metasternum; stria 6 of elytra reaching the base ……7

7 : Prosternum concave at the anterior margin; eyes close to pronotum; rostrum with a pair of sulci above scrobes; abdominal sternite 2 shorter than 3±4; Scolytid-like …… ……*Inosomus* Hutton

7′: Prosternum not concave anteriorly; eyes distant from prothorax; scrobes latero-ventral, without sulci above scrobes; abdominal sternite 2 as long as 3+4. …… …… *Rhyncolus* Germar (fig. 9)

Key to genera of tribe Himatinini

1 : Funicle 6-segmented; procoxae narrowly separated ……*Isochronanus* Voss

1′: Funicle 7-segmented ……2

2 : Tibial unci arising from the middle of the apex; rostrum as long as pronotum; front coxae 2/3 the width of a coxa; body flat, sparsely hairy ……3

2′: Tibial unci arising from the dorsal edge of the apex ……5

3 : Scutellum obsolete; humeri of elytra reduced; tarsal segment 3 entire, as broad as 2 ……*Cotasterosoma* Konishi

3′: Scutellum present; humeri rectangular ……4

4 : Femora dentate ……*Pogonorhinus* Broun

4′: Femora edentate ……*Arecophaga* Broun

5 : Prosternum concave at the anterior margin; front tibiae with combs ……6

5′: Prosternum truncate at the anterior margin; front coxae broadly separated; front tibiae with rudimentary combs ……*Himatinum* Cockerell (fig. 10)

=*Pholidonotus* Wollaston

=*Macrohimatinum* Konishi, syn. nov.

6 : Tarsal segment 3 bilobed; prosternal process half the width of a coxa …… ……*Himatiodes* Marshall

6′: Tarsal segment 3 entire; prosternal process 1/5 the width of a coxa …… ……*Ochronanus* Pascoe (fig. 11)

Key to genera of tribe Cossonini

0 : Rostrum with a shiny unpunctured transverse patch at the base of rostrum …… …… *Lissopsis* Wollaston (fig. 12)

(The only specimen, type, has lost its antennae as stated by Wollaston, 1873)

0′: Rostrum without such patch ……1

1 : Funicle with 4 segments; rostrum broader than long; labrum exposed; scrobes reaching eyes; tarsal segment 3 entire; tarsal groove of front tibiae angulate laterally; black, shiny, subcylindrical ……*Tetracoptus* Wollaston (fig. 13)

1′: Funicle with 5, 6 or 7 segments ……2

2 : Funicle with 5 segments ……3

2′: Funicle with 6 or 7 segments ……54

3 : Eyes greatly reduced or obsolete ……4

3′: Eyes well developed ……5

4 : Rostrum about as long as pronotum ; antennae inserted behind the middle of rostrum ……*Idus* Broun

4′: Rostrum broad, strongly laminate laterally above scrobes ; antennae inserted before the middle of rostrum ……*Heteropsis* Broun

5 : Scutellum absent ……6

5′: Scutellum present ……13

6 : Tarsal segment 3 bilobed ……7

6′: Tarsal segment 3 not bilobed, scarcely broader than 2 ; derm with scales ……*Leptommatus* Champion (fig. 14)

7 : Front tarsal segment 2 strongly transverse, as broad as 3 ; rostrum about as long as pronotum ; metasternum much shorter than abdominal sternaite 1 ; funicle fragile……*Novitas* Broun

7′: Front tarsal segment 3 much broader than 2 ……8

8 : Head strongly constricted behind eyes ; scape exceeding hind margin of eye……*Dryotribus* Wollaston (fig. 15)

8′: Head not or scarcely constricted behind eyes ……9

9 : Derm shiny, bare ……*Microtribus* Wollaston

9′: Derm opaque, incrustate, setose ……10

10 : Elytra parallel-sided with rectangular humeri ……11

10′: Elytra fusiform with reduced humeri ; rostrum about as long as pronotum ; frons between eyes a little narrower than the base of rostrum ……*Isodryotribus* Konishi

11 : Frons between eyes narrower than the base of rostrum……*Choenorrhinodes* Champion

11′: Frons as broad as the base of rostrum ……12

12 : Rostrum as long as wide ; elytra with costate intervals ……*Choerorhinus* Fairmaire (fig. 16)

12′: Rostrum much longer than head ; frons with a pair of granules above eyes ; intervals not costate ; body cylindrical ……*Lepyrodes* Wollaston (fig. 17)

13 : Tarsal segment 3 (especially in middle and hind tarsi) entire or weakly emarginate, but not bilobed ……14

13′: Tarsal segment 3 bilobed ……34

14 : Distance between eye and post-ocular constriction twice or more times as long as the diameter of eye ; body slender ; rostrum much longer than head……*Stenotrupis* Wollaston (fig. 18)

14′: Distance between eye and post-ocular constriction as long as or shorter than the diameter of eye ……15

15 : Scape reaching or passing posterior margin of eye ……16

15′: Scape not reaching posterior margin of eye ……23

16 : Body conspicuously hairy ; rostrum slender, depressed at base ; antennae inserted in the middle of rostrum ; scrobe bifurcate posteriorly ……*Agastegmus* Broun

16′: Body glossy, bare ……17

17 : Distance between eye and post-ocular constriction as long as the diameter of eye ; body flat, slender ; tarsal groove of front tibia angulate laterally in male, normal in female ……*Microcossonus* Wollaston (fig. 19)

17′: Distance between eye and post-ocular constriction much shorter than the diameter of eye ……18

18 : Front tarsal groove sharply angulate and expanded laterally……19
18′: Front tarsal groove normal ……20
19 : Rostrum broader than long ; scrobe touching eye ; body cylindrical ……
……*Coptodes* Marshall (fig. 20)
19′: Rostrum longer than broad ; scrobe not touching eye ; body oblong-oval……
…… *Xenosomatium* Wollaston (fig. 21)
20 : Front coxae subcontiguous, separated by less than 1/5 the width of a coxa ……21
20′: Front coxae well separated, intercoxal area more than half the width of a coxa……21
21 : Rostrum longer than head, strongly keeled on the underside ; scrobes convergent behind
…… *Conisius* Morimoto (fig. 3)
21′: Rostrum as long as head, not keeled on the underside ; scrobes widely separated behind
…… *Gitonischius* Marshall
22 : Rostrum slender, much longer than head……*Camptoscapus* Broun
22′: Rostrum subspatulate, slightly longer than wide, nearly as long as head ……
……*Tytthoxydema* Zimmerman (fig. 22)
23 : Club of antenna as long as or longer than funicle……24
23′: Club of antenna shorter than funicle ……25
24 : Derm rather densely clothed with conspicuous yellow hairs ; tarsal segment 3 emarginate distally……*Selocomis* Broun
24′: Derm inconspicuously setose ; tarsal segment 3 entire……*Macroscytalus* Broun
25 : Elytral interval 9 strongly explanate and joined to lateral margin near apex ……26
25′: Elytral interval 9 not explanate nor joined to lateral margin ……27
26 : Elytral interval 9 costate and joined with lateral margin near apex……
…… *Euophryum* Broun
26′: Elytral intervals 7 and 9 fused on declivity ; rostrum with a pair of apico-ventral projections in male…… *Torostoma* Broun (fig. 23)
27 : Derm setose……28
27′: Derm bare ……31
28 : Rostrum as long as head and pronotum taken together ; male with a bifid, spiniform process on the underside of rostrum and a process on the underside of the base of rostrum ; female with a tubercle on the underside of the base of rostrum ……
…… *Arecocryptus* Broun (fig. 24)
28′: Rostrum shorter than pronotum, simple in both sexes……29
29 : Post-ocular constriction obsolete ; scutellum minute ; derm sparsely hairy ……
…… *Trachyglyphus* Broun
29′: Post-ocular constriction distinct on each side ; scutellum conspicuous……30
30 : Derm finely pubescent ; post-ocular constriction a little distant from eye ……
……*Rhinanisus* Broun
30′: Derm densely clothed with hairs ; post-ocular constriction very close to eye……
…… *Belka* Broun
31 : Lateral margin of elytra expanded ventro-laterally, the apices projecting below the level of abdomen…… *Zenoteratus* Broun (fig. 25)
31′: Lateral margin of elytra not expanded and not produced downwards below abdomen
……32

32 : Distance between eye and post-ocular constriction as long as the diameter of eye ; rostrum as long as head, subspatulate……*Proconus* Broun

32′ : Distance between eye and post-ocular constriction much shorter than the diameter of eye ; rostrum longer than head ……33

33 : Funicular segment 2 longer than 3……*Pentarthrum* Wollaston (fig. 26)

33′ : Funicular segment 2 as long as 3……*Baeorhopalus* Broun

34 : Rostrum strongly and angularly expanded behind the apex ……*Protogonus* Broun (fig. 27)

34′ : Rostrum not or weakly expanded distally ……35

35 : Distance between eye and post-ocular constriction as long as or longer than the diameter of eye ; body slender ……*Leptomimus* Wollaston (fig. 28)

35′ : Distance between eye and post-ocular constriction much shorter than the diameter of eye, or post-ocular constriction obsolete ……36

36 : Tarsal segment 5 broadest near the base and tapering distally ; *Sitophilus*-like……*Dynatopechus* Marshall (fig. 29)

36′ : Tarsal segment 5 clavate or parallel-sided……37

37 : Rostrum with a deep excavation beneath in the apical half separated from the oral cavity by a high narrow perpendicular transverse ridge……*Pentoxydema* Marshall (fig. 30)

37′ : Rostrum without such transverse ridge behind oral cavity……38

38 : Body strongly depressed, broad ; pronotum broadest before the base ; post-ocular constriction obsolete ; funicular segment 2 as long as or longer than 1 ……39

38′ : Body subcylindrical or slightly depressed ; post-ocular constriction very often distinct ; funicular segment 2 not longer than 1……40

39 : Front tibiae angulate ventrally in the middle ; posterior margin of pronotum weakly concave in the middle……*Tychiosoma* Wollaston (fig. 31)

39′ : Front tibiae straight ventrally ; posterior margin of pronotum straight ……*Tychiodes* Wollaston (fig. 32)

40 : Pronotum and elytra hairy ……41

40′ : Pronotum and elytra bare……49

41 : Rostrum as long as pronotum ; scrobes connate ventrally between eyes ……*Agrilochilus* Broun

41′ : Rostrum shorter than pronotum……42

42 : Frons between eyes narrower than the narrowest width of rostrum ; front coxae narrowly separated ……*Entium* Broun

42′ : Frons between eyes as broad as or broader than the narrowest width of rostrum ; front coxae moderately separated ……43

43 : Rostrum abruptly declivous at apex……*Glyphoramphus* Broun

43′ : Rostrum not abruptly declivous at apex……44

44 : Scape passing posterior margin of eye……45

44′ : Scape not reaching posterior margin of eye ……46

45 : Derm sparsely setose ; eyes flat……*Adel* Broun

45′ : Derm closely hairy ; eyes convex……*Eucossonus* Broun

46 : Tarsal segment 3 weakly bilobed, nearly as broad as apex of tibia ……47

46′ : Tarsal segment 3 strongly bilobed, broader than the apex of tibia……48

47 : Derm sparsely hairy ; scrobe bifurcate, its dorsal arm directed towards upper part of eye ……*Rhinanisus* Broun

47′ : Derm closely hairy ; scrobe simply curving downwards before eye ……*Sericotrogus* Broun

