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RHYSODINI OF THE WORLD
PART I. A NEW CLASSIFICATION OF THE TRIBE, AND A SYNOPSIS
OF *OMOGLYMIUS* SUBGENUS *NITIGLYMIUS*, NEW SUBGENUS
(COLEOPTERA: CARABIDAE OR RHYSODIDAE)

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This paper is the first of a projected series which will constitute a revision of the Rhysodini of the world. The first part consists of a new classification to the level of subgenus, a synopsis of the new subgenus Nitiglymius, a glossary of morphological terminology peculiar to the study of Rhysodini, and the bibliography for the entire series. Illustrations are provided for the taxonomic characters used in the definition of subtribes, genera, and subgenera, and for distinguishing the species of Nitiglymius. A habitus drawing illustrates each genus and subgenus.

The species are arranged in five subtribes and 18 genera as follows. I. Subtribe LEOGLYMIINA: Genus Leoglymius NEW GENUS, type—L. lignarius (Olliff), three spp., Australia. II. Subtribe DHYSORINA: three genera, Tangaroa NEW GENUS, Type—T. Pensus (Broun), one sp., New Zealand; Dhysores Grouvelle, type—D. thoreyi (Grouvelle), four spp., Africa; Neodhysores NEW GENUS, type—N. seximpressus NEW SPECIES, two spp., Brazil. III Subtribe RHYSODINA: three genera Rhysodes Dalman, type—R. sulcatus (Fab.), two spp., Palaearctic; Kupea NEW GENUS, type—K. arcuatus (Chevrolat), one sp., New Zealand; Kaveinga NEW GENUS, type—K. abbreviata (Lea), seven spp., New Zealand, New Caledonia, Australia, New Guinea. IV. Subtribe CLINIDIINA: three genera, Grouvellina NEW GENUS, type—G. tubericeps (Fairmaire), four spp., Madagascar; Rhysodiastes Fairmaire, type—R. parumcostatus (Fairmaire), 22 spp., Neotropical, Australian, South Pacific, and Oriental Regions; Clinidium Kirby, type—C. guildingii Kirby, 41 spp., Holarctic and Neotropical. V. Subtribe OMOGLYMIINA: eight genera, Xhosores NEW GENUS, type—X. figuratus (Germar), one sp., South Africa; Yamatoa Bell, type—Y. niponensis (Lewis), seven spp., Oriental; Shyrodos Grouvelle, type—S. dohertyi (Grouvelle), one sp., Burma; Srimara NEW GENUS, type—S. planicollis NEW SPECIES, one sp., Viet Nam; Arrowina NEW GENUS, type—A. taprobane (Fairmaire), four spp., Oriental; Plesioglymius NEW GENUS, type—P. elegans (Grouvelle), two spp., Oriental, Neotropical; Pyxiglymius NEW GENUS, type—P. strabus (Newman), nine spp., Oriental; Omoglymius Ganglbauer, type—O. germari (Ganglbauer), 43 spp., nearly world wide.

Five subgenera of Omoglymius are recognized: Hemiglymius NEW SUBGENUS, type—O. africanus (Grouvelle), nine spp., Africa, Oriental, and New World; Orthoglymius NEW SUBGENUS, type—O. sulcicollis (Lewis), nine spp., Oriental; NEW SUBGENUS, type—C. curvicosta Chevrolat, four spp., West Indies; Arctoclinidium Bell, type—C. sculptile (Newman), 10 spp., Holarctic; Clinidium s. str., 23 spp., Neotropical.

Five subgenera of Omoglymius are recognized: Hemiglymius NEW SUBGENUS, type—O. africanus (Grouvelle), seven spp., Africa, Oriental, and Neotropical; Orthoglymius NEW SUBGENUS, type—O. sulcicollis (Lewis), nine spp., Oriental; Navitia, NEW SUBGENUS, type—O. intrusus (Grouvelle), one sp., Fiji; Nitiglymius NEW SUBGENUS, type—O. fulgens, NEW SPECIES, seven spp., Fiji, Solomons, New Guinea; Omoglymius s. str., 19 spp., Holarctic, S. Pacific, Oriental.

The following new species are described: Neodhysores seximpressus, Srimara planicollis, Clinidium (Protainoa) extrarium, and seven species in Omoglymius, subgenus Nitiglymius, O. fulgens, O. lustrans, O. toxopei, O. hornabrooki, O. offafinus, O. zimmermani, and O. greensladei.

Yamatoa longior (Grouvelle) is changed from a subspecies to a full species, while the following names, formerly synonymized, are ranked as species: Kaveinga orbitosa (Broun), Rhysodiastes parumcostatus (Fairmaire), R. liratus (Newman), Pyxiglymius armatus (Arrow). Clinidium allegheniense georgicum Bell and Bell is synonymized with C. apertum Reitter, and C. turquinense Bell with C. chevrolati Reitter.

Cet article est la première d'une série qui constitueront une revue taxonomique des Rhysodini du monde. La première partie est composée d'une nouvelle classification au niveau de sous-genre, d'un résumé du nouveau sous-genre Nitiglymius, d'un glossaire de la terminologie morphologique propre à l'étude des Rhysodini, et de la bibliographie de la série complet. Nous fournissons des illustrations des caractères que nous employons pour les définitions des sous-tribus, des genres, et des sous-genres, et pour la séparation des espèces des Nitiglymius. Une illustration démontre l'aspect typique de chaque genre ou sous-genre.

La tribu se partage parmi cinq sous-tribus et dix-huit genres de cette façon. I. Sous-tribu LEOGLYMIINA: Genre Leoglymius, NOUVEAU GENRE, type—L. lignarius (Olliff), trois spp., Australie. II. Sous-tribu DHYSORINA: trois genres,

Tangaroa NOUVEAU GENRE, type—T. pensus (Broun), une sp., Nouvelle Zélande; Dhysores Grouvelle, type—D. thoreyi (Grouvelle), quatre spp., Afrique; Neodhysores NOUVEAU GENRE, type—N. seximpressus NOUVELLE ESPÈCE, deux spp., Brésil. III. Sous-tribu RHYSODINA: trois genres, Rhysodes Dalman, type—R. sulcatus (Fab.), deux spp., Paléarctique; Kupea NOUVEAU GENRE, type—K. arcuatus (Chevrolat), une sp., Nouvelle Zélande; Kaveinga NOUVEAU GENRE, type—K. abbreviata (Lea), sept spp., Nouvelle Zélande, Nouvelle Calédonie, Australie, Nouvelle Guinée. IV. Sous-tribu CLINIDIINA: trois genres. Grouvellina NOUVEAU GENRE, type—G. tubericeps (Fairmaire), quatre spp., Madagascar; Rhyzodiestes Fairmaire, type—R. parumcostatus (Fairmaire), 22 spp., Région Neotropicale, Australie, Sud Pacifique, et Région Orientale; Clinidium Kirby, type—C. guildingii Kirby, 41 spp., Régions Holarctique et Neotropical. V. Sous-tribu OMOGLYMMIINA: huit genres, Xhosores NOUVEAU GENRE, type—X. figuratus (Germar), une sp., Sud Afrique; Yamatoa Bell, type—Y. niponensis (Lewis), sept spp., Orientale; Shyrodos Grouvelle, type—S. doherityi (Grouvelle), une sp., Birmanie; Srimara NOUVEAU GENRE, type—S. planicollis NOUVELLE ESPÈCE, une sp., Viet Nam; Arrowina NOUVEAU GENRE, type—A. taprobanae (Fairmaire), quatre spp., Orientale; Plesio gymmius NOUVEAU GENRE, type—P. elegans (Grouvelle), deux spp., Orientale, Néotropical; Pyxiglymmius NOUVEAUX GENRE, type—P. strabus (Newman), neuf spp., Orientale; Omoglymmius Ganglbauer, type—O. germari (Ganglbauer), 43 spp., presque mondial.

Clinidium se divise parmi cinq sous-genres: Mexiclinidium NOUVEAUX SOUS-GENRE, type—C. mexicanum Chev., trois spp., Mexique, Guatemala; Protainoa NOUVEAUX SOUS-GENRE, type—C. extrarium NOUVELLE ESPÈCE, une sp., probablement Mexique; Tainoa NOUVEAU SOUS-GENRE, type—C. curvicosta Chevrolat, quatre spp., Indes Occidentales; Arctoclinidium Bell, type—C. sculptile (Newman), dix spp., Holarctique; Clinidium s. str., 23 spp., Néotropical.

Omoglymmius se divise parmi cinq sous-genres: Hemiglymmius NOUVEAU SOUS-GENRE, type—O. africanus (Grouvelle), neuf spp., Afrique, Orientale, Nouveau Monde; Orthoglymmius NOUVEAU SOUS-GENRE, type—O. sulcicollis (Lewis), neuf spp., Orientale; Navitia NOUVEAU SOUS-GENRE, type—O. intrusus (Grouvelle), une sp., Fiji; Nitiglymmius NOUVEAU SOUS-GENRE, type—O. fulgens NOUVELLE ESPÈCE, sept spp., Fiji, Îles Solomons, Nouvelle Guinée; Omoglymmius s. str., dix-sept spp., Holarctique, Îles du Sud Pacifique, Orientale.

Nous décrivons ces nouvelles espèces: Neodhysores seximpressus, Srimara planicollis, Clinidium (Protainoa) extrarium, et sept espèces du genre Omoglymmius, sous-genre Nitiglymmius, O. fulgens, O. lustrans, O. toxopei, O. hornabrooki, O. offafinus, O. zimmermani, et O. greensladei.

Nous changeons Yamatoa longior (Grouvelle) d'une sous-espèce à une espèce, et ces nommes, autrefois regardés comme synonymes, nous regardons comme espèces: Kaveinga orbitosa (Broun), Rhyzodiestes parumcostatus (Fairmaire), R. liratus (Newman), Pyxiglymmius armatus (Arrow). Nous découvrons que Clinidium allegheniense georgicum Bell et Bell est un synonyme de C. apertum Reitter, et C. turquinense Bell est un synonyme de C. chevrolati Reitter.

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INTRODUCTION

The Rhysodini have traditionally been regarded as a small independent family, Rhysodidae. At first they were classified with superficially similar wood- and bark-inhabiting families of the Suborder Polyphaga, such as the Colydiidae. Later authors recognized that Rhysodidae should

be placed in Suborder Adephaga, as shown in the larva by the six-segmented leg, and in the adult by the interruption of the first visible sternum by the hind coxae, the character of the venation of the hind wing, and the presence of a notopleural suture on the prothorax. Only one of the usual diagnostic features of Adephaga is absent: there are no separate prothoracic pleura, since the sternopleural suture is not evident. (Shallow grooves in some species occupy the sites of the sternopleural sutures, but are not true sutures.) Thus Rhysodini have the prothoracic pleura united to the prosternum in contrast to polyphagous beetles, which have them fused to the pronotum.