48 : Pronotum sparsely and uniformly covered with short hairs ……*Tanysoma* Broun

48′ : Pronotum sparsely covered with short hairs on the central area and closely with long hairs on the other parts ……*Eutassa* Broun

49 : Front coxae closely approximate ; post-ocular constriction obsolete……50

49′ : Front coxae moderately separated ; post-ocular constriction more or less well marked behind eyes ……52

50 : Elytra with reduced humeri ; frons between eyes narrower than the base of rostrum ……51

50′ : Elytra parallel-sided with rectangular humeri ; frons as broad as the base of rostrum ……*Unas* Broun

51 : Metasternum shorter than abdominal sternite 1 (measured at the middle) ; pronotum as long as broad, posterior margin narrower than the anterior……*Mesoxenophasis* Wollaston

51′ : Metasternum as long as the abdominal sternite 1 ; pronotum longer than wide, posterior margin as broad as the anterior……*Microtribodes* Morimoto (fig. 2)

52 : Frons between eyes narrower than the base of rostrum ; head between eyes and post-ocular constriction not convex laterally……*Toura* Broun (fig. 33)

52′ : Frons between eyes as broad as or slightly broader than the base or rostrum……53

53 : Tarsal segment 5 parallel-sided ……*Merisma* Broun

53′ : Tarsal segment 5 claviform distally……*Stenotoura* Broun

54 : Pronotum distinctly bisinuate at the base (weak in *Stereodermus*) ; tarsal segment 3 entire, tarsal segment 5 clavate ……55

54′ : Pronotum not bisinuate at the base (if weakly bisinuate, tarsal segment 5 broadest near the base and tapering distally or derm matt) ……64

55 : Rostrum broader than long ; mesosternal process distinctly narrower than a coxa ; front tarsal groove sharply angulate laterally ; body black, glossy, cylindrical ; pronotum simply punctured ……56

55′ : Rostrum not broader than long, often spatulate ; mesosternal process broader than a coxa ; front tarsal groove not or obtusely angulate laterally ; body flat……60

56 : Funicle with 6 segments ; abdominal sternite 2 as long as 3+4 ; metepisterna extremely narrow ……*Stereonotus* Faust

56′ : Funicle with 7 segments ; metepisterna broad to very broad……57

57 : Abdominal process sharply pointed so that the hind coxae are very close to each other or actually contiguous ; metepisterna very broad, broader than the narrowest part of mesosternal process ; rostrum with exposed labrum……*Syncoxus* Marshall (fig. 34)

57′ : Abdominal process rounded or subtruncate ; hind coxae distinctly separated ; metepisterna narrower or not broader near their bases than the mesosternal process ……58

58 : Frons narrower than the base of rostrum ; labrum exposed ……*Stereoborus* Wollaston (fig. 35)

58′ : Frons as broad as the base of rostrum ……59

59 : Apical margin of rostrum with three deep foveae ; pronotum strongly bisinuate at the base ……*Stereotribus* Wollaston (fig. 36)

59′ : Apical margin of rostrum without such foveae ; pronotum weakly bisinuate at the base ……*Stereoderus* Wollaston (fig. 37)

60 : Rostrum spatulate……61

60′ : Rostrum almost parallel-sided, not expanded laterally before antennae ; body flat, pronotum very finely punctured ……*Heterophaseolus* Voss

61 : Derm matt, dull ; pronotum evenly and very closely punctured ……*Hyponotus* Wollaston (fig. 38)

61′ : Derm glossy ; pronotum with an unpunctured mesial area, admesial areas strongly punctured……62

62 : Elytral intervals 1, 3 and 5 weakly costate at the base ; rostrum strongly expanded laterally at the antennal insertions and weakly tapering anteriorly thereafter ……*Exomesites* Broun

62′ : Elytral intervals not costate at the base……63

63 : Body strongly depressed ; pronotum unpunctured with the exception of rows of large punctures in the anterior constriction and either side of the mesial region ……*Heterophasis* Wollaston (fig. 39)

63′ : Body moderately depressed ; pronotum punctured……*Cossonus* Clairville (fig. 40)
=*Isotrogus* Wollaston (fig. 41), syn. nov.

64 : Tarsal segment 5 broadest near the base and tapering distally at least in male (female of *Heterarthrus* has normal tarsal segment 5, see Key 100), prosternum before coxae more or less depressed ; scape reaching the posterior margin of eye……65

64′ : Tarsal segment 5 normal, clavate……72

65 : Tarsal segment 3 bilobed, much broader than 2……66

65′ : Tarsal segment 3 entire……69

66 : Front tibiae strongly bisinuate ; rostrum a little longer than wide……*Exonotus* Wollaston (fig. 42)

66′ : Front tibiae not bisinuate ; rostrum much longer than wide……67

67 : Rostrum strongly and angulately expanded laterally in male ; elytral stria 1 much deeper than 2……*Gloeodema* Wollaston (fig. 43)

67′ : Rostrum not or weakly expanded apically ; stria 1 not or slightly deeper than 2……68

68 : Pronotum weakly bisinuate at the base ……*Conarthrosoma* Voss (fig. 44)

68′ : Pronotum truncate at the base……*Pseudocossonus* Wollaston (fig. 45)
=*Catolethromorphus* Wollaston

69 : Scrobes strongly convergent and almost confluent under eyes ……*Holcolaimus* Zimmerman (fig. 46)

69′ : Scrobes more or less converging behind, but their posterior ends distinctly separated ……70

70 : Frons between eyes narrower than the base of rostrum ; scrobes widely separated behind (see Key 100)……*Heterarthrus* Wollaston ♀ (fig. 47)

70′ : Frons as broad as the base of rostrum……71

71 : Front tibiae strongly bisinuate ; rostrum about 1.5 times as long as wide ……*Conarthrus* Wollaston (fig. 48)

71′: Front tibiae not bisinuate; rostrum more than twice as long as wide ..... *Brachychaenus* Wollaston (fig. 49)

72 : Scutellum obsolete; metasternal suture obsolete 73

72′: Scutellum evident 80

73 : Tibial unci wanting; eyes obsolescent; scrobes dorso-apical *Otiorhynchus*-like ..... *Hectaeus* Broun

73′: Tibial unci present; eyes normal 74

74 : Post-ocular constriction conspicuous; derm roughly sculptured and dull; scape passing beyond posterior margin of eye ..... *Dryotribodes* Zimmerman

74′: Post-ocular constriction obsolete 75

75 : Tarsal segment 3 bilobed 76

75′: Tarsal segment 3 entire or weakly notched 77

76 : Eyes dorsal, distant from scrobes ..... *Anotheorus* Blackburn

76′: Eyes dorso-lateral, touching the dorsal margin of scrobes ..... *Oodemas* Boheman

77 : Front coxae separated by almost the width of a coxa; body depressed; tarsal segment 3 broader than 2 ..... *Heteramphus* Sharp

77′: Front coxae closer together 78

78 : Frons between eyes narrower than the base of rostrum; prosternum strongly emerginate anteriorly ..... *Allaorus* Broun

78′: Frons between eyes broader than the base of rostrum; prosternum not emerginate 79

79 : Eyes reduced, small; derm bare (see Himatinini) ..... (*Cotasterosoma* Konishi)

80 : Tibiae greatly expanded on dorsal edge to form dentate subapical plate-like structure; body and tibiae Scolytid-like ..... *Xenocnema* Wollaston

80′: Tibiae normal 81

81 : Derm dull, matt, often with hairs or scales, or dirty covering 82

81′: Derm glossy (rarely opaque), bare, at most with sparse hairs on elytra 87

82 : Body slender, apices of elytra produced posteriorly; distance between eyes and post-ocular constriction as long as the diameter of eye ..... *Aphyoda* Pascoe (fig. 51)

82′: Body oblong; apices of elytra not produced behind; distance between eyes and post-ocular constriction shorter than the diameter of eye 83

83 : Intervals of elytra clothed with scales; post-ocular constriction fine; eyes strongly convex ..... *Pholidoforus* Wollaston (fig. 54)

83′: Elytra sparsely clothed with hairs or bare 84

84 : Eyes dorso-lateral, flat; frons much narrower than the base of rostrum; scrobes dorso-lateral ..... *Psilosomus* Wollaston (fig. 52)

84′: Eyes lateral; frons as broad as or slightly narrower than the base of rostrum; scrobes lateral or latero-ventral 85

85 : Pronotum bisinuate at the base; tarsal groove of front tibia angulate laterally ..... *Neocles* Champion (fig. 53)

85′: Pronotum not bisinuate at the base; tarsal groove of front tibia not expanded laterally 86

86 : Tarsal segment 3 bilobed ..... *Exodema* Wollaston (fig. 55)

86′: Tarsal segment 3 entire or slightly notched ..... *Coprodema* Wollaston (fig. 56)

87 : Pronotum weakly concave at the base; body strongly depressed 88

87′ : Pronotum truncate at the base ; body not or moderately depressed……89
88 : Scrobes convergent under eyes ; tarsal groove of front tibia not expanded laterally ……*Homalotrogus* Wollaston (fig. 57)
88′ : Scrobes short, not passing under eyes ; tarsal groove of front tibia angulate laterally ……*Gloeotrogus* Wollaston (fig. 58)
89 : Eyes minute ; pronotum broader than elytra ; scrobes entirely lateral ; rostrum as long as pronotum ; antennae inserted near the apex ……*Dysomma* Perkins
89′ : Eyes of normal size ; scrobes more or less oblique……90
90 : Scape not passing the middle of eye……91
90′ : Scape reaching or passing the hind margin of eye……94
91 : Rostrum short, broader than long ; apical margin of elytra expanded and lower than the level of abdomen ; head not constricted behind eyes…… ……*Xenomimetes* Wollaston (fig. 59)
91′ : Rostrum longer than wide ; apical margin of elytra not expanded……92
92 : Tarsal segment 3 bilobed ; head not constricted behind eyes…… ……*Rhyncolosoma* Champion
92′ : Tarsal segment 3 entire……93
93 : Scape not reaching eye ; dorsal edge of scrobe directed towards middle of eye …… ……*Stenomimus* Wollaston
93′ : Scape reaching the middle of eye ; dorsal edge of scrobe directed towards lower edge of eye……*Catolethrobius* Voss
94 : Distance between eyes and post-ocular constriction as long as the diameter of eye……95
94′ : Distance between eyes and post-ocular constriction shorter than the diameter of eye ……96
95 : Eyes flat ; frons between eyes as broad as the base of rostrum ; body and rostrum slender ; pronotum simply punctured ; mucro of tibia simple…… ……*Proeces* Schönherr (fig. 60)
=*Pseudostenotrupis* Voss
95′ : Eyes convex ; frons broader than the base of rostrum ; pronotum with punctures united longitudinally to form irregular striolae on the side ; mucro with a small subsidiary tooth……*Oedioprosopus* Marshall (fig. 61)
96 : Male rostrum armed with a pair of conspicuous projections below eye ; tarsal segment 5 strongly compressed at the base……*Xenotrupis* Wollaston (fig. 62)
96′ : Male rostrum not armed ; tarsal segment 5 not compressed……97
97 : Elytra sparsely provided with long hairs ; rostrum as long as (♀) or slightly shorter than (♂) pronotum ; male rostrum widening apically ; eye strongly convex ; post-ocular constriction close to eye and very strong ; tarsal segment 3 biloded …… ……*Mysterorrhinus* Marshall
97′ : Elytra not hairy ; rostrum much shorter than pronotum……98
98 : Rostrum slender, longer than head, curved ; antennae inserted in the middle or below the middle of rostrum in lateral aspect so that the scrobe is entirely invisible from above ; frons between eyes slightly narrower than the base of rostrum ; tarsal segment 3 of hind tibia broader than 2, entire or weakly notched …… ……*Pholoeophagosoma* Wollaston (fig. 63)

98′: Antennae inserted above the middle of rostrum in lateral view so that the anterior part of scrobe is visible from above; rostrum often wider before the antennal insertion……99

99 : Frons between eyes a little narrower than the base of rostrum; tarsal segment 3 often bilobed and much broader than 2; rostrum longer than head……100

99′: Frons between eyes as broad as or broader than the base of rostrum; tarsal segment 3 entire or slightly notched……103

100 : Elytra sharply marginate at the base (see Key 70) ……*Heterarthrus* Wollaston ♀ (fig. 47)

100′: Elytra not marginate at the base……101

101 : Rostrum as long as or a little longer than head; antennae inserted close to the base of rostrum so that the dorso-lateral margins of rostrum distinctly emarginate behind antennae; tarsal segment 3 of hind legs slightly wider than 2, entire or weakly emarginate……*Macrorhyncolus* Wollaston (fig. 64)

101′: Rostrum longer than head; tarsal segment 3 of hind legs much wider than 2 and bilobed (with a few exceptions) ……102

102 : Rostrum flattened dorso-ventrally, dull, almost straight; post-ocular constriction obsolete on the dorsum; the vertex not sharply separated from frons by a distinct difference in sculpture, but gradually less punctured behind ……*Aphanocorynes* Wollaston

102′: Rostrum convex, as glossy as head, curved; post-ocular constriction well marked off from frons by a difference in sculpture, vertex inpunctate ……*Oxydema* Wollaston (fig. 65)

103 : Tarsal groove of front tibia not or bluntly pointed laterally; post-ocular constriction not touching eye ……104

103′: Tarsal groove of front tibia sharply pointed laterally; rostrum parallel-sided, curved; post-ocular constriction almost touching eye; eye large, convex laterally; temple parallel-sided……*Coptus* Wollaston (fig. 66)

104 : Scape shorter than funicle; front coxae narrowly separated; mesosternum narrower than a coxa……*Eremotes* Wollaston (fig. 67)

104′: Scape longer than funicle……105

105 : Mesosternum more or less depressed below the level of pro- and metasternum; prosternum convex; front coxae very close to hind margin of prosternum; rostrum broader than long; body cylindrical, convex, short……106

105′: Mesosternum on the level of pro- and metasternum; sterna flat; front coxae not very close to the hind margin of prosternum ……107

106 : All coxae widely separated; pro- and mesosternum nearly as broad as a coxa……*Sphaerocorynes* Wollaston (fig. 68)

106′: Prosternal process half as broad as a coxa and narrower than mesosternal process ……*Miorrhinus* Marshall (fig. 69)

107 : Rostrum longer than head; body rather flat……*Orthotemnus* Wollaston (fig. 70)

107′: Rostrum as long as or shorter than head; body convex ……108

108 : Rostrum tapering anteriorly, longer than wide; intercoxal process of ventrite 1 narrower than prosternal process; eye flat ……*Macrancylus* Leconte (fig. 71)

108′: Rostrum at most as long as wide; intercoxal process of ventrite 1 not narrower than prosternal process ……109

109 : Middle and hind femora parallel-sided ; elytra not marginate at the base ……
……*Xestoderma* Wollaston (fig. 72)
109′: Femora normally clavate ……110
110 : Elytra marginate at the base ; body fusiform……*Xestosoma* Wollaston (fig. 73)
110′: Elytra not marginate at the base ; body cylindrical……*Pachyops* Wollaston (fig. 74)

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Explanation of plates

Unless otherwise stated in parenthesis, every sketch comprises entire or anterior part of weevils in dorsal, lateral or ventral aspects, front leg, and antenna.

1, 2, 3 : in text.

4 : *Stenoscelodes hayashii* Konishi (basal part of elytra)

5 : *Stenoscelis hylastoides* Wollaston

6 : *Brachytemnus porcatus* Germar

7 : *Hexarthrum brevicorne* Wollaston, type.

8 : *Tarchius pinquis* Pascoe (mesosternal process in ventro-lateral aspect)

9 : *Rhyncolus truncorum* Germar

10 : *Himatinum pubescens* Wollaston, type.

11 : *Ochronanus pygmaeus* Pascoe, type.

12 : *Lissopsis speculifrons* Wollaston, type.

13 : *Tetracoptus reductus* Wollaston, type.

14 : *Leptommatus flavisetis* Champion, type.

15 : *Dryotribus mimeticus* Horn

16 : *Pentacoptus gronopifrons* Wollaston, type (=*Choerorhinus*).

17 : *Lepyrodes cylindricus* Wollaston, type.

18 : *Stenotrupis crassifrons* Wollaston

19 : *Microcossonus wallacei* Wollaston
20 : *Coptodes caudex* Marshall, type.
21 : *Xenosomatium tibiale* Wollaston, type.
22 : *Tyttoxydema exilis* Zimmerman, paratype.
23 : *Torostoma apicale* Broun
24 : *Arecocryptus bellus* Broun (rostrum, top : male ; bottom : female).
25 : *Zenoteratus macrocephalus* Broun
26 : *Pentarthrum huttoni* Wollaston
27 : *Protogonum helmsianum* Broun
28 : *Leptomimus fragilis* Wollaston
29 : *Dynatopechus auropilosus* Fairmaire
30 : *Pentoxydema rostralis* Marshall, cotype (mouth part, ventral aspect).
31 : *Tychiosoma gracilirostris* Wollaston, type.
32 : *Tychiodes adamsi* Wollaston, type.
33 : *Toura longirostre* Wollaston
34 : *Syncoxus rudis* Marshall, type.
35 : *Stereoborus robustus* Wollaston, type.
36 : *Stereotribus scabrifrons* Wollaston
37 : *Stereoderus barbatus* Wollaston
38 : *Hyponotus subpubescens* Wollaston
39 : *Heterophasis ruficollis* Wollaston
40 : *Cossonus linearis* Fabricius
41 : *Isotrogus maurus* Wollaston
42 : *Exonotus basalis* Wollaston
43 : *Gloeodema spatula* Wollaston
44 : *Conarthrosoma barbatum* Voss
45 : *Pseudocossonus brevitarsis* Wollaston
46 : *Holcolaimus anamalainus* Marshall, type.
47 : *Heterarthrus lewisi* Wollaston, type.
48 : *Conarthrus tarsalis* Wollaston, type.
49 : *Brachychaenus pallidulus* Wollaston, type.
50 : *Xenocnema spinipes* Wollaston (head in ventral aspect showing the position of postcoila of mandible ; front tibia in dorsal and lateral aspects, and median and hind tibiae)
51 : *Aphyoda brenthoides* Pascoe
52 : *Psilosomus hebes* Walker
53 : *Neocles nympheae* Champion
54 : *Pholodoforus squameus* Wollaston
55 : *Exodema sublutosa* Wollaston, type.
56 : *Coprodema calandraeforme* Wollaston
57 : *Homalotrogus angustifrons* Wollaston
58 : *Gloeotrogus politissimus* Wollaston
59 : *Xenomimetes destructor* Wollaston
60 : *Proeces macer* Boheman
61 : *Oediprosopus strigicollis* Marshall, cotype.

62 : *Xenotrupis fusiformis* Wollaston, type.
63 : *Phloeophagosoma minutum* Wollaston, type.
64 : *Macrorhyncolus crassiuscurus* Wollaston
65 : *Oxydema fusiforme* Wollaston
66 : *Coptus oculatus* Wollaston, type.
67 : *Eremotes chloropus* Linné
68 : *Sphaerocorynes lewisianus* Wollaston, type.
69 : *Miorrhinus sulcifrons* Marshall
70 : *Orthotemnus reflexus* Wollaston, type.
71 : *Macrancylus linearis* Leconte
72 : *Xestoderma wallacei* Wollaston, type.
73 : *Xestosoma grandicolle* Wollaston, type.
74 : *Pachyops cylindricus* Wollaston

アジア産キクイゾウムシ亜科の属について

（食材性昆虫の研究　第3報）

森　本　桂[1]

摘　要

キクイゾウムシ亜科のゾウムシは，伐倒直後の材や枯木，枯竹などを加害するものが多く，また乾材や貯穀の害虫も知られている。

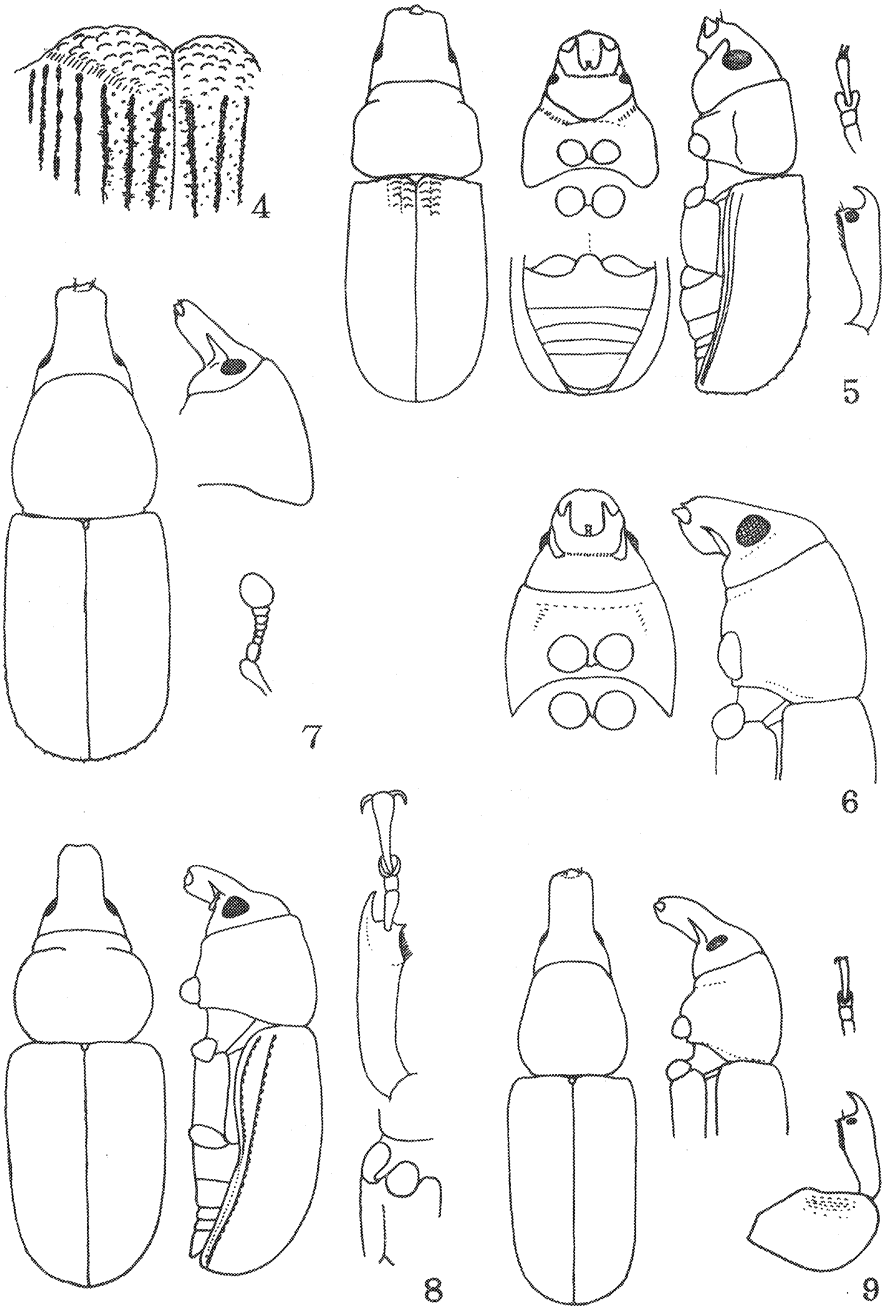
この亜科は，Wollaston (1873) によって分類の基礎がつくられ，その後多くの研究者によって分類学的研究がつづけられ，世界中から約300属1,300種が記載されている。これらの論文は，検索表や図がほとんどないので，比較標本のない日本では文献からの同定は困難であり，特に記載から属を決めることは容易でなかった。