Bell and Bell (1962) concluded that Rhysodini are a highly specialized group of ground beetles (Carabidae), and should not have family status unless the other major groups of ground beetles are given the same rank. Some authors reject this hypothesis; others accept it. Forsyth (1972) has found additional supporting evidence in structural features of the pygidial glands. At the moment, there is no consensus on the limits of the subfamilies of Carabidae, so we prefer, at the present, to give the Rhysodini the rank of tribe, and to leave open the question of its placement among the subfamilies.

World revisions of the Rhysodini have been published by Grouvelle (1903) and Arrow (1942), while Hincks (1950) produced the most recent catalogue of species. Bell (1970) reviewed the North American, Central American, and West Indian species. Brinck (1965) reviewed the South African species, Dajoz (1975), the European ones, while Vulcano and Pereira (1975a, 1975b) revised the South American ones. B.P. Moore is planning to revise the Australian species.

Descriptions in the works of previous authors are almost invariably too incomplete and superficial to allow the recognition of their species, and almost none of them included illustrations. In the course of a sabbatical leave, my wife and I have been able to study and illustrate almost all of the extant type specimens in the group. In addition, we have found many undescribed species from almost all parts of the world, actually outnumbering the described species.

This present work is planned as the first of a series. It contains a new classification for the tribe, to the level of subgenus. The placement of all previously described species in this classification is indicated, except for the following, of which the types are lost or inaccessible, namely, *Rhysodes ichthyocephalus* Lea (1904), *Rhysodes planatus* Lea (1904), and *Rhysodes punctolineatus* Grouvelle (1903). In addition, several new species have been described to serve as the type species of new higher taxa which contain no previously known species. The subgenus *Nitiglymmius* is treated in full, since none of its seven species have been previously described.

Future parts of this work will include reviews of the genera, including redescriptions and illustrations of most previously described species as well as descriptions of many new species. This will be followed by a complete review of the comparative morphology, phylogeny and zoogeography of the group.

The higher classification in current use is that of Grouvelle (1903). He recognized two genera, *Rhysodes* Dalman 1823 and *Clinidium* Kirby 1835. He divided each genus into subgenera, *Rhysodes* into *Rhysodes sensu stricto*, *Omoglymmius* Ganglbauer 1892, *Dhysodes* Grouvelle 1903, and *Shyrodes* Grouvelle 1903; and *Clinidium sensu stricto*, and *Rhyzodiastes* Fairmaire 1895. Arrow (1942) followed Grouvelle's classification exactly, but substituted informal species-group names for the subgenera recognized by Grouvelle.

Our studies indicate that the system of Grouvelle is not natural, and hence his classification is not valid. In particular, his concept of subgenus *Omoglymmius* contains groups which are not closely related to one another. One group of species is clearly related to *Clinidium*, another is related to *Shyrodes*, and a third contains the most isolated and most primitive of living Rhysodini. Accordingly, we propose a new classification containing five subtribes and 18 genera. This may seem to be a radical departure. However, previous studies have been extremely

superficial, and have failed to reveal the extent of structural divergence within the tribe. Profound differences in head and eye structure, in elytral striation, in number of tibial spurs, in genitalia, and in antennal chaetotaxy, are quite comparable to intergeneric differences in other groups of beetles.

Bell proposed elevation of *Omoglymmius* to the rank of genus, (1975) and the separation of certain species as the new genus *Yamatoa* (1977). Both of these changes were forced by publication deadlines for regional faunas. To avoid further instability in the nomenclature, we present here the entire new classification at once, without waiting to complete the work at the species level. Table 1 is a classified list of taxa from subtribe to subgenus.

Table 1. List of subtribes, genera, and subgenera of the tribe Rhysodini.

LEOGLYMMIINA	<i>Clinidium</i> (Cont.)
<i>Leoglymmius</i> , new genus	<i>Arctoclinidium</i> Bell, 1970
DHYSORINA	<i>Clinidium</i> (<i>sensu stricto</i>)
<i>Tangaroa</i> , new genus	OMOGLYMMIINA
<i>Dhysores</i> Grouvelle, 1903	<i>Xhosores</i> , new genus
<i>Neodhysores</i> , new genus	<i>Yamatoa</i> Bell, 1977
RHYSODINA	<i>Shyrodes</i> Grouvelle, 1903
<i>Rhysodes</i> Dalman, 1823	<i>Srimara</i> , new genus
<i>Kupea</i> , new genus	<i>Plesioglymmius</i> , new genus
<i>Kaveinga</i> , new genus	<i>Arrowina</i> , new genus
CLINIDIINA	<i>Pyxiglymmius</i> , new genus
<i>Grouvellina</i> , new genus	<i>Omoglymmius</i> (<i>sensu lato</i>) Ganglbauer, 1892.
<i>Rhizodiastes</i> Fairmaire, 1895	<i>Hemiglymmius</i> , new subgenus
<i>Clinidium</i> (<i>sensu lato</i>) Kirby, 1835	<i>Navitia</i> , new subgenus
<i>Mexiclinidium</i> , new subgenus	<i>Orthoglymmius</i> , new subgenus
<i>Protainoa</i> , new subgenus	<i>Omoglymmius</i> (<i>sensu stricto</i>)
<i>Tainoa</i> , new subgenus	<i>Nitiglymmius</i> , new subgenus

SOURCES OF MATERIAL

The following abbreviations designate collections cited in Part I of this series. The names of the curators appear in parentheses.

AMNH	American Museum of Natural History, New York (L. Herman)
BMNH	British Museum, Natural History, London (R. Pope)
BPBM	Bernice P. Bishop Museum, Honolulu (G. Samuelson)
BSL	Naturhistorisches Museum, Basel (W. Wittmer)
LEI	Rijksmuseum von Natuurlijke Historie, Leiden (J. Krikken)
MCZ	Museum of Comparative Zoology, Harvard, Cambridge (J. Lawrence)
NMNZ	National Museum of New Zealand, Wellington (R. Ordish)

TAXONOMIC METHODS

The Rhysodini present special difficulties to the practitioner of twentieth-century taxonomic methods. The specimens borrowed by us include at least 175 unnamed species. Most previously described and new species are represented by few specimens, and many are represented only by a single specimen or a pair of specimens. With such limited material it was not possible to study the internal genitalia or the hind wings of every species. We limited dissections to species represented by good series. Consequently, we can merely suggest the phylogenetic affinities

which the genitalia seem to suggest, and cannot use them within a genus or subgenus. Fortunately, the Rhysodini have elaborate secondary sexual differences, which are useful in recognizing closely related species, and thus substitute to some extent for genitalic characters.

The hind wings are difficult to study because the elytra lock very firmly to the abdomen, making it risky to attempt to separate them in old specimens. In those species which we have studied, there is a strong correlation between development of eyes and hind wings. Among those studied so far, all specimens which have reduced and modified eyes also have vestigial hind wings. Wing dimorphism is unknown among Rhysodini.

The paucity of specimens is not easily corrected. Presence of a rhysodine species in a particular area cannot be regarded as certain until two specimens, independently collected, are known. Less than half of the known species meet this standard. Rhysodines are rare and secretive insects. Many are restricted to old, undisturbed forests with very large trees. Some rhysodines have probably been extirpated by reckless cutting of tropical forests in the past few decades, and many more are threatened. Many endangered species are located in politically unstable areas, where further collecting is impossible. Some undescribed single specimens from the nineteenth century may represent species already extinct. If we were to exclude all such forms, or all forms with vague or questionable locality data, the result would be a false picture of the divergence and diversity of the tribe. We will name and describe all clearly distinct species whatever the status of the locality data. Probably most of the nineteenth century specimens have correct labels, as far as they go. A few doubtful cases are discussed where appropriate.

Color is of no help in distinguishing species of Rhysodini. In the field, almost all specimens appear dark reddish brown to black. Under the microscope with a good light, the same specimens look more or less rufous. There is a good deal of variation, even with a single series of specimens and it seems probable that each individual darkens slowly through its adult life, though light red or yellowish specimens are certainly tenerals. Since color is rarely of help, we have usually omitted it from the descriptions. In many brachypterous species, the cornea of the eye becomes pigmented in darker (presumably older) specimens, and in the extreme, the eye may become completely opaque. All rhysodines currently known appear to have functional eyes, at least as young adults.

The unique structure of these beetles has forced rhysodine taxonomists to coin many new terms. A general introduction to morphology of rhysodines is in Bell (1970). We intend to give a fuller treatment to the subject in later parts of this monograph. In the interim, we provide below a glossary of terms which might not be known by a general coleopterist, or which have a special meaning when applied to Rhysodini.

GLOSSARY

Angular setae (Fig. 4) – one or two setae (in few specimens) located at or near the posterior angle of the pronotum. The angular seta is not included in counts of marginal setae.

Antennal groove (Figs. 1, 2) – a groove medial to the head margin above the antenna, and separating the antennal lobe from the temporal lobe.

Antennal lobe (Fig. 2) – a lobe on the dorsal surface of the head, dorsad to the base of the antenna.

Antennal rim – the elevated margin of the head dorsad to the antennal base; homologous to an antennal lobe, but not lobe-like in character, forming a sharp linear elevation.

Anterior lateral pit (Fig. 5) – one of a pair of pits near the anterior margin of the pronotum; in those specimens with complete paramedian groove, located at the anterior ends of these grooves.

Anterior median pit (Fig. 4) – a pit at the anterior end of the median groove of the pronotum

usually marked by a broadening of the median groove.

Anterior tentorial pits (Fig. 15C) – a pair of pits on the dorsal surface of the head, just anterior to the bases of the antennae. The morphological identity of these pits is obscured by the absence of a clypeal suture.

Apical setae (Fig. 9) – the circle of large setae near the apex of each antennal segment.

Apical striole (Fig. 10) – a short fragment of a stria on the outer face of the apical tubercle of the elytron. It usually appears as a curved row of punctures arising from the marginal stria, and curving back towards it distally. Compare with *partial stria*.

Apical teeth – non-articulated pointed processes at the distal end of the tibiae. The anterior tibia has an anterior and a posterior apical tooth, with the tarsus arising between them.

Apical tubercle (Figs. 10, 11) – an elevated region along the lateral margin of the elytron near the apex, bounded medially by the subapical impression.

Basal impression (Figs. 4, 5) – a depressed area near the base of the pronotum, just medial to the posterior angle. Compare with *discal striole*, *paramedian groove*.

Basal setae (of antennae) (Fig. 9) – a circle of large setae located proximad to the apical setae on certain antennal segments. When only one series of large setae is present, it represents the apical setae.

Basal setae (of pronotum) – setae on the posterior margin of the pronotum medial to the basal impression.

Basilateral lobe (Fig. 4) – in those species which do not have paramedian grooves, the portion of the pronotal disc lateral to the basal impression.

Beard – a densely setose area on the mentum, near the midline, and well back from the anterior margin.

Calcar (Fig. 49) – a process or angle on the medial side of the apex of the tibia of the middle or hind leg in male Rhysodini, and the most convenient means of determining the sex of specimens.

Carina (of pronotum) (Fig. 5) – one of four elevated ridges on the pronotum of those species which have complete paramedian grooves. These ridges are rounded or flattened, and are not carinae in the usual sense of the word, though they have been so termed in the literature on Rhysodini.

Cauda (Fig. 11) – a lobe at the tip of the elytron formed by a projection from each elytron.

Cleaning organ – a comb of setae located on the medial surface of the anterior tibia, and probably used to groom the antennae (as is the homologous structure in other Carabidae).

Cone (Fig. 8) – the distal portion of the eleventh antennal segment, largely or entirely covered by minor setae.

Corpus (Fig. 8) – the main part of an antennal segment, excluding its articulating condyle, and in the case of the eleventh segment, also excluding the cone.

Discal striole (Fig. 4) – a more or less linear anterior prolongation of the basal impression of the pronotum.

Frontal groove (Fig. 1) – one of a pair of grooves extended anteriorly from the frontal space, separating the median lobe from the temporal lobes.

Frontal pit – a deep depression in the dorsal surface of the head between the temporal lobes, usually partly concealed in dorsal view by the tip of the median lobe and the medial angles of the temporal lobe.

Frontal space (Fig. 1) – the visible external opening of the frontal pit, bounded anteriorly by the median lobe, laterally by the temporal lobes, and limited posteriorly by the medial angles of the temporal lobes.

Gular groove (Fig. 3) – one of a pair of grooves which separate the genae from the mentum. They converge posteriorly, almost meeting at the neck.

Gular tubercle (Fig. 3) – a median tubercle between the posterior ends of the gular grooves.

Humeral tubercle – a tooth-like or shelf-like projection from the anterior lateral angle of the elytron.

Inner carina (Fig. 5) – the elevated ridge lying between the median groove and one of the paramedian grooves of the pronotum.

Intercostal pit – median pit on prosternal process.

Intermediate tooth – a tooth located near the proximal end of the cleaning organ. Easily mistaken for the proximal tibial spur which, if present, is located in the same vicinity.

Lateral pit – a concavity on each side of an abdominal sternum, usually restricted to females. In some species, at least, the hind calcars of the male are inserted into the lateral pits during mating. In some species lateral pits occur in both sexes and appear to accommodate the apex of the hind femora when the beetle is in a tight place.

Marginal carina – the narrow raised rim laterad to the marginal groove of the pronotum, or between the inner and outer marginal grooves, when both are present.

Marginal groove (Fig. 4) – an impressed line just medial to the lateral margin of the pronotum. In some groups there are two grooves (an outer and an inner one), and the marginal carina lies between them.

Marginal setae – setae located along the marginal groove of the pronotum. In counting them, the angular seta is not included.

Marginal stria (Fig. 10) – the most lateral true stria of the elytron, passing along the lower margin of the apical tubercle to the elytral suture, where it usually joins the first, or sutural stria. There may appear to be additional striae ventral to the marginal stria. The dorsal boundary of the reflexed epipleural margin usually looks like a stria, and there is often a short stria-like depression between it and the marginal stria in the humeral region. The true marginal stria may be identified by its relationship with the apical tubercle and the sutural stria. The marginal stria is an important landmark, because the numbering of the striae is confusing, since striae tend to be lost from the more medial part of the elytron. If the striation has not been reduced, the marginal stria will be the seventh one from the suture.

Medial angle (Fig. 2) – a projecting angle or point on the medial margin of the temporal lobe.

Median groove (Fig. 4) – the sulcus in the midline of the pronotum, containing the anterior and posterior median pits.

Median lobe (Fig. 1) – the convex area in the midline of the head, extending from the clypeus to the frontal space, and separated from the temporal lobes by the frontal grooves and from the antennal lobes by the postclypeal grooves.

Metasternal pit – a pit in the midline of the metasternum just anterior to the first abdominal sterna.

Metasternal sulcus – a median groove extending the entire length of the metasternum, found in only a few species.

Minor setae (Figs. 6–8) – a group of many short setae on the antennae; much shorter and more numerous than the apical or basal setae; minor setae are generally distributed on the cone of Segment XI, but the pattern on the more proximal segments forms a series of valuable taxonomic characters.

Occipital angle (Fig. 2) – an angle on the posteriomedial margin of the temporal lobe, posterior to the medial angle, and often ill-defined.

Orbital groove (Fig. 1) – a groove on the lateral margin of the temporal lobe, just medial to the upper edge of the eye, and often appearing as a posterior continuation of the antennal groove.

Outer carina (Fig. 5) – the elevated ridge between the paramedian groove and the marginal

groove of the pronotum.

Parafrontal boss (Fig. 2) – an isolated convex glabrous area lateral to the median lobe and medial to the antennal lobe, separated from the temporal lobe by the postantennal groove, from the antennal lobe by the antennal groove, and from the median lobe by the postclypeal groove.

Paramedian groove (Fig. 5) – a groove extending from the anterior to the posterior margin of the pronotum about halfway between the median groove and the lateral margin, and separating the inner carina from the outer carina. The most posterior portion is deepened to form the basal impression.

Partial stria (in *Clinidium*, subgenus *Tainoa*) (Fig. 31) – a short stria in the apical half of the elytron, between the first and second fully developed striae. Compare with *apical striole*.

Pilosity – a fine, dense covering of very short hairs, in which the separate hairs are clearly visible at low magnification.

Pollinosity – a covering of very minute hairs which are so small as to be indistinguishable at low powers of magnification. Pollinose areas look “frosted” or “waxy”. Pollinosity grades into pilosity as the hairs become larger.

Postantennal groove (Fig. 2) – a short groove extended obliquely from the frontal groove to the head margin, at the junction of the antennal and orbital grooves; present in only a few species, where it separates the parafrontal boss from the temporal lobe.

Postantennal pit (Fig. 15C) – a pit at the junction of the antennal and orbital grooves, near the lateral margin of the head between the base of the antenna and the eye. It is conspicuous in only a few species.

Postclypeal groove (Fig. 1) – a groove extended posteriorly from the anterior tentorial pit to the junction of the frontal groove and the antennal groove, and separating the antennal lobe from the median lobe.

Posterior lateral pit – a small, deep pit in the posterior part of the paramedian groove, or in the basal impression; it extends ventromedially into the posterior end of the inner carina.

Posterior median pit (Fig. 4) – a pit at the posterior end of the median groove of the pronotum, usually marked by a broadening of the median groove.

Posterior tentorial pit (Fig. 3) – a pair of pits on the ventral surface of the head at the anterior end of the gular groove.

Postlabial setae (Fig. 3) – 1–3 pairs of prominent setae on the mentum well behind the anterior margin. Compare *beard*.

Postorbital tubercle (Figs. 3, 62C) – a prominence on the posterior side of the head, best seen in lateral view, directly posterior to the eye. Compare *suborbital tubercle*.

Precoxal carina – a short ridge extended anteriorly across the prosternum from the coxal cavity towards the anterior margin.

Precoxal setae – setae anterior to the coxa of the front leg.

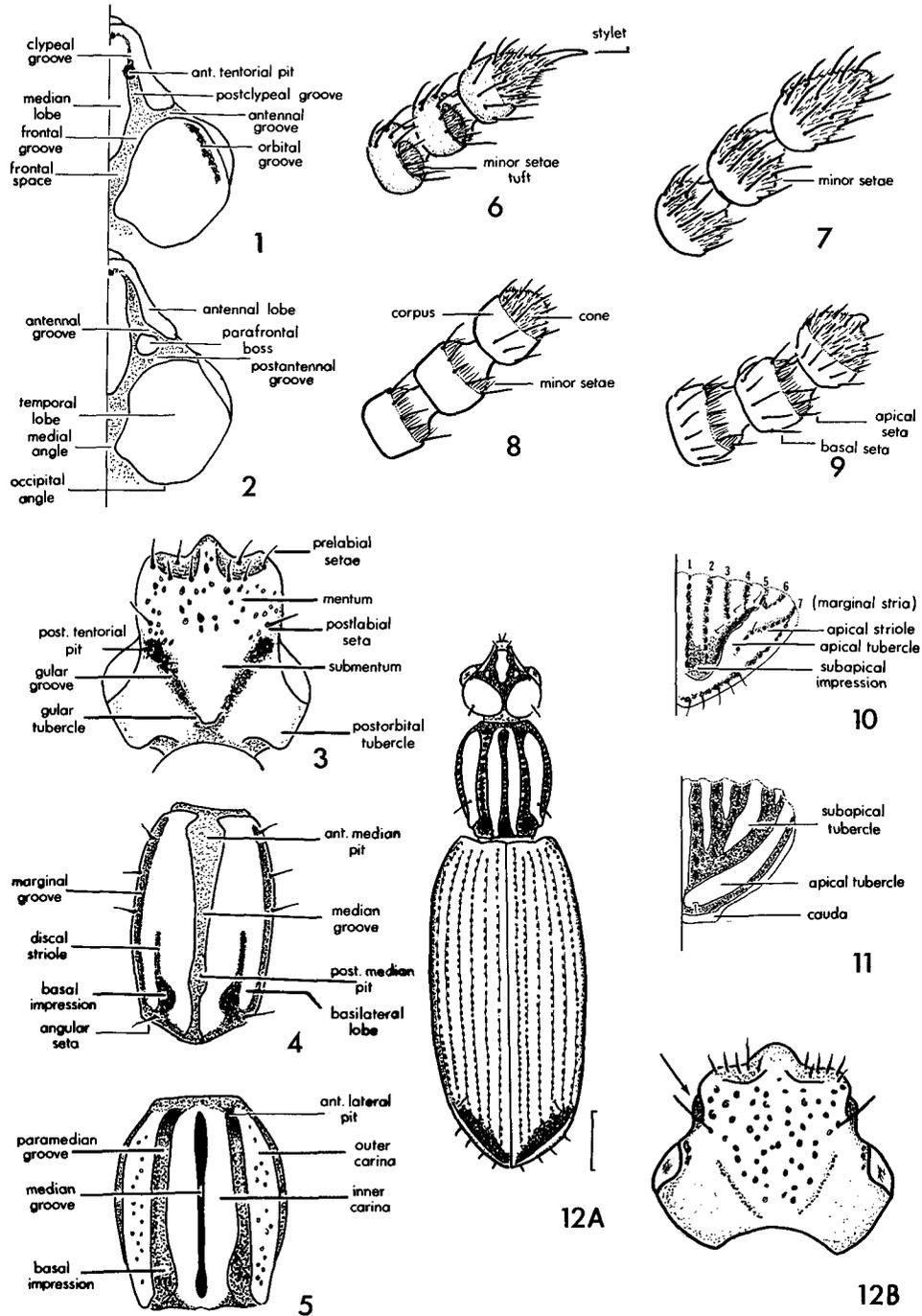
Prefrontal pit (Fig. 15C) – one of a pair of pits on either side of the midline anterior to the frontal space; found only in specimens of genera which lack frontal grooves.

Prelabial setae (Fig. 3) – a group of setae along the anterior margin of the mentum. Compare *beard* and *postlabial setae*.

Proximal tooth – a tooth on the medial margin of the anterior tibia distinctly proximad to the cleaning organ. Compare *intermediate tooth*.