この論文は，著者が英国へ留学した際，大英博物館（自然史）に保存されている多数のタイプ標本をもとに，インドからニューギニアまでの東洋区と旧北区東部，および太平洋の島々から記録のある143属のうち調査のできた122属について検索表にまとめると同時に，73属の模式種を図示して，属の同定が容易にできるようにしたものである。

この論文で亜科を3族に大別し，新しく *Microtribodes formosanus* と *Conisius yaeyamanus* を新属新種として記載し，*Macrohimatium* と *Isotrogus* を *Himatinum* と *Cossonus* のシノニムとして整理した。

1973年6月7日受理

(1)　九州支場保護部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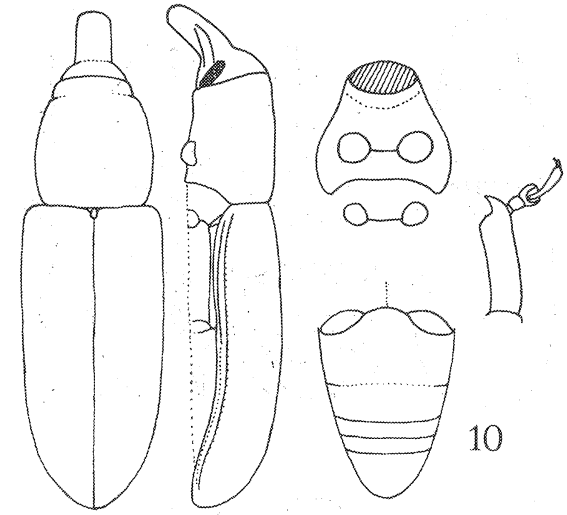

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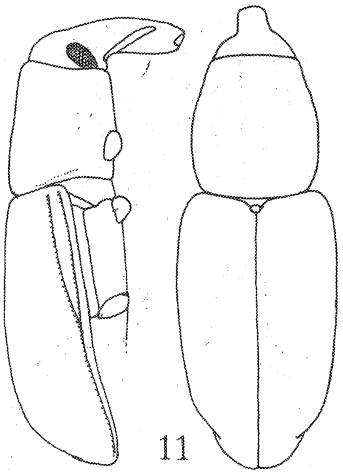

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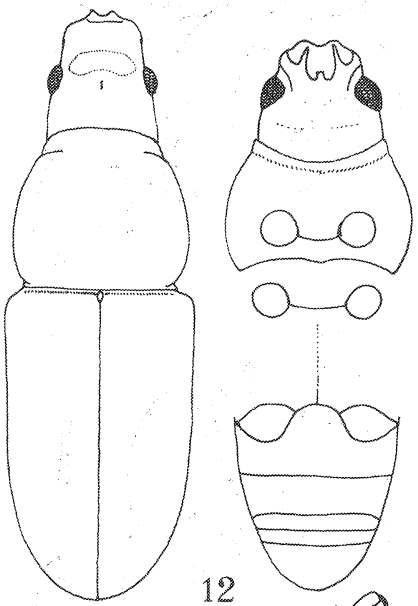

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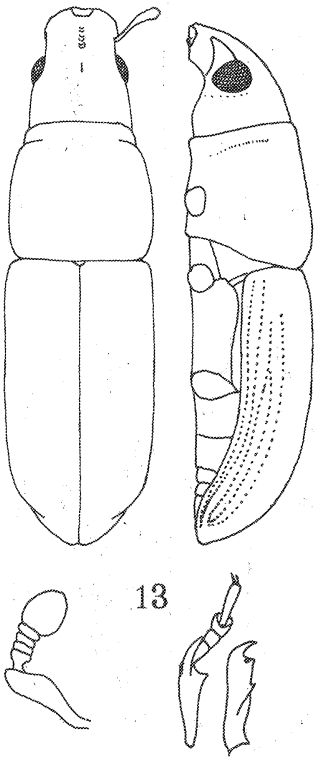

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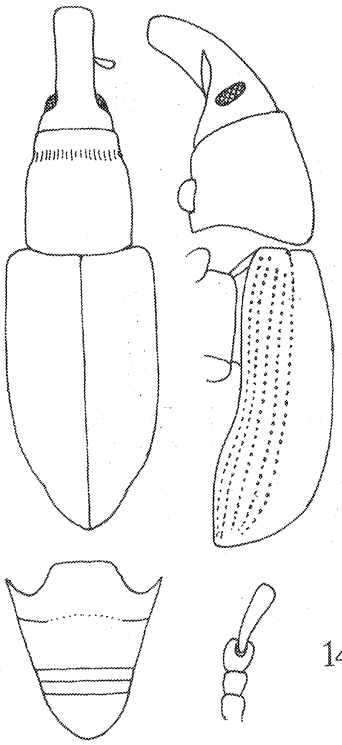

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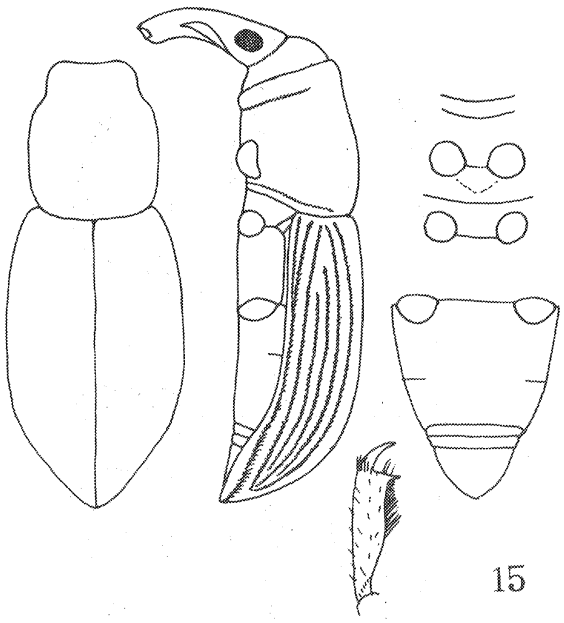

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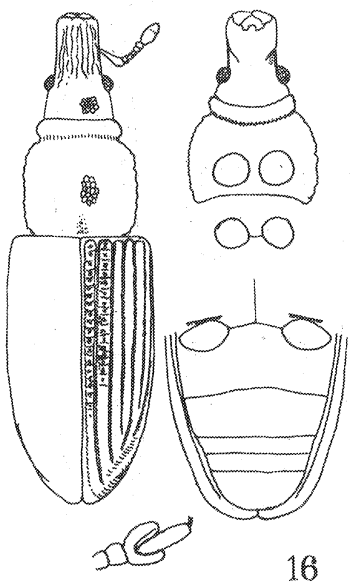

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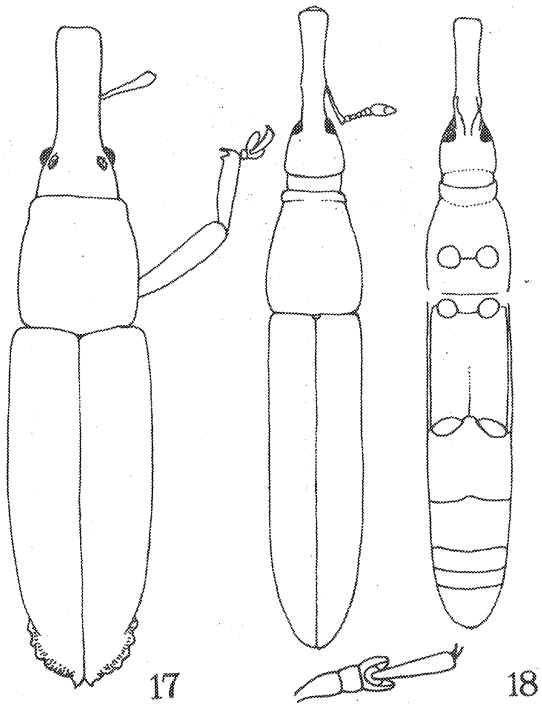

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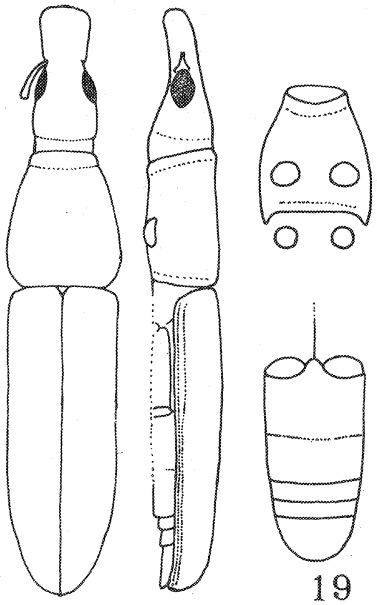

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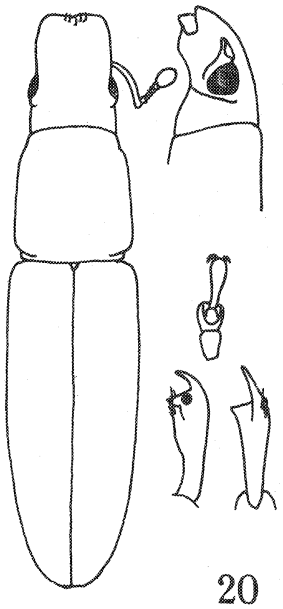

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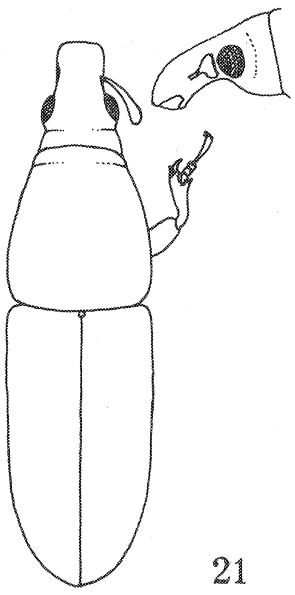

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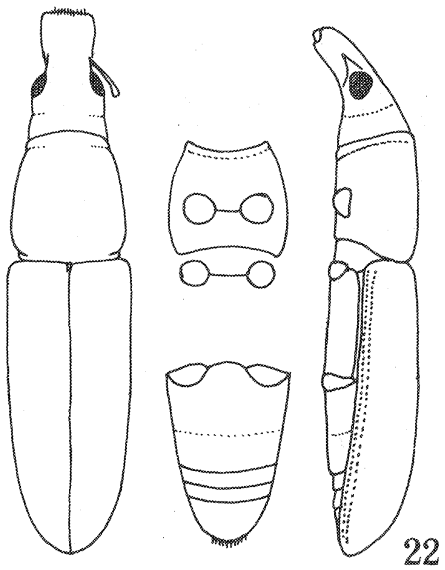