Scarp – a vertical surface separating two horizontal surfaces at different levels. In all Rhyso-dini there is a distinct basal scarp on the elytron. In *Srimara* there is also a basal scarp on the pronotum.

Spur – an articulated, spine-like structure at the tip of a tibia. In Rhyso-dini there may be difficulty in distinguishing tibial spurs from teeth, which are solid outgrowths of the tibia



Figs. 1,2, head, dorsal aspect, diagrammatic. Fig. 3, head, ventral aspect, diagrammatic. Figs. 4,5, pronotum, dorsal aspect, diagrammatic. Figs. 6-9, Antennal Segments IX-XI, ventral aspect-Fig. 6, *C. (Clinidium) incis* Bell. Fig. 7, *Leoglymmius* species. Fig. 8, *O. (Omoglymmius) germari* Ganglbauer. Fig. 9, *Omoglymmius (Hemiglymmius)* species. Figs. 10, 11, right elytron, posterior-dorsal aspect-Fig. 10, *Rhysodes sulcatus* (Fabricius). Fig. 11, *Clinidium (Arctoelidium) baldufi* Bell. Fig. 12. *Leoglymmius* species: A, habitus, dorsal aspect; B, head, ventral aspect (arrow indicates suture separating gena from mentum).

itself, particularly on the anterior tibia.

Stylet (Fig. 6) — a needle-like or awl-like structure at the tip of the eleventh segment of the antenna. When well developed it is clearly a separate sclerite, perhaps a modified seta. When very small, it is had to distinguish from a sclerotized point on the cone.

Subapical impression (Fig. 10) — a deeply depressed area near the tip of the elytra, bounded laterally by the apical tubercle.

Subapical tubercle — (Fig. 11) — a tubercle medial to the apical tubercle, and separated from it by an impressed stria.

Submarginal striae — elytral striae located ventrad to the true marginal stria, belonging to elytral epipleuron, and not homologous to the true striae of other Coleoptera.

Suborbital tubercle — a prominence on the posterior surface of the head, best seen in lateral view, and located below the level of the eye. Compare *postorbital tubercle*.

Temporal lobe (Fig. 2) — the convex portion of the dorsal surface of the head located laterad to the frontal pit, and partly overhanging the neck and the frontal pit.

Temporal setae — setae located on the temporal lobe near its lateral margin. Homologous to the orbital setae of other Carabidae, but in Rhysodini some of them are far posterior to the eye, making the alternate name preferable.

Transverse sulcus — a transverse groove on one of the abdominal sterna. In most species, interrupted at the midline.

TRIBE RHYSODINI

Rhysodini are carabid beetles in which the antecoxal suture of the metasternum is absent, the hind coxae are small and widely separated, and the sternopleural suture of the prothorax is absent (though a shallow furrow may mark the site).

Adult: Antennae moniliform, each segment connected to preceding one by basal condyle; eye, in winged species, flattened, rounded, deeper than long, more conspicuous in lateral view; eye in brachypterous species, oval, crescentic, or resembling an ocellus or divided to form two ocellus-like structures; head constricted near base forming condyle-like neck; frons deeply concave forming frontal pit which is partially overlapped by medial and temporal lobes; mentum projecting anteriorly, concealing mouthparts ventrally, extending beyond mandibles in dorsal view, completely fused to submentum posteriorly, partially or completely fused to head capsule laterally; gular sutures absent posteriorly, represented by shallow diagonal grooves anterior to neck; ligula and maxillae completely concealed by mentum; palpi concealed except for tips; tips and sides of mandibles visible in dorsal view, only sides visible in lateral view; scrobal seta present on mandible; labrum small, triangular or rounded, bearing 1–2 pairs of setae.

Pronotum narrow, margin not reflexed; mesothorax elongate but only slightly narrowed, body thus subpedunculate; elytra narrowed, with eight or fewer striae; scutellar striole absent; scarp on base of elytron; anterior coxal cavities closed; mesocoxal and metacoxal cavities disjunct, lateral margin of metacoxal cavity more or less concealed by elytral epipleuron.

Abdomen with six visible sterna, suture between Sterna II and III obliterated; Sternum I connate with Sternum II, suture usually visible; Sterna IV–VI free.

Anterior tibia with pair of medially curved apical processes anterior and posterior to base of tarsus; well-developed cleaning organ present on medial surface, varying in position from opposite of base of tarsus to entirely distal to base of tarsus; spurs of anterior tibia completely absent in most species, when present, never entirely distal to cleaning organ; middle tibia with more or less distinct apical process bending medially at apex; male with calcars on hind tibia, usually also on middle tibia.

Larva: Body grub-like; urogomphi absent; most terga with pair of low tubercles bearing transverse row of denticles; terga soft, lightly sclerotized; labial palpi minute, one-segmented.

KEY TO SUBTRIBES

- 1 Minor setae of antennal Segments V–X arranged in broad bands encircling distal third of segment (Fig. 7); mentum separated from ventral lobe of gena by distinct suture in its anterior half (Fig. 12B) subtribe Leoglymniina, p. 53

- 1' Minor setae more restricted, either reduced to single circle near apex of segment, or restricted to row or tuft on ventral surface and absent dorsally (in a few species, absent) (minor setae of Segment XI not restricted); mentum entirely fused to gena laterally 2
- 2 (1') Median lobe of head elongate, extended to neck constriction, temporal lobes entirely separated subtribe Rhysodina, p. 56
- 2' Median lobe not extended to neck, temporal lobes not entirely separated. 3
- 3 (2') Minor setae of antennal segments (except of Segment XI) in form of complete circle near apex of segment (Fig. 8). 4
- 3' Minor setae (except on Segment XI) confined to tuft on ventral surface (Fig. 6) or absent subtribe Clinidiina, p. 59
- 4 (3) Median lobe not defined; frontal opening rounded, pore-like; no frontal grooves (Figs. 13B, 14B, 15C) subtribe Dhysorina, p. 53
- 4' Median lobe with at least tip well defined; frontal grooves well developed or if ill-defined, frontal opening crescentic, with tip of median lobe projected into it subtribe Omoglymmiina, p. 66

SUBTRIBE LEOGLYMMIINA

Description.— Habitus and sculpture of dorsum as in Fig. 12A. Minor setae of antennal Segments V–X on broad bands encircling distal third or half of each segment; antennal Segment XI without stylet (Fig. 7); median head lobe short, convex; distinct parafrenal boss on each side of it; temporal lobes convex, oval, strongly convergent posteriorly; eye large, well developed; anterior part of gena separated from mentum by distinct suture (Fig. 12B); paramedian grooves of pronotum complete; prosternum with densely setose area near middle; elytral striation complete; Stria VII marginal; apical striole absent; apex of elytron with a broad, opaque, flattened, densely microsculptured area, but without distinct subapical impression since apical tubercle is absent; middle and hind tibiae each with two nearly equal spurs; male with well-developed calcars; penis (Fig. 17) (studied in *L. lignarius*) cylindrical, with apical opening distinctly dorsal, well removed from tip, in form of well-marked apical lobe; internal sac distinct; two scroll-shaped ligulae.

This tribe contains only one genus, which is confined to Australia.

Leoglymmius new genus

(Figs. 7, 12A–B, 17)

Type species — *Rhysodes lignarius* Olliff 1885

Described species —

Leoglymmius blackburni (Grouvelle 1903) NEW COMBINATION

Leoglymmius lignarius (Olliff 1885) NEW COMBINATION

Leoglymmius trichosternus (Lea 1904) NEW COMBINATION

All species were originally described in *Rhysodes*, and *L. blackburni* and *L. lignarius* were assigned to subgenus *Omoglymmius* by Grouvelle. The generic name is an alteration of *Omoglymmius*, influenced by the name of Arthur Lea, who described most of the known Australian species of Rhysodini.

SUBTRIBE DHYSORINA

Description.— Minor setae in a subapical circle (1 hair in width) on each of outer segments, except for Segment XI, where they are more generally distributed; Segment XI without stylet; median head lobe not clearly defined, frontal grooves absent or represented only by vague depressions (Fig. 13B); frontal space small, pore-like, its anterior margin rounded; mentum entirely fused to gena laterally; pronotum without complete paramedian grooves, but with basal impression on each side, preceded in many specimens by discal striole; latter terminated in most specimens well behind anterior margin (but in *Neodhysores* nearly extended to anterior margin); elytral striae shallow, coarsely punctate; striation complete, apical striole well developed or partially effaced, Stria VII marginal; subapical impression of elytron usually indistinct (except for *Neodhysores*); Stria VI and VII effaced in humeral region; middle and hind tibiae each with two spurs.

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This group is equivalent to subgenus *Dhysores* of Grouvelle. It is clearly a Gondwanian group, with one genus each in Africa, South America and New Zealand.

KEY TO GENERA

- 1 Basal impression (including discal striole) less than 25% of length of pronotum; no trace of prefrontal pits; eye markedly reduced, longer than deep *Tangaroa* new genus, p. 54
- 1' Basal impression plus discal striole 55–95% of length of pronotum; prefrontal pits present, well developed in most specimens, eye large, deeper than long 2
- 2 (1') Prefrontal pits round to oval, separated from one another by at least the diameter of one of them; orbital groove distinct; pronotum with 0–1 marginal setae *Dhysores* Grouvelle p. 54
- 2' Prefrontal pits strongly oblique, close together, separated by less than half the length of one of them; pronotum with five marginal setae *Neodhysores* new genus, p. 56

Genus *Tangaroa* New Genus (Figs. 13A–C, 18)

Type species – *Rhysodes pensus* (Broun 1880)

Described species –

Tangaroa pensus (Broun 1880) NEW COMBINATION

Description.— Length 7–9 mm. Habitus and sculpture of dorsum as in Fig. 13A. Minor setae on antennal Segments VI–X; basal setae on Segments V–X; prefrontal pits absent (Fig. 13B); temporal setae absent; eye markedly reduced (Fig. 13C), with about 70 ommatidia, distinctly longer than deep; cornea thickened, unfacetted; basal impressions of pronotum short, curved, about 20% of pronotal length; pronotum without angular or marginal setae; hind wings reduced to small vestiges; penis (Fig. 18), internal sac complex, with large, truncate ligula, short for a rhysodine, with very well-developed apical lobe about 0.33 of length.

This genus is confined to the North Island of New Zealand. The generic name is that of the Polynesian god of the sea, and is masculine.

Genus *Dhysores* Grouvelle New Status (Figs. 14A–B, 19)

Dhysores Grouvelle 1903, p. 92 (as subgenus of *Rhysodes*)

Type species – *Rhysodes thoreyi* Grouvelle 1903 (designated by Hincks, 1950)

Described species –

Dhysores basilewskyi (Brinck 1965) NEW COMBINATION

Dhysores quadriimpressus (Grouvelle 1910) NEW COMBINATION

Dhysores rhodesianus (Brinck 1965) NEW COMBINATION

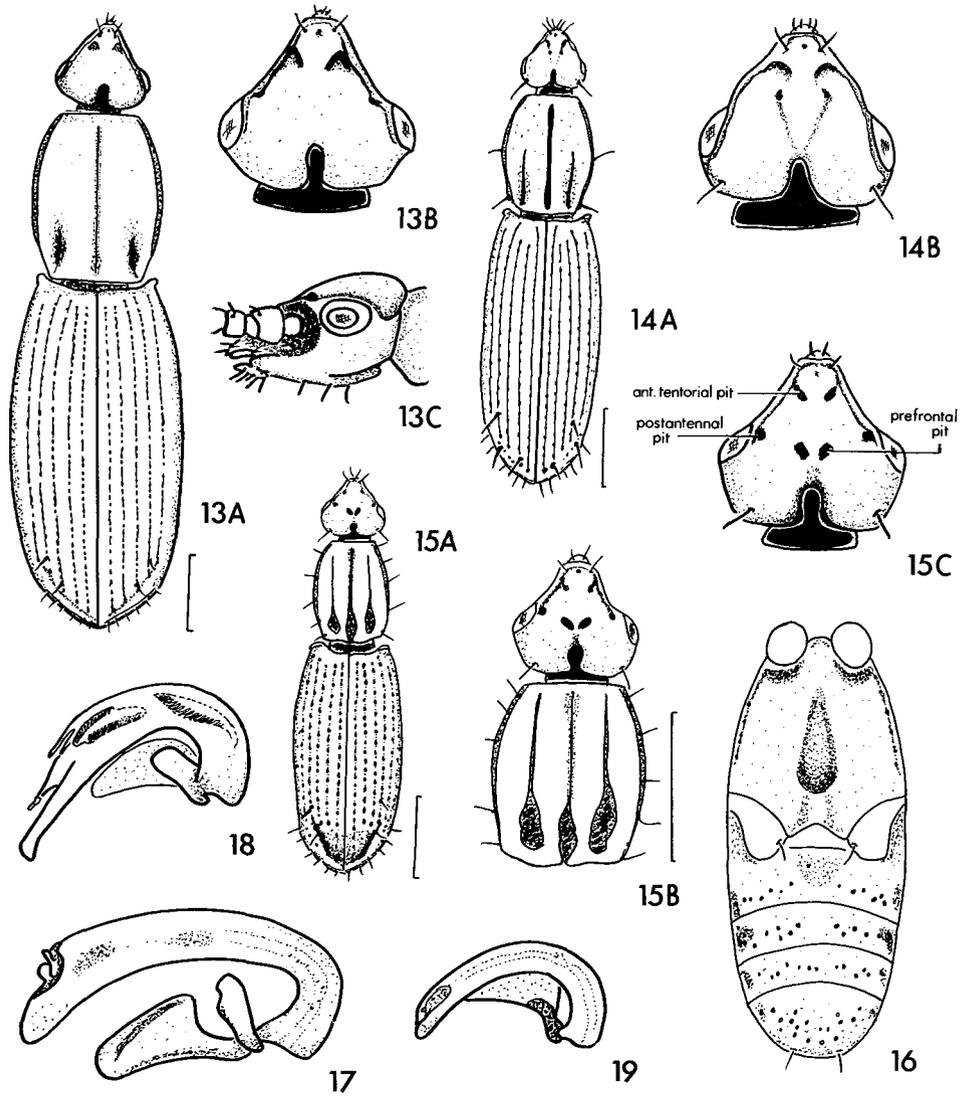
Dhysores thoreyi (Grouvelle 1903) NEW COMBINATION

All species were originally described in *Rhysodes*.

Description.— Habitus and sculpture of dorsum as in Fig. 14A. Minor setae on antennal Segments V–X; basal setae on Segments VI–X; head as in Fig. 14B, prefrontal pits normal or much reduced in some specimens, separated from one another by at least width of one of them, round, oval, or punctiform, but not oblique; postantennal pits small or absent; one temporal seta near posterior margin of eye; orbital groove well developed, extended to temporal seta; eye large, normal, deeper than long; pronotum as in Fig. 14A, basal impressions tapered gradually into discal strioles anteriorly; striole plus impression equal to 55–85% of length of pronotum; pronotum with angular seta and 0–1 marginal setae; hind wings in those species investigated fully developed.

Penis (investigated in an undescribed species) (Fig. 19) tubular, with distinct internal sac and small, curved ligula; apex at most slightly lobate. Brinck (1965) figures the penis of several species.

This genus is confined to Africa.



ILLUSTRATIONS OF ADULT LEOGLYMMIINA AND DHYSORINA. Fig. 13, *Tangaroa pensus* (Broun) A, habitus, dorsal aspect; B, head, dorsal aspect; C, head, lateral aspect. Fig. 14, *Dhysores thoreyi* (Grouvelle): A, habitus, dorsal aspect; B, head, dorsal aspect. Fig. 15–16, *Neodhysores seximpressus*, new species—Fig. 15, A, habitus, dorsal aspect; B, head and pronotum, dorsal aspect; C, head, dorsal aspect, enlarged. Fig. 16, metathorax and abdomen, ventral aspect. Fig. 17–19, Penis and parameres, right lateral aspect—Fig. 17, *Leoglymnius* species. Fig. 18, *Tangaroa pensus* (Broun) Fig. 19, *Dhysores* species.

Genus *Neodhysores* New Genus
(Figs. 15A–C, 16)

Type species – *Neodhysores seximpressus* NEW SPECIES

Described species –

Neodhysores schreiberi (Vulcano and Pereira 1975a) NEW COMBINATION

Neodhysores seximpressus NEW SPECIES

Description. – Habitus and sculpture of dorsum as in Fig. 15A. Minor setae of antenna on Segments VI–X (absent from Segment V), basal setae absent from antenna; head as in Fig. 15C, prefrontal pits large, oblique, close together, separated by only half of width of one of them; temporal seta far behind eye, near hind margin of head; orbital groove absent; eye large, normal, as deep as long; basal impression closed posteriorly, about 0.50 length of pronotum, deeply transversely rugosely punctate, sharply distinct from discal striole, latter linear, extended almost to anterior margin of pronotum (Fig. 15B); subapical impression of elytra much more distinct than in related genera; pronotum with angular and four or five marginal setae (Fig. 15B); penis and wing status not investigated.

Neodhysores seximpressus New Species

Type material – HOLOTYPE male, labelled: BRASILIEN, Nova Teutonia,
27° 11' B. 52° 23' L., X– 1939,

Fritz Plaumann (AMNH). The locality is in Santa Catarina State, in the far south of Brasil.

Description. – Length 5.0 mm; form relatively short and broad (Fig. 15A); antennal Segment XI about as wide as long, the cone short, rounded; postantennal pits large, round; anterior tentorial pits conspicuous, oblique; inner margin of temporal lobe subangulate (Fig. 15C); mentum with dense setiferous area in midline, and many scattered setae near anterior margin; pronotum (Fig. 15B) relatively short, $L/GW=1.28$, not much narrowed at base; median groove of pronotum punctate, dilated in basal fourth; discal strioles punctate; marginal groove of pronotum relatively deep, punctate; elytral striae coarsely, conspicuously punctate; Striae I–IV impressed; Stria V very shallowly impressed; Striae VI, VII represented only by punctures (except for slightly impressed tip of VII); Stria VII effaced in basal third; metasternum with large oval pit; sterna III–V each with single transverse row of very coarse punctures (Fig. 16); spurs of middle and hind tibiae conspicuously unequal, the posterior one almost twice as long as the anterior one.

The specific epithet refers to the six conspicuous pits on the dorsal surface of the head.

Neodhysores schreiberi (Vulcano and Pereira 1975a) New Combination

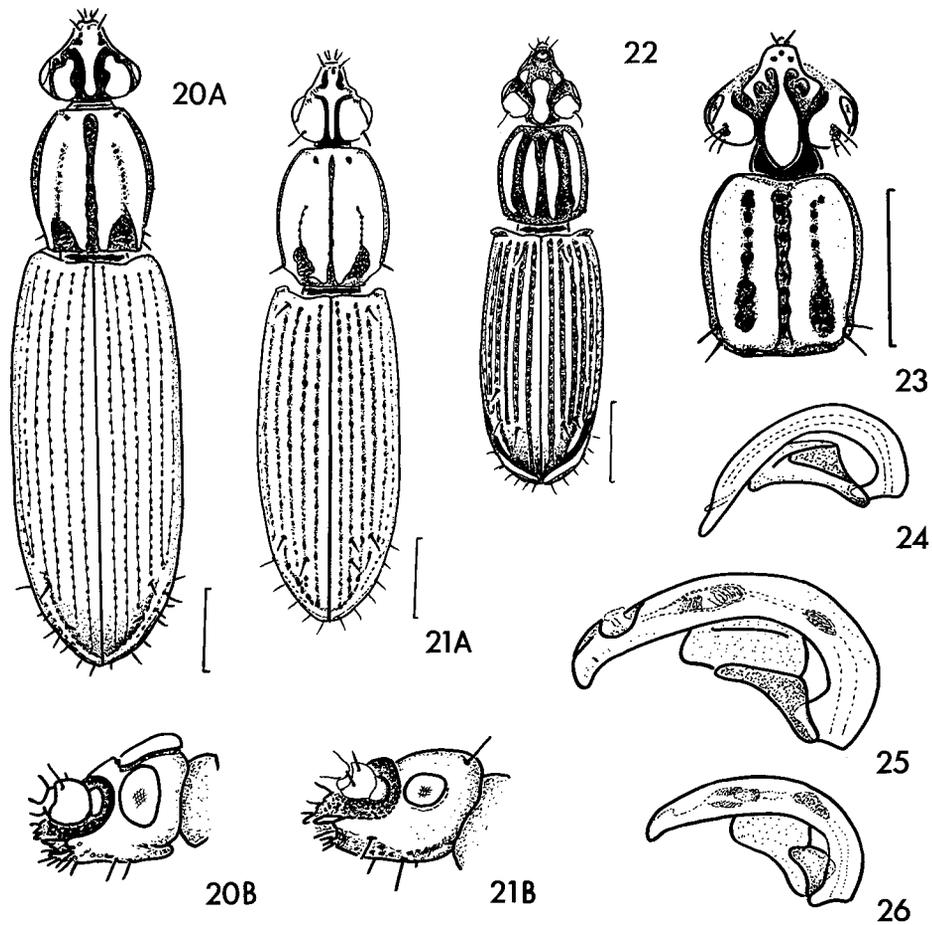
We have not been able to study this species. It evidently belongs to this genus, as can be seen from the detailed description and figures given by the authors, though they unfortunately did not describe the chaetotaxy. It evidently differs from *N. seximpressus* in the form of the antennal Segment XI, which is much longer than wide, and has a narrow, pointed cone. The body is also much longer and more slender, with the pronotum longer and narrower ($L/GW=1.43$), and more distinctly narrowed at the base.

N. schreiberi is known from Brasil, Minas Gerais, Belo Horizonte, further north than the known locality for *N. seximpressus*. The type and paratype are to be found in the collection of Vulcano and Pereira in the Biological Institute of São Paulo.