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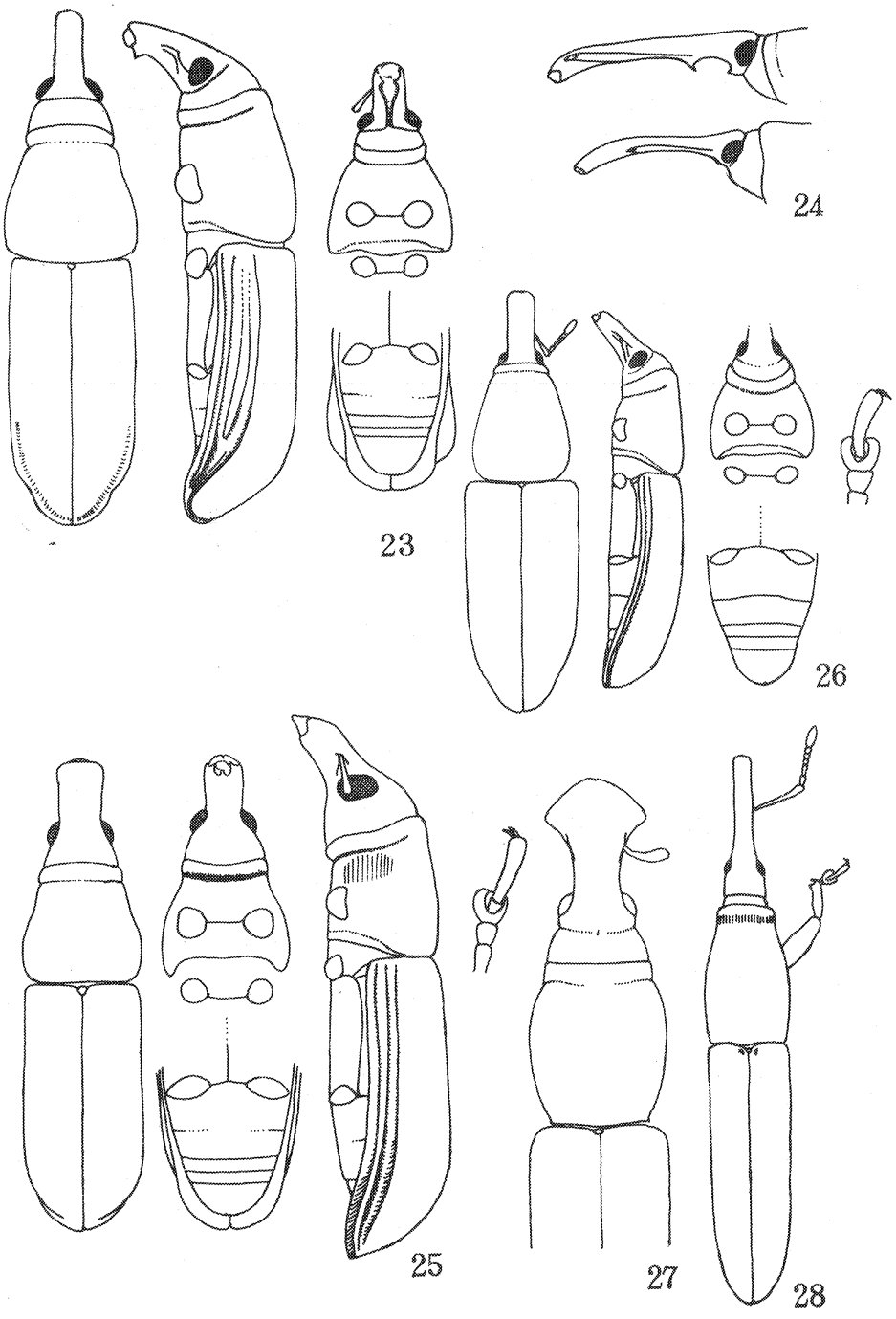
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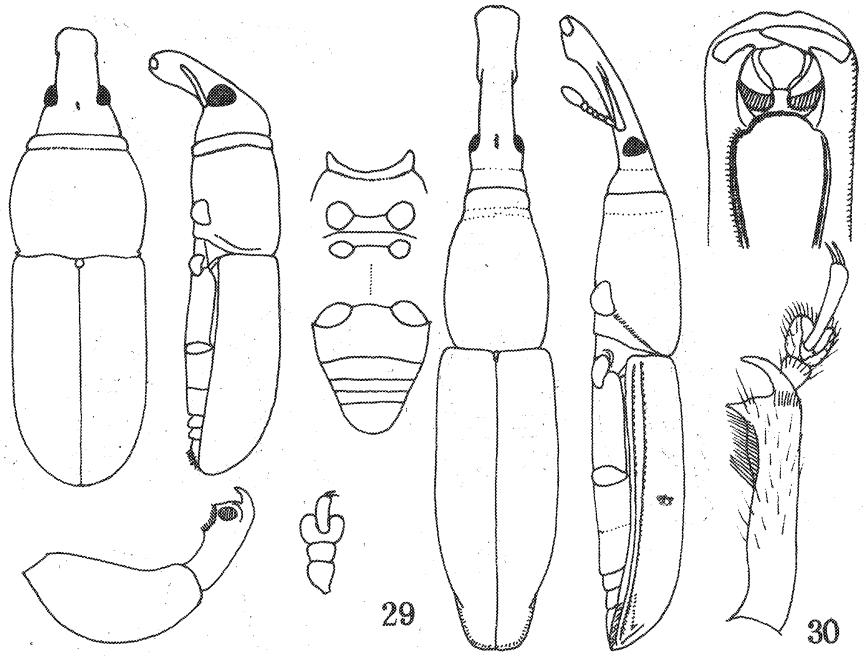

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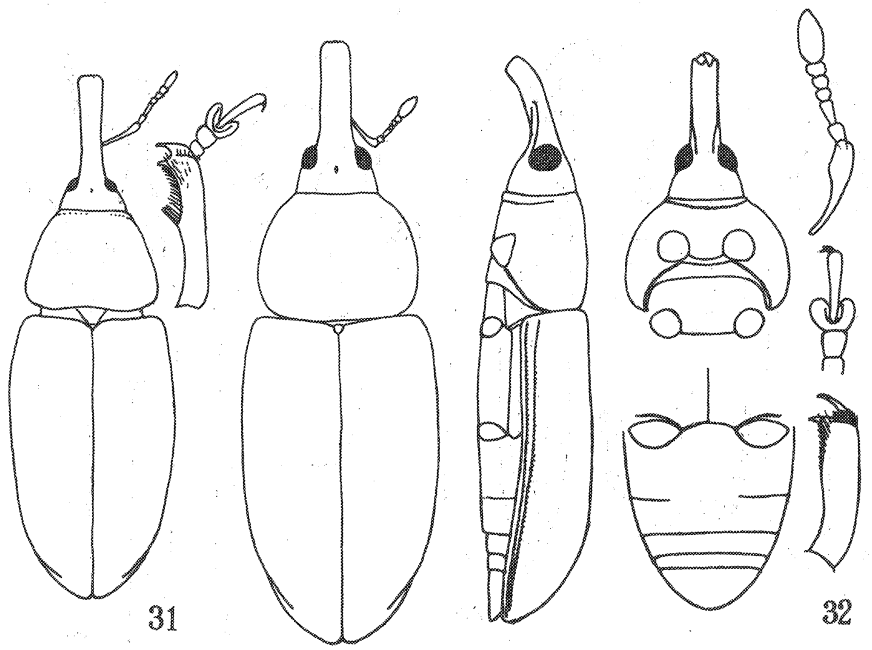

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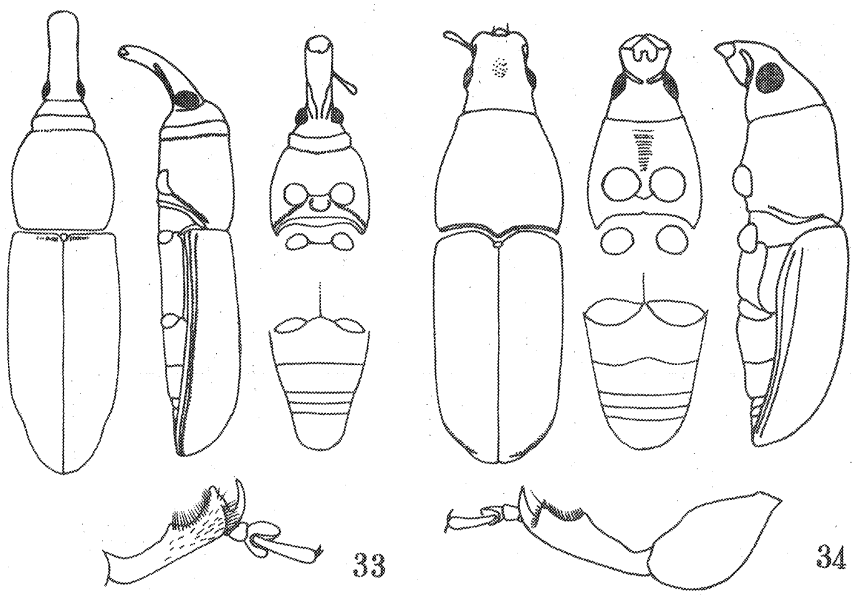

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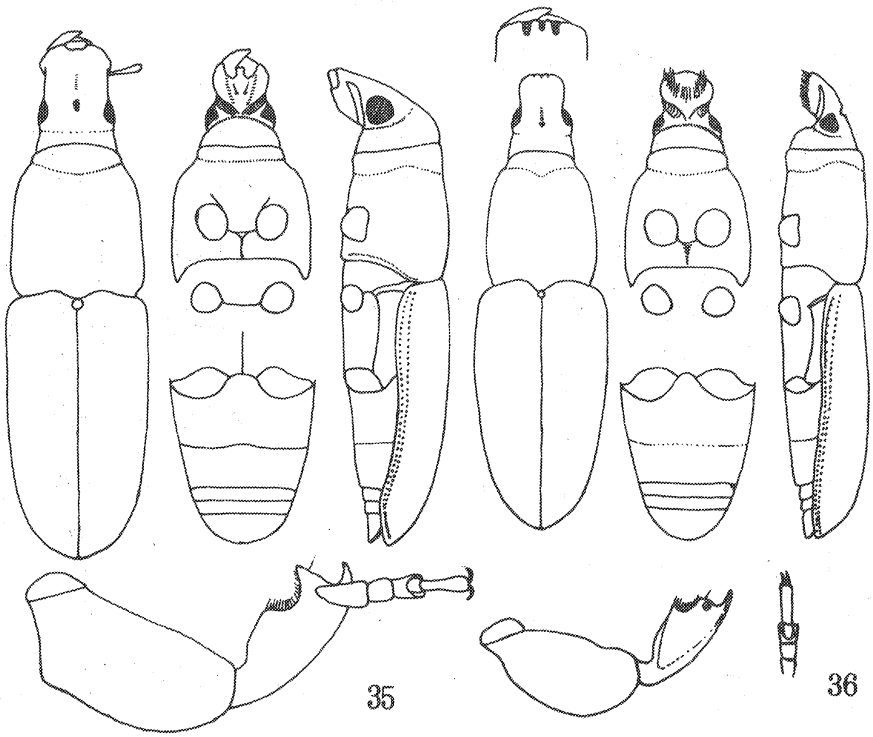