SUBTRIBE RHYSODINA

Description. – Minor setae of antennae in form of subapical ring on outer antennal segments (in few specimens slightly interrupted dorsally on several more proximal segments), more generally distributed on Segment XI; median lobe of head elongate, extended posteriorly to neck constriction, temporal lobes widely separated and frontal space divided into two parts, if latter developed; mentum fused to genae laterally; elytral striation complete; Stria VII marginal; spur of middle tibia large, curved medially, more or less fused to tibia and calcar-like; middle tibia without true calcar in male; hind tibia of male with small calcar and one spur.

This subtribe is found in the Palearctic and Australian Regions, and in the South Pacific Islands from New Zealand and New Caledonia to Mindanao and the Moluccas.



ILLUSTRATIONS OF ADULT RHYSODINA. Fig. 20, *Rhysodes sulcatus* (Fabricius): A, habitus, dorsal aspect; B, head, lateral aspect. Fig. 21, *Kupea arcuatus* (Chevrolat): A, habitus, dorsal aspect; B, head, lateral aspect. Fig. 22, *Kaveinga abbreviata* (Lea): habitus, dorsal aspect. Fig. 23, *Kaveinga orbitosa* (Broun): head and pronotum, dorsal aspect. Figs. 24-26, Penis and parameres, right lateral aspect—Fig. 24, *Rhysodes sulcatus* (Fabricius). Fig. 25, *Kupea arcuatus* (Chevrolat). Fig. 26, *Kaveinga abbreviata* (Lea).

KEY TO GENERA

- 1 Temporal lobe with two medial angles, separated by a semicircular frontal space; humeral tubercle of elytron absent; orbital grooves reaching occiput *Rhysodes* Dalman, p. 58
- 1' Temporal lobe with medial angle single or absent; frontal space not differentiated; humeral tubercle of elytron well developed; orbital groove not extended to occiput, absent from many specimens 2
- 2 (1') Medial edges of temporal lobes parallel to one another, closely applied to margins of narrow, parallel-sided median lobe; basal impression short, open posteriorly, preceded by fine curved discal striole terminated near middle of pronotum..... *Kupea* new genus, p. 58

- 2' Medial edges of temporal lobes not straight, not closely applied to edges of median lobe throughout its length (though closely applied in specimens of some species for part of its length); median lobe not narrow and parallel-sided throughout its length; pronotum of most specimens with complete paramedian grooves, these in few specimens broken into large punctures in anterior fourth *Kaveinga* new genus, p. 58

Genus *Rhysodes* Dalman, 1823, p. 93
(Figs. 10, 20A–B, 24)

Synonym – *Epiglymmius* Lewis 1888, p. 79 (type *E. comes* Lewis 1888)

Type species – *Cucujus sulcatus* Fabricius 1787 (= *Rhysodes exaratus* Dalman 1823)

Lewis confused *Rhysodes exaratus* Dalman 1823 with *R. exaratus* Audinet-Serville 1825 (= *Omoglymmius americanus* Castelnau 1836); consequently, he applied the name *Rhysodes* to *Omoglymmius* and renamed the true *Rhysodes*.

Described species –

Rhysodes comes (Lewis 1888)

Rhysodes sulcatus (Fabricius 1787)

Description.— Habitus and sculpture of dorsum as in Fig. 20A. Antennal stylet well developed; basal setae of antennae well developed on all segments except Segment I; minor setae on Segments VI–X (absent from Segment V); four labral setae; temporal lobe emarginate medially, median lobe with semicircular frontal space on each side; frontal groove extended to antennal groove opposite middle of antennal base; antennal groove sinuously connected to orbital groove; latter extended completely around occiput, in contact with frontal groove posteriorly (Fig. 20A); temporal setae absent; eye large, normal (Fig. 20B); basal impressions large, open posteriorly, about 0.25 length of pronotum, each preceded by slender punctate discal striole extended to anterior 0.25 of pronotum; humeral tubercle absent, apex of elytron as in Fig. 10.

Penis (Fig. 24) (studied in *R. sulcatus*) tubular, very long, slender, internal sac very much reduced, apical lobe distinct, flattened, with conspicuous fine pores.

Two species are included: one from Europe and western Asia; the other from Japan.

Genus *Kupea* New Genus
(Figs. 21A–B, 25)

Type species – *Clinidium arcuatum* Chevrolat 1873a

Described species – *Kupea arcuatus* (Chevrolat 1873) NEW COMBINATION

This species was placed in *Rhysodes sensu stricto* by Grouvelle.

Description.— Length 5–7 mm. Habitus and sculpture of dorsum as in Fig. 21A. Antennal stylet absent; basal setae of antenna well developed on Segments VIII–XI, reduced on or absent from Segments V–VII; minor setae well developed on Segments VI–XI, reduced on or absent from Segment V; four labral setae; frontal grooves narrow, straight, parallel, separating narrow and parallel-sided median lobe from temporal lobes in the straight inner margins (Fig. 21A); orbital groove absent; antennal groove incomplete; eye reduced, longer than deep (Fig. 21B); one temporal seta; basal impressions short, about 0.20 length of pronotum, each preceded by linear discal striole; strioles curved medially anteriorly, terminated just anterior to middle of pronotum; pronotum with isolated, conspicuous anterior lateral pits; humeral tubercle distinct; hind wing vestigial; anterior femur with neutral tooth in both sexes, middle and hind tibiae each with two spurs (but inner one minute, and missing from many specimens).

Penis (Fig. 25) thick, with well-developed internal sac, and distinct apical lobe.

The generic name is based on that of Kupe, the Polynesian discoverer of New Zealand. It is masculine. This genus is confined to the North Island of New Zealand.

Genus *Kaveinga* New Genus
(Figs. 22, 23, 26)

Type species – *Rhysodes abbreviatus* Lea 1904

Described species –

Kaveinga abbreviata (Lea 1904) NEW COMBINATION
Kaveinga cylindrica (Arrow 1942) NEW COMBINATION
Kaveinga frontalis (Grouvelle 1903) NEW COMBINATION
Kaveinga lusca (Chevrolat 1875) NEW COMBINATION
Kaveinga occipitalis (Grouvelle 1903) NEW COMBINATION
Kaveinga orbitosa (Broun 1880) NEW COMBINATION
Kaveinga setosa (Grouvelle 1903) NEW COMBINATION

All species were originally described in the Genus *Rhysodes*. Grouvelle placed all species known to him in subgenus *Rhysodes sensu stricto*.

Description.— Habitus as in Fig. 22. Antennal stylet absent; two labral setae; medial margin of temporal lobe curved or oblique, not closely parallel to margin of median lobe (Fig. 22–23) or else in close contact for short distance posteriorly only; deep postantennal groove separating temporal lobe from parafrontal boss (incomplete laterally in a few species); orbital groove, if present, terminated near posterior margin of eye, absent from some specimens; pronotum in most species with complete, entire paramedian grooves (in *K. orbitosa* paramedian groove represented by row of very coarse punctures); humeral tubercle well developed; hind tibia with one spur.

Male genitalia (Fig. 26) (studied in *K. abbreviata*), with penis much stouter than in *Rhysodes*, internal sac well developed; apical lobe well developed, with small but conspicuous pores, some pores also on shaft of penis; right paramere well developed, about half size of left one.

The genus name is a Micronesian word meaning “to navigate by the stars”. It is feminine.

The range of *Kaveinga* includes the Pacific Islands, from New Zealand and New Caledonia to Australia, Tasmania, and westward to Mindanao and Buru in the Moluccas. New Guinea has many species.

K. orbitosa (Broun) is a valid species, and is not conspecific with *K. lusca* (Chevrolat) as maintained by Lewis (1888). This was first pointed out by Dr. Roy Crowson (*in litt.*). The two species are easily separated by the following features.

- | | | |
|----|--|-----------------------------|
| 1 | Paramedian grooves incomplete, in form of row of very coarse punctures anteriorly; each temporal lobe with three setae in common oval pit; pronotum with two angular setae each side, but without marginal setae | <i>K. orbitosa</i> (Broun) |
| 1' | Paramedian grooves entire, deep, well defined anteriorly; each temporal lobe with six or seven setae; each seta in separate puncture; pronotum with about 11 marginal setae each side. | <i>K. lusca</i> (Chevrolat) |

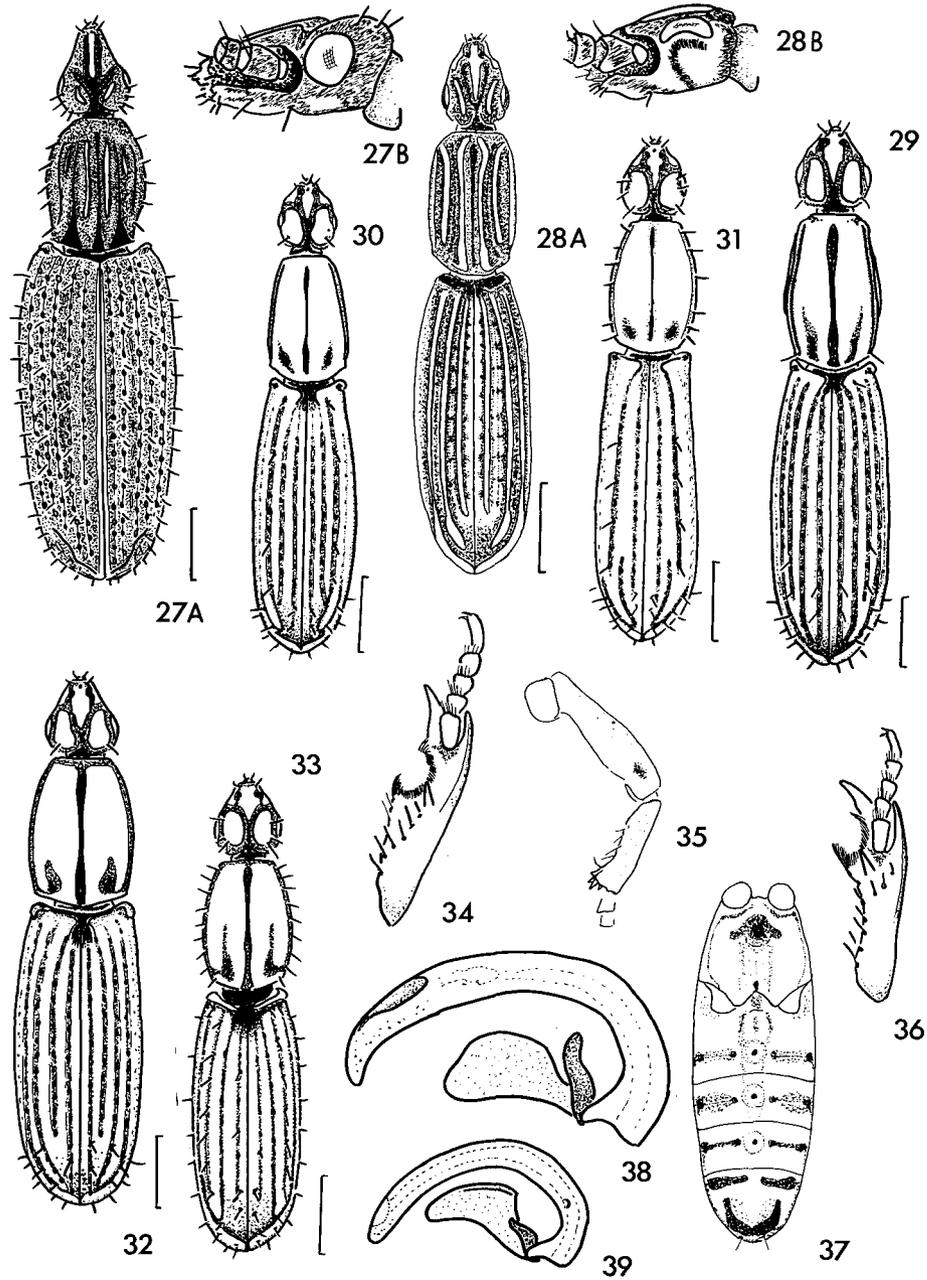
SUBTRIBE CLINIDIINA

Description.— Minor setae of antennal segments confined to ventral surface, in form of narrow band or oval or circular tuft, or, in specimens of few species, minor setae absent; stylet present; median head lobe short, not extended to neck; frontal grooves complete or nearly so; elytron without usual apical striole; pilosity more extensive than in other subtribes, almost all members with pilose bands or spots on legs.

This subtribe is almost cosmopolitan, but is absent from Africa, although it is well represented in Madagascar.

KEY TO GENERA

- | | | |
|--------|---|--------------------------------------|
| 1 | Striation complete; marginal stria is seventh full-length stria, counting from suture; eyes and hind wings fully developed. | <i>Grouvellina</i> new genus, p. 61 |
| 1' | Striation reduced; marginal stria is fourth, fifth or sixth full length stria; eyes reduced; hind wings vestigial | 2 |
| 2 (1') | Pronotum with complete paramedian grooves | <i>Rhizodiastes</i> Fairmaire, p. 61 |
| 2' | Pronotum with distinct basal impression terminated on disc, not extended to anterior margin. | <i>Clinidium</i> Kirby, p. 62 |



ILLUSTRATIONS OF ADULT CLINIDIINA. Fig. 27, *Grouvellina grouvellei* (Fairmaire): A, habitus, dorsal aspect; B, head, lateral aspect. Fig. 28, *Rhizodiastes parumcostatus* Fairmaire: A, habitus, dorsal aspect; B, head, lateral aspect. Figs. 29–33 habitus, dorsal aspect—Fig. 29, *Clinidium (Mexiclinidium) guatemalenum* Bell. Fig. 30, *Clinidium (Protainoa) extrarium*, new species. Fig. 31, *Clinidium (Tainoa) darlingtoni* Bell. Fig. 32, *Clinidium (Arctoclinidium) canaliculatum* (Costa). Fig. 33, *C. (Clinidium) guildingii* Kirby. Fig. 34, *Clinidium (Mexiclinidium) guatemalenum* Sharp: anterior leg, tibia and tarsus, medial aspect. Fig. 35, *Clinidium (Protainoa) extrarium*, new species: hind leg, male, trochanter, femur, tibia. Fig. 36, *Clinidium (Arctoclinidium) canaliculatum* (Costa): anterior leg, tibia and tarsus, medial aspect. Fig. 37, *Clinidium (Protainoa) extrarium*, new species: metathorax and abdomen, male, ventral aspect. Figs. 38–39, penis and parameres, right lateral aspect—Fig. 38, *Grouvellina*, undescribed species. Fig. 39, *Rhizodiastes sulcicollis* (Grouvelle).

Genus *Grouvellina* New Genus
(Figs. 27A–B, 38)

Type species – *Rhysodes tubriceps* Fairmaire 1868

Described species –

Grouvellina grouvellei (Fairmaire 1895) NEW COMBINATION

Grouvellina tubriceps (Fairmaire 1868) NEW COMBINATION

Probable species –

Rhysodes canaliculatus Castelnau 1836

Rhysodes planifrons Fairmaire 1893

We have been unable to locate the types of either of the “probable species”. The first was described from Madagascar and the second from Mayotte, in the Comoro Islands. The descriptions of both species are consistent with membership in this genus, and no other genus is known at present from Madagascar. Both species were described in the genus *Rhysodes*, and were placed in subgenus *Omoglymmius* by Grouvelle.

Description. – Habitus and sculpture of dorsum as in Fig. 27A. Eye fully developed, normal, deeper than long (Fig. 27B), with about 150 ommatidia; antennal lobe separated from temporal lobe by deep postantennal groove (Fig. 27A); temporal lobes with distinct medial angles closely approximate to one another; pronotum with complete paramedian grooves; elytral striation complete, marginal stria is seventh from suture; hind wings fully developed; middle tibiae alike in both sexes, with one spur and a medial process; hind tibia with two spurs in female, one spur and calcar in male.

Penis investigated in an undescribed species (Fig. 38) slender, with well-developed apical lobe; internal sac distinct; left paramere with elongate base; right paramere relatively long and slender, more than 0.50 long as left one.

This genus is confined to Madagascar where there are many undescribed species. It is named in honor of Antoine Grouvelle, the premier taxonomist of the Rhysodini.

Genus *Rhyzodiastes* Fairmaire 1895
(Figs. 28A–B, 39)

Type species – *Rhyzodiastes parumcostatus* Fairmaire 1868

Described species – (Those marked with ‘R’ were originally described in the genus *Rhysodes*, and those with ‘C’ in the genus *Clinidium*.)

<i>Rhyzodiastes beccarii</i> (Grouvelle 1903) NEW COMBINATION	
<i>Rhyzodiastes bifossulatus</i> (Grouvelle 1903) NEW COMBINATION	C
<i>Rhyzodiastes burnsi</i> (Oke 1932) NEW COMBINATION	R
<i>Rhyzodiastes costatus</i> (Chevrolat 1829) NEW COMBINATION	R
<i>Rhyzodiastes fairmairei</i> (Grouvelle 1895b) NEW COMBINATION	C
<i>Rhyzodiastes frater</i> (Grouvelle 1903) NEW COMBINATION	C
<i>Rhyzodiastes gestroi</i> (Grouvelle 1903) NEW COMBINATION	C
<i>Rhyzodiastes guineensis</i> (Grouvelle 1903) NEW COMBINATION	C
<i>Rhyzodiastes liratus</i> (Newman 1838) NEW COMBINATION	R
<i>Rhyzodiastes maderiensis</i> (Chevrolat 1873a) NEW COMBINATION	R
<i>Rhyzodiastes mirabilis</i> (Lea 1904) NEW COMBINATION	R
<i>Rhyzodiastes mishmicus</i> (Arrow 1942) NEW COMBINATION	C
<i>Rhyzodiastes montrouzieri</i> (Chevrolat 1875) NEW COMBINATION	R
<i>Rhyzodiastes myopicus</i> (Arrow 1942) NEW COMBINATION	C
<i>Rhyzodiastes parumcostatus</i> (Fairmaire 1868)	R
<i>Rhyzodiastes proprius</i> (Broun 1880) NEW COMBINATION	R
<i>Rhyzodiastes quadristriatus</i> (Chevrolat 1873a) NEW COMBINATION	R
<i>Rhyzodiastes raffrayi</i> (Grouvelle 1903) NEW COMBINATION	C
<i>Rhyzodiastes rimoganensis</i> (Miwa 1934) NEW COMBINATION	C
<i>Rhyzodiastes singularis</i> (Heller 1898) NEW COMBINATION	C
<i>Rhyzodiastes spissicornis</i> (Fairmaire 1895) NEW COMBINATION	C
<i>Rhyzodiastes sulcicollis</i> (Grouvelle 1903) NEW COMBINATION	C
<i>Rhyzodiastes waterhousei</i> (Grouvelle 1910) NEW COMBINATION	C

Description. – Habitus and sculpture of dorsum as in Fig. 28A. Eye reduced, directed dorsolaterally, in most specimens long oval to narrowly crescentic (Fig. 28B); in one species converted to two ocellus-like structures; pronotum (Fig. 28A) with

complete paramedian grooves, inner margin of paramedian groove of many specimens ill-defined; disc with four carinae; elytral striation reduced; marginal stria sixth or less from margin; striae and intervals markedly unequal; hind wings vestigial; male with distinct calcars on middle and hind tibiae; both sexes with two spurs on middle and hind tibiae.

Penis (investigated in *R. parumcostatus*, *R. proprius*, and *R. sulcicollis*) (Fig. 39) relatively slender, tubular, with internal sac indistinctly developed, and without apical lobe or obvious ligula.

This genus occurs in two disjunct areas: the first in the Oriental and Australian Regions, from eastern India to Australia, New Zealand, the Caroline Islands, and Fiji; the second in eastern South America, from French Guiana through Brazil to northern Argentina. The genus is structurally divergent and merits division into subgenera, though we have not done so here.

Grouvelle ranked this taxon as a subgenus of *Clinidium*, but he did not include certain Australian and South American species, which were known to him only through published descriptions. Vulcano and Pereira (1975b) put *Rhysodes quadristriatus* and *R. maderiense* into this genus, which they ranked as a subgenus of *Clinidium*. Barry Moore (*in litt.*) has confirmed the true position of *R. mirabilis* and *R. burnsi*. Dajoz (1975) concluded that *R. parumcostatus* is not conspecific with *R. costatus*. We agree with him, and have concluded from study of the types that *R. liratus* is also a distinct species. Adults of these three species are separated from one another by the following features.

- | | | |
|--------|--|---|
| 1 | Tufts of minor setae begin on ventral side of antennal Segment IV | 2 |
| | <i>Rhysodiastes parumcostatus</i> (Fairmaire) | |
| 1' | Tufts of minor setae begin on the ventral side of antennal Segment V | 2 |
| 2 (1') | First elytral stria not obviously punctate, but with broad band of pilosity | 2 |
| | <i>Rhysodiastes liratus</i> (Newman) | |
| | First elytral stria presented by row of punctures, without continuous strip of pilosity. | 2 |
| | <i>Rhysodiastes costatus</i> (Chevrolat) | |

The type specimen of *R. parumcostatus* is labelled as coming from Madagascar. No further specimens have been found there, and we have seen apparently identical specimens from several localities in Brazil, so we conclude that the Madagascar label is erroneous.

Genus *Clinidium* Kirby 1835
(Figs. 11, 29–37)

Type species — *Clinidium guildingii* Kirby 1835

Description. — Eye reduced, directed dorsolaterally, long-oval to narrowly crescentic in most specimens, in older individuals of some species obscured by pigment; in members of few species, converted to ocellus-like structure or else divided in form of two ocellus-like structures; pronotum with basal impressions each preceded by discal striole, but without complete paramedian groove, disc therefore of two portions, separated only by median groove; elytral striation reduced, marginal stria is sixth or less from suture; hind wings vestigial; both sexes with two spurs on each middle and hind tibia; male with middle and hind calcars distinct.