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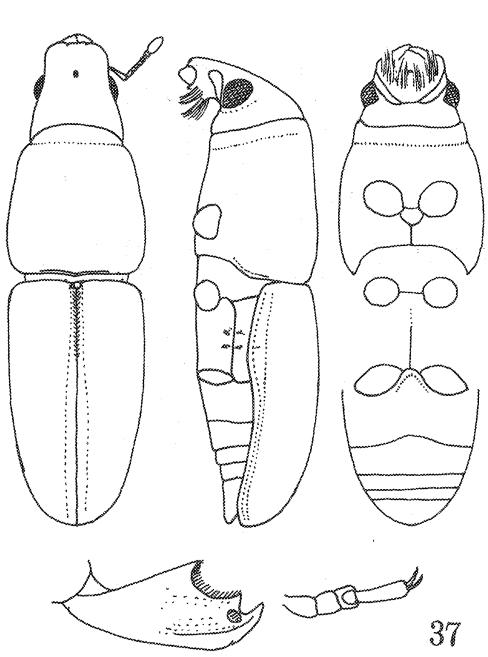

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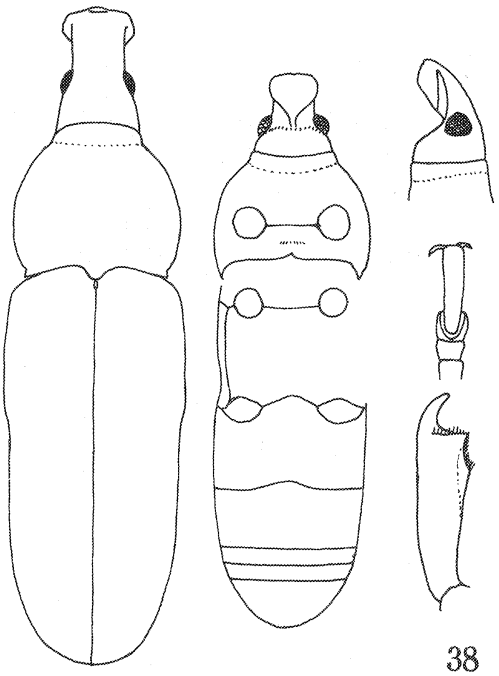

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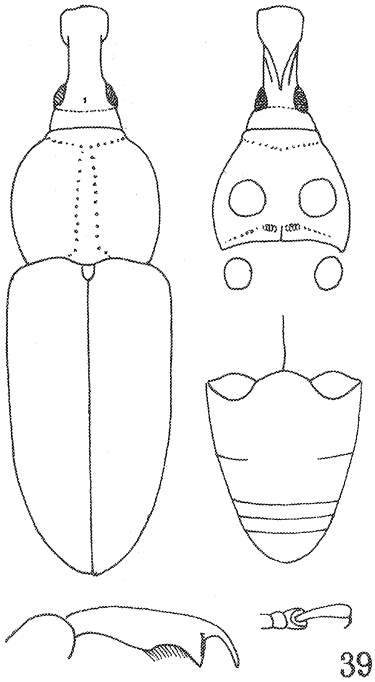

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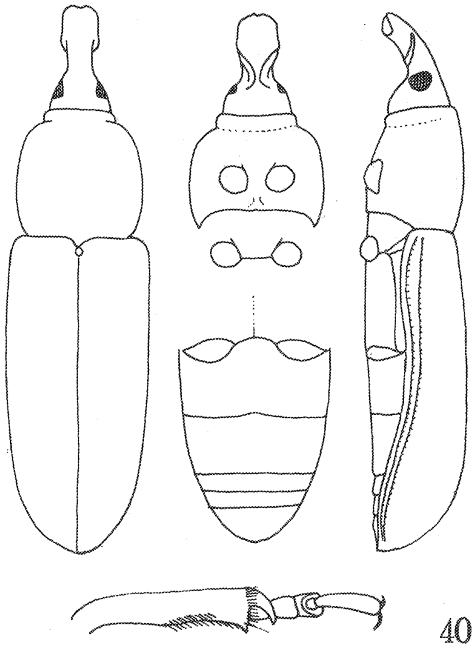

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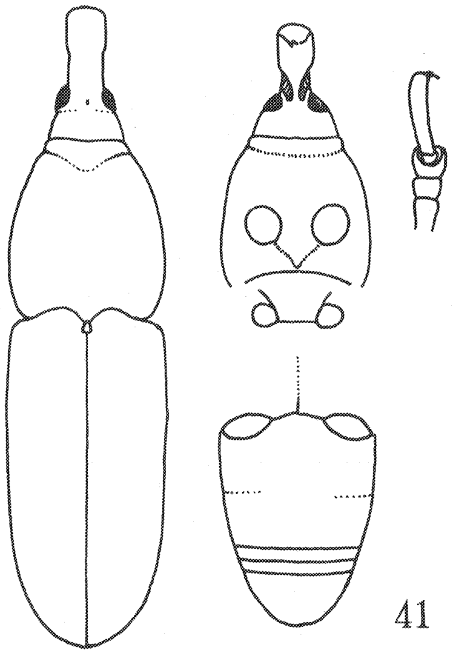

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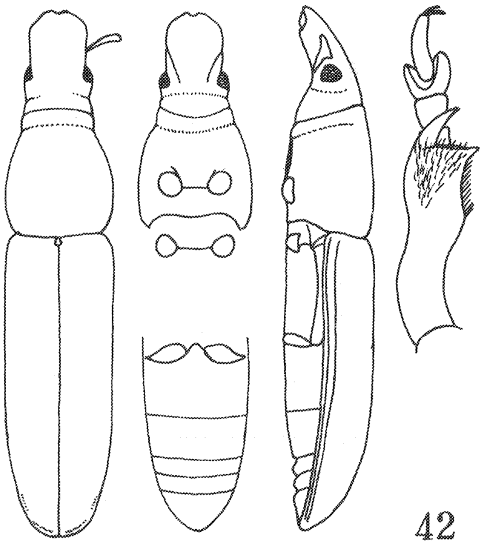

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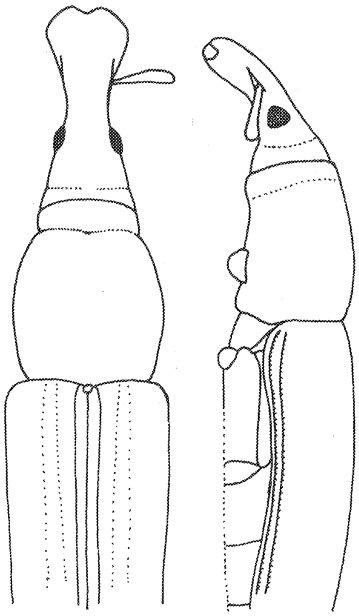

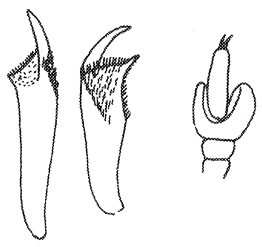

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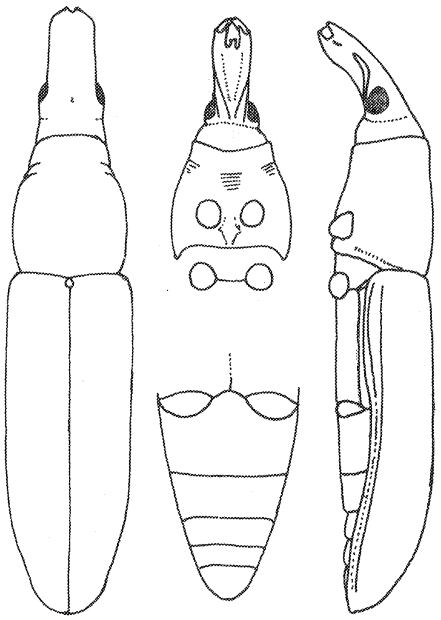

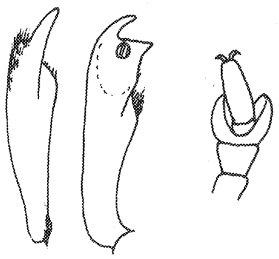

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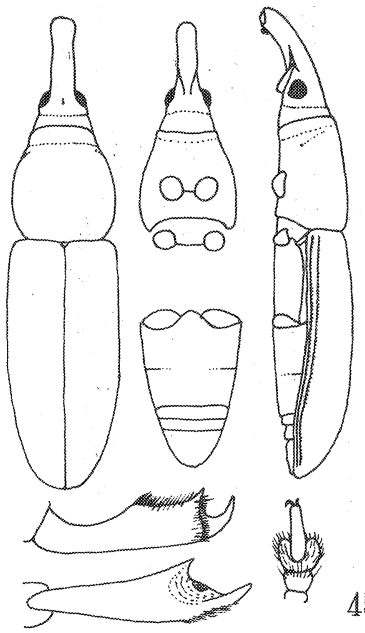

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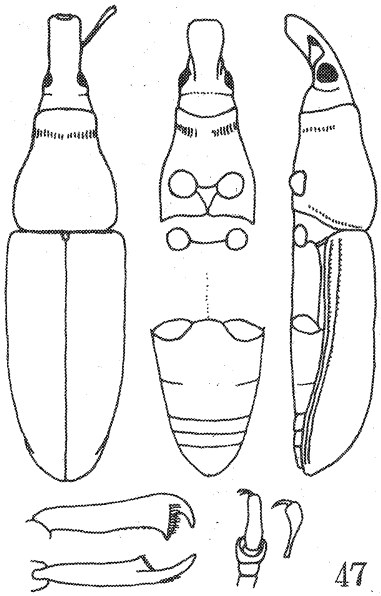

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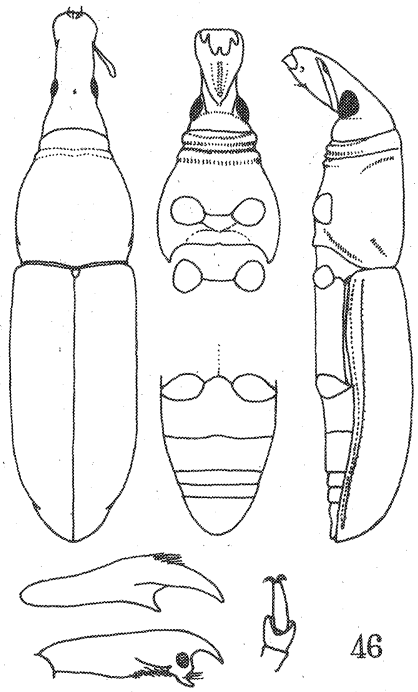

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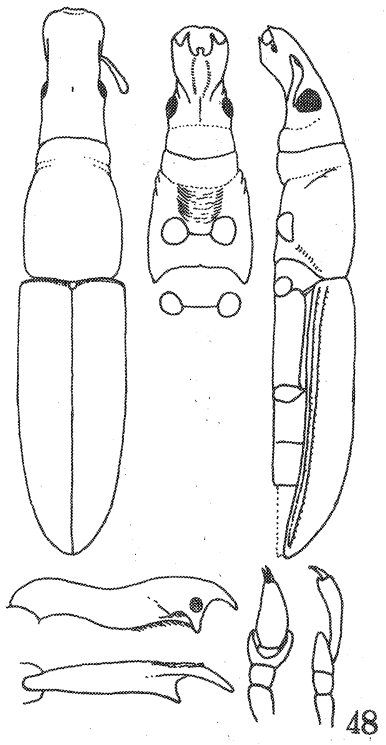

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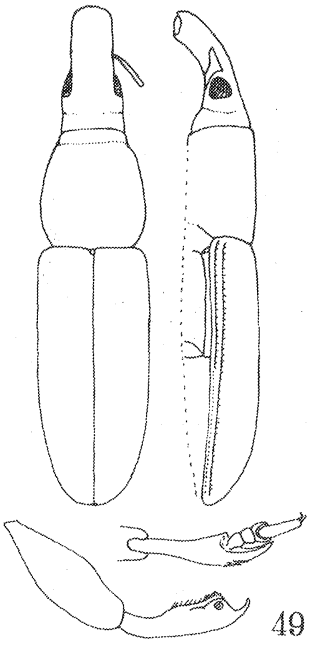

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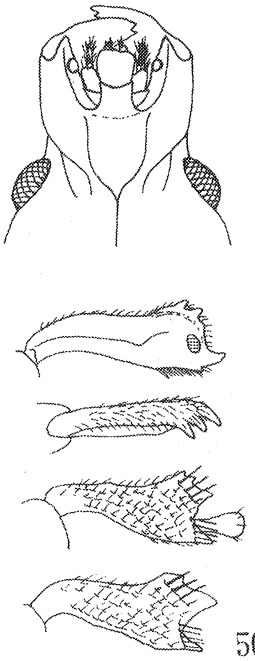

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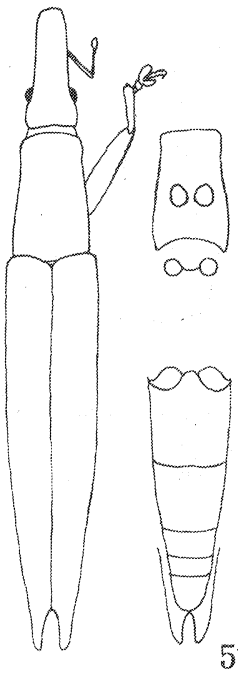

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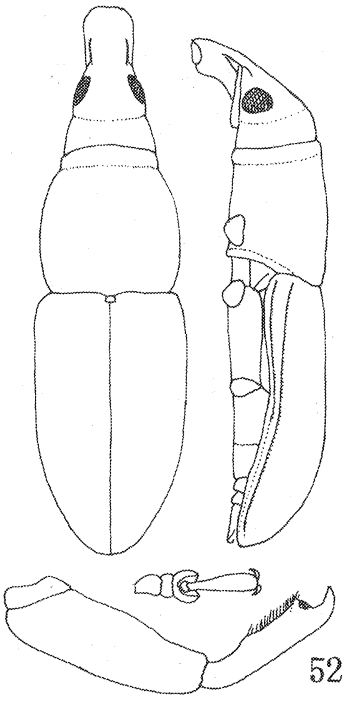

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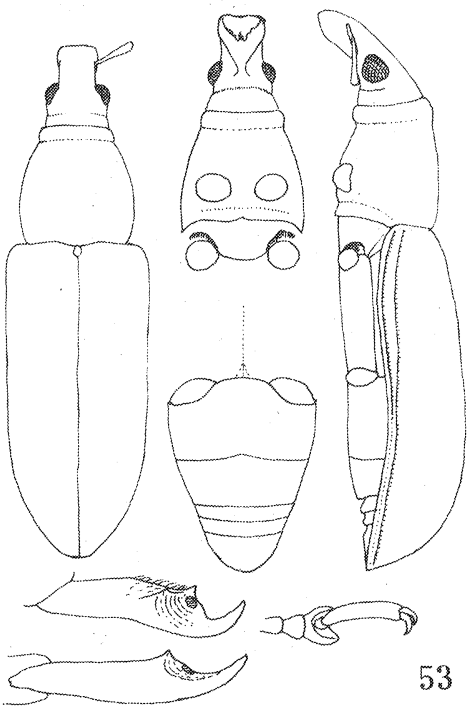

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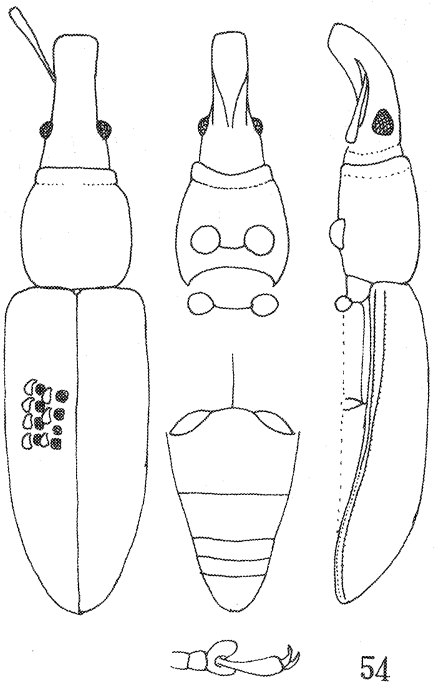

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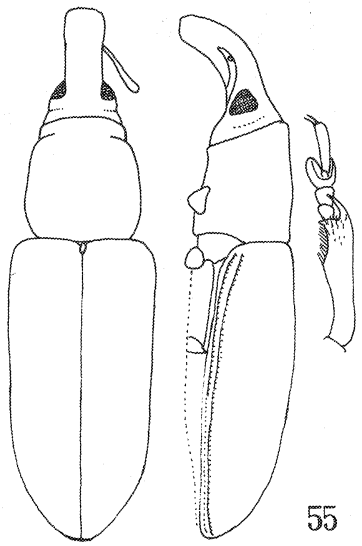

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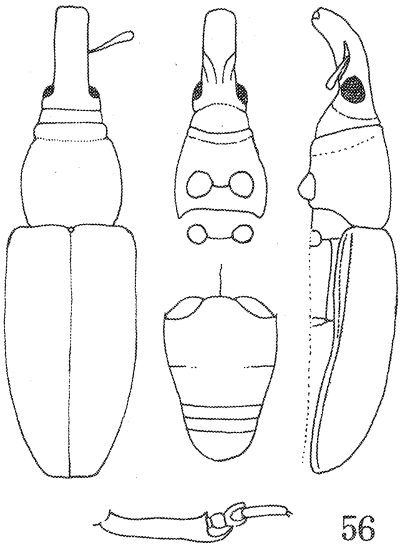

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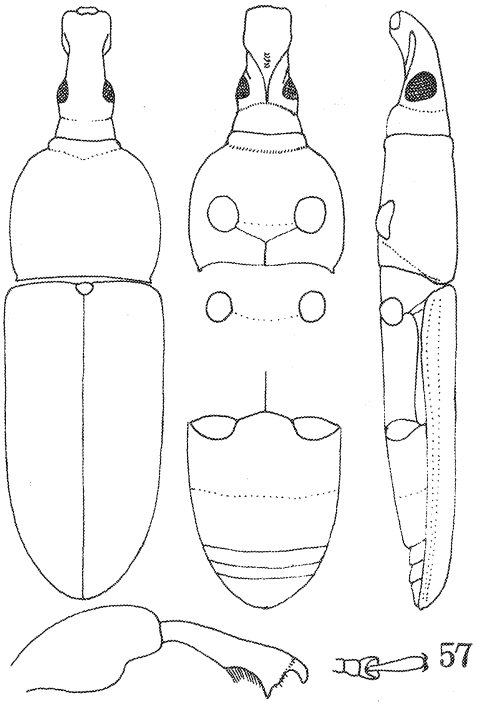

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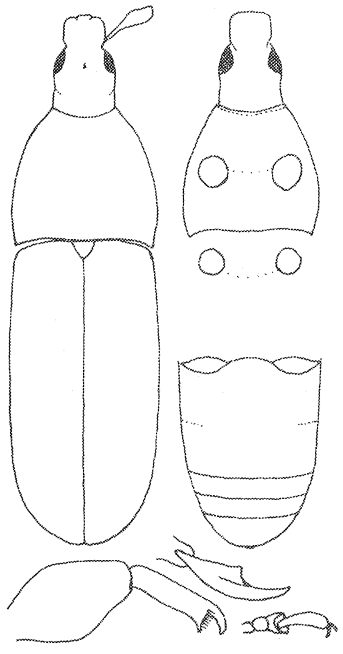

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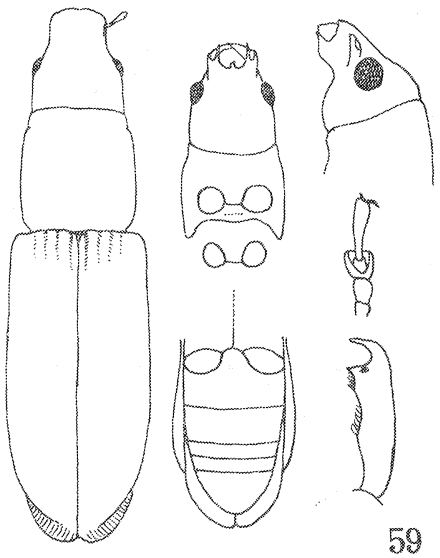

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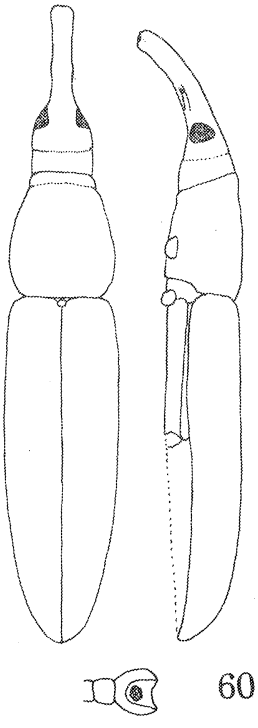

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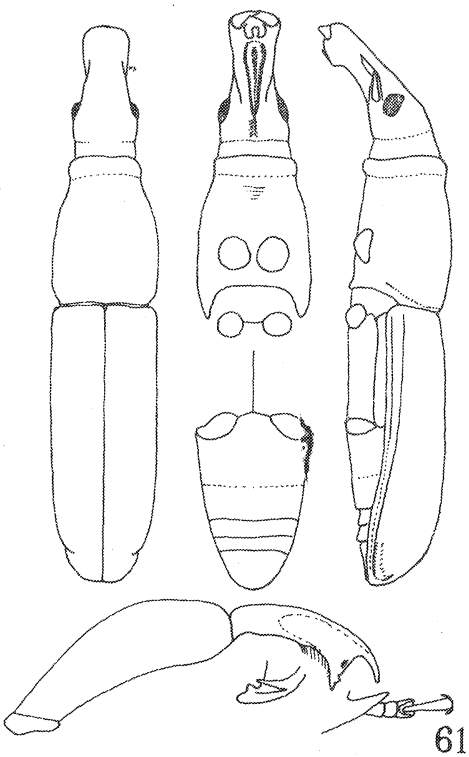