Penis (studied in *C. mexicanum* and *C. sculptile*) slender, curved, without internal sac, parameres both elongate.

This genus is equivalent to subgenus *Clinidium sensu stricto* of Grouvelle. It is known from the Holarctic Region, Central America, northern South America and the West Indies. It is absent from Africa, Madagascar, tropical Asia, Australia, and the Pacific islands.

KEY TO SUBGENERA

- | | | |
|-------|---|---|
| 1 | Cleaning organ of anterior tibia entirely proximad to basal articulation of tarsus (Fig. 34) | 2 |
| 1' | Cleaning organ more distad, basal articulation of tarsus opposite its midpoint (Fig. 36) | 4 |
| 2 (1) | Well developed, complete elytral striae, marginal one clearly sixth from suture; Stria III ended blindly posteriorly, Intervals III and IV in most specimens apparently merged posteriorly; outer marginal groove of pronotum well developed in most specimens; pronotum widest near middle | 4 |
| | <i>Mexiclinidium</i> new subgenus, p. 63 | |

- 2' Striation reduced; Stria V of minute punctures or absent, total number of conspicuous complete striae five or less; outer marginal groove of pronotum absent; pronotum widest distinctly behind middle 3
- 3 (2') Stria II complete, marginal stria apparently Stria V; pronotum without marginal setae *Protainoa* new subgenus, p. 63
- 3' Stria II abbreviated anteriorly, forming partial stria, marginal stria apparently fourth full-length stria; pronotum with several marginal setae
. *Tainoa* new subgenus, p. 64
- Marginal stria of elytron clearly sixth from suture, all striae well developed; elytral intervals carinate, marginal groove of pronotum double or single
. *Arctoclinidium* Bell, p. 65
- 4' Striation more reduced, marginal is fourth or fifth well developed one; elytral intervals not carinate or scarcely so; marginal groove of pronotum single
. *Clinidium sensu stricto*, p. 65

Subgenus *Mexiclinidium* New Subgenus
(Figs. 29, 34)

Type species – *Clinidium mexicanum* Chevrolat 1873a

Described species –

Clinidium (Mexiclinidium) blomi Bell 1970

Clinidium (Mexiclinidium) guatemalenum Sharp 1899

Clinidium (Mexiclinidium) mexicanum Chevrolat 1873a

Description. – Habitus and sculpture of dorsum as in Fig. 29. Antennal stylet small; marginal grooves of pronotum double (outer one either deep, visible in dorsal view or else shallow, visible only in lateral view); pronotum with angular seta, but without marginals; elytral striae well developed; marginal stria sixth from suture; intervals carinate; Stria III ended blindly posteriorly, Intervals III and IV anastomosed posteriorly; metasternum not sulcate medially; cleaning organ entirely proximad to base of tarsus (Fig. 34); male with ventral tooth on front femur, tooth on front trochanter and proximal tooth on front tibia present or absent.

This taxon is equivalent to the *mexicanum* group as defined in Bell (1970). It must be removed from the subgenus *Arctoclinidium* because the position of the cleaning organ clearly links *Mexiclinidium* with *Protainoa* and *Tainoa*.

This subgenus is known from the highlands of Mexico and Guatemala.

Subgenus *Protainoa* New Subgenus
(Figs. 30, 35, 37)

Type species – *Clinidium extrarium* NEW SPECIES

Description of subgenus. – Habitus and sculpture of dorsum as in Fig. 30. Antennal stylet small, acuminate; marginal groove of pronotum single, incomplete; marginal setae absent; pronotum subpyriform, widest near base; elytral striation reduced; marginal stria fifth from suture, effaced in middle third; Stria IV reduced to indistinct row of minute punctures; Striae I–III impressed, complete, without well-defined median sulcus; cleaning organ entirely proximad to tarsal base; male with apical tooth on anterior trochanter, and ventral tooth on anterior femur.

This extraordinary species shows affinities both with *Mexiclinidium* and *Tainoa*, and forms a connecting link between them. The pattern of setae suggests *Mexiclinidium*, while shape of the pronotum, reduced striation, and arrangement of abdominal grooves are closer to *Tainoa*.

Clinidium (Protainoa) extrarium New Species

Type material –

HOLOTYPE male, labelled: “Am.Bor.Rhysodes”, “N.Amerika”.(BSL)

PARATYPE female, same data. (BSL)

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The correct locality of this isolated species is unknown. In view of its relationships, the most probable homeland would be the tropical lowlands of Mexico, from which no *Rhysodini* have yet been obtained. Central America, the Greater Antilles, or tropical Florida are also possibilities.

Description.— Length 6.2–6.3 mm; form as described for subgenus; antenna with Segment XI ovoid, longer than wide; stylet about 0.33 as long as segment; tufts of minor setae on the ventral sides of Segments VI–X, but absent from Segment V; basal setae on Segment VII–X; eye relatively narrow, elongate, oval; orbital groove incomplete; one or two temporal setae, each in conspicuous pit, entirely medial to orbital groove.

Pronotum elongate, widest near base, tapered anteriorly; hind angles conspicuously dentate; median groove narrow, closed at both ends; basal impressions very small, 1.6 of length of pronotum; discal striole absent; marginal groove single, ended well anterior to hind angles.

Elytron with five striae; Striae I and II impressed, complete, coarsely punctate; III shallow, much more finely punctate; IV reduced to row of fine punctures except at apex, which is impressed; Stria V represented by row of minute punctures in anterior fourth, completely effaced at middle, more or less impressed, coarsely punctate in apical third; two setae near apex of Stria I, none in Stria II, four evenly spaced along Stria III, two in impressed apical portion of Stria IV, about seven in impressed apical 0.33 of Stria V; metasternum with broad, deep medial concavity, but without a well-defined median sulcus, Sterna I–III with median impression in form of continuation of metasternal concavity; Sterna III–V each with transverse groove on each side, each groove ended in a pit both medially and laterally; medial pits well separated from one another; male with median pilose spots on Sterna IV, V (Fig. 37); lateral pits of Sternum IV greatly enlarged in female; Sternum VI with two pairs of sulci, anterior ones transverse, posterior ones nearly approximate in midline, curved anteriorly and laterally; no setae on Sternum VI; male with all femora tuberculate ventrally; female with anterior femora tuberculate ventrally, middle and hind femora smooth ventrally; male with ventral tooth on anterior femur; tibia much dilated above cleaning organ in both sexes; hind tibia (Fig. 35) with sharp apical cusp, in form of a third tibial spur; male with calcars of middle and hind legs acute.

Subgenus *Tainoa* New Subgenus (Fig. 31)

Type species – *Clinidium darlingtoni* Bell

Described species –

Clinidium (Tainoa) chevrolati Reitter 1880

(=*Clinidium turquinense* Bell 1970 NEW SYNONYMY)

Clinidium (Tainoa) curvicosta Chevrolat 1873a

Clinidium (Tainoa) darlingtoni Bell 1970

Clinidium (Tainoa) xenopodium Bell 1970

Description.— Habitus and sculpture of dorsum as in Fig. 31. Antennal stylet large; tufts of minor setae on antennal Segments VI–X; basal setae on Segments VI–X; two or three temporal setae; marginal groove of pronotum single, complete; hind angle not dentate; pronotum widest near base, attenuate anteriorly, more or less pyriform; elytral striation reduced, the marginal one being the fifth from suture; a partial stria, 0.5 to 0.25 length of elytron, between first and second full length striae; five full-length striae, Stria IV represented by inconspicuous line of minute punctures; metasternum not sulcate or impressed; cleaning organ entirely proximad to tarsal base; Sternum VI with two pairs of sulci, anterior ones transverse, more or less oval; posterior ones longitudinal, elongate; Sternum VI with one pair of setae.

This subgenus is equivalent to the *curvicosta* group of *Clinidium sensu stricto* as defined by Bell (1970). The similarities to *Protainoa* show that striation was reduced independently in *Clinidium sensu stricto* and in *Tainoa*, and that *Tainoa* is not closely related to *Clinidium sensu stricto*.

Tainoa is named for the Taino Indians of the West Indies. Members are easily recognized by the presence of the partial stria. The subgenus is in Cuba, Jamaica, and Hispaniola, but not in Puerto Rico.

Clinidium chevrolati Reitter was based on a specimen supposedly collected in Colombia. It has not been collected since in Colombia, and the type, in the Museum of Natural History in Vienna, is identical with *Clinidium turquinense* of Cuba. It is probable that the collecting data on Reitter's specimen were erroneous.

The status of *Clinidium curvicosta* Chevrolat is in doubt. Vulcano and Pereira (1975b) illustrate the elytron of a specimen in the Museum of Natural History in Vienna, which is labelled as the type. This specimen does not have a partial stria, and evidently does not belong in the

subgenus *Tainoa*. Clearly it is not the Cuban species recognized by Bell (1970) and previous authors as *C. curvicosta*. However, the original description of *C. curvicosta* clearly states that a partial stria is present, and does not apply to the supposed type. The type label may have been incorrectly applied to the Vienna specimen. This would leave *C. curvicosta* without an authenticated type. The Chevrolat description could apply either to *C. chevrolati* or to the other, more common *Tainoa* of Cuba, but it seems best to continue to apply the name *C. curvicosta* to the latter species, in the absence of evidence to the contrary.

Subgenus *Arctoclinidium* Bell 1970
(Figs. 11, 32, 36)

Type species – *Rhysodes sculptilis* Newman 1838

Described species –

- Clinidium (Arctoclinidium) apertum apertum* Reitter 1880
(=*Clinidium allegheniense georgicum* Bell and Bell 1975, NEW SYNONYMY)
- Clinidium (Arctoclinidium) apertum allegheniense* Bell and Bell 1975 NEW COMBINATION
- Clinidium (Arctoclinidium) baldufi* Bell 1970
- Clinidium (Arctoclinidium) calcaratum* Leconte 1875
- Clinidium (Arctoclinidium) canaliculatum* (Costa 1839) (*Ips*)
- Clinidium (Arctoclinidium) marginicolle* Reitter 1889
- Clinidium (Arctoclinidium) rosenbergi* Bell 1970
- Clinidium (Arctoclinidium) sculptile* (Newman 1838) (*Rhysodes*)
- Clinidium (Arctoclinidium) valentinei* Bell 1970
- Clinidium (Arctoclinidium) veneficum* Lewis 1888

Description. – Habitus and sculpture of dorsum as in Fig. 32. Antennal stylet very small; tufts of minor setae on antennal segments VI–X; eye relatively well developed, its depth usually about 0.33 of length; temporal setae single or absent; marginal groove of pronotum double or single; angular seta present or absent; marginal setae absent; striation of elytra well developed, Stria III complete posteriorly (Fig. 11); marginal stria sixth one from suture; elytral setae very poorly developed or entirely absent; base of anterior tarsus opposite middle of cleaning organ (Fig. 36).

This subgenus as here defined is less extensive than as defined by Bell (1970), since