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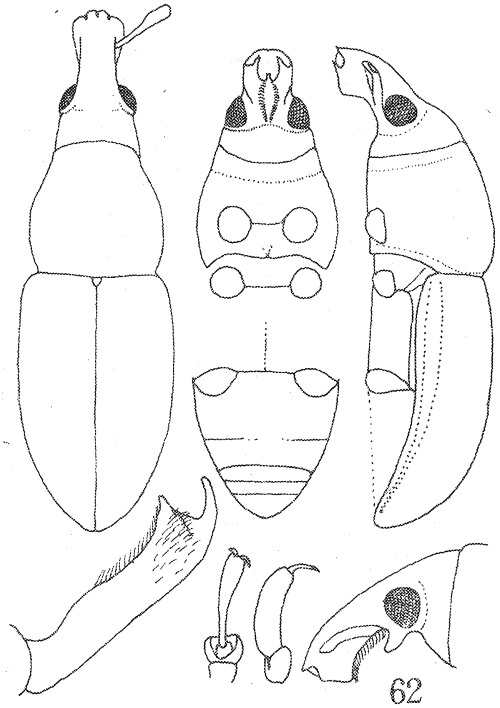

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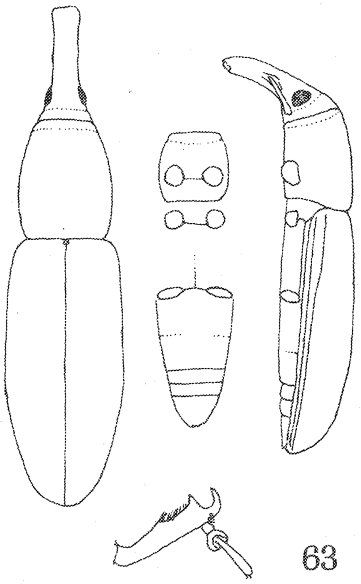

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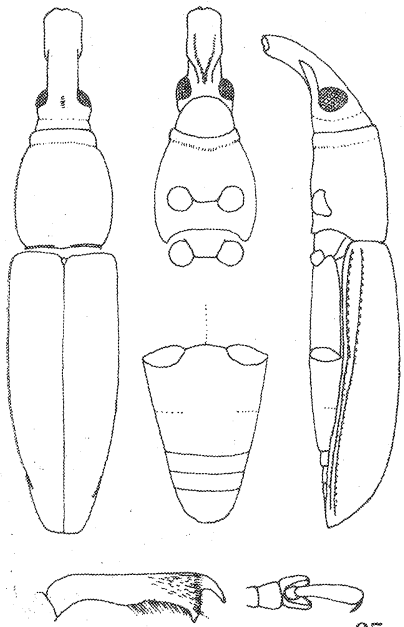

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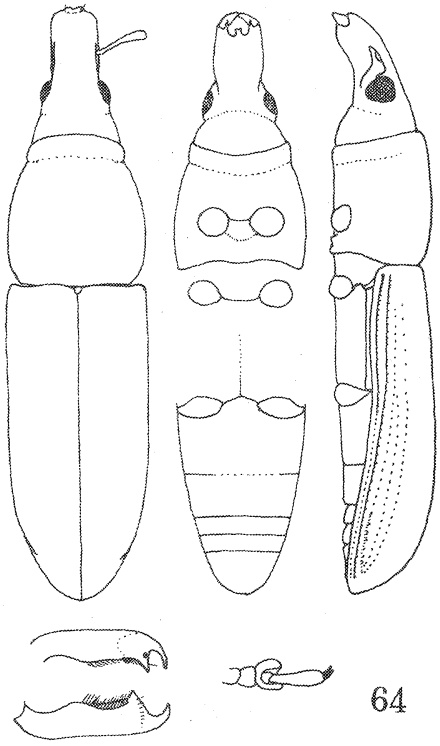

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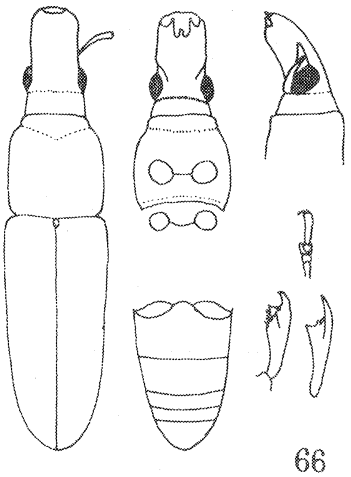

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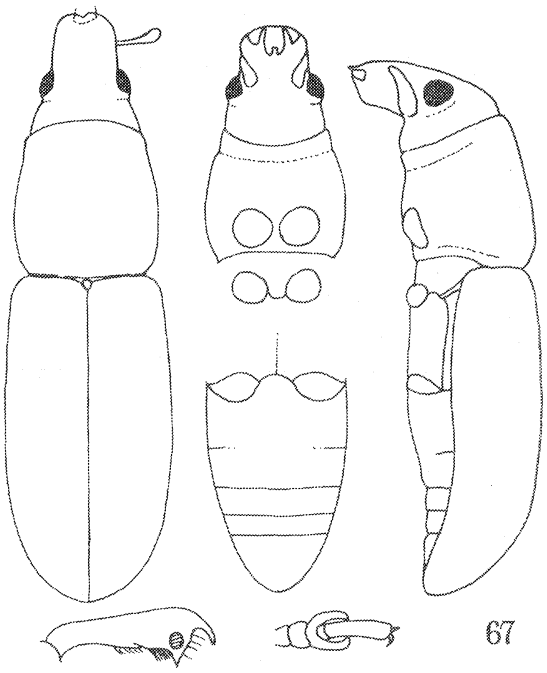

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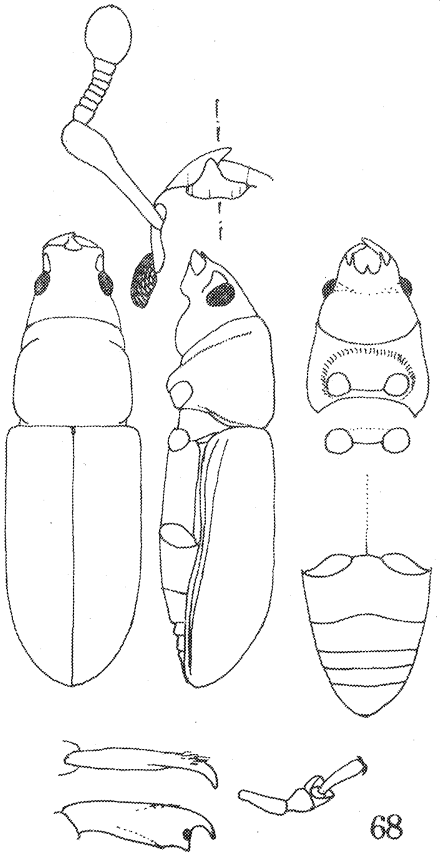

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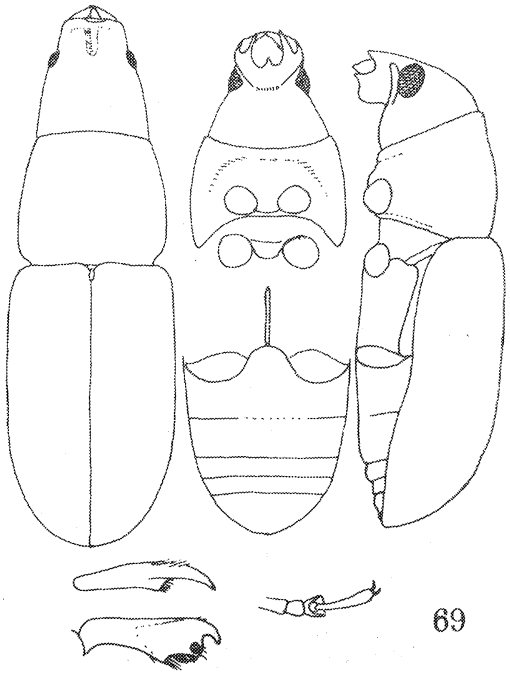

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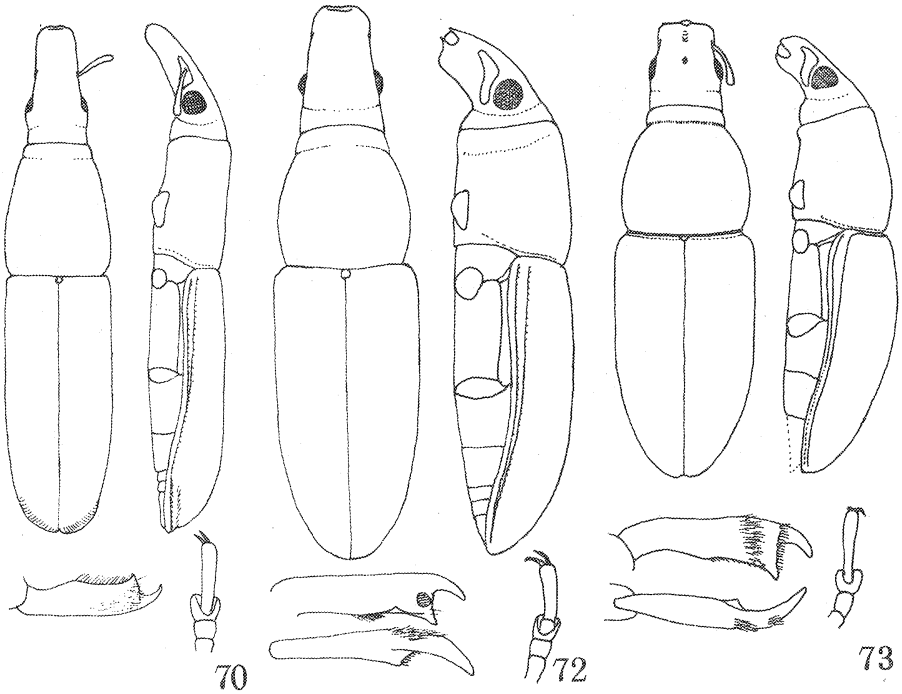
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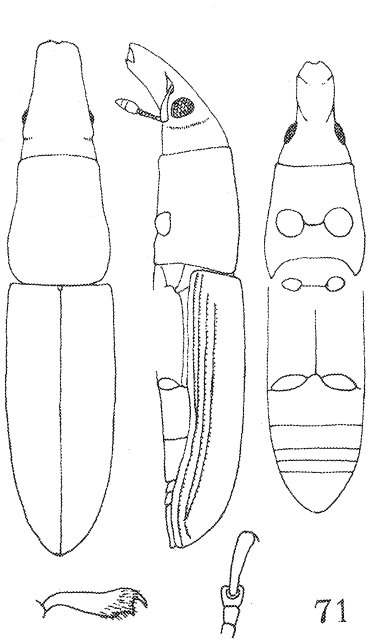
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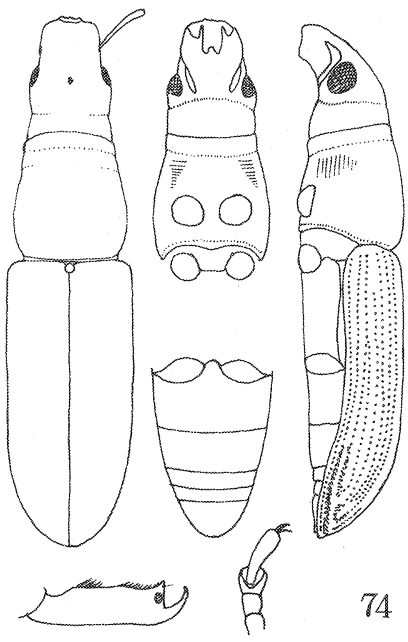
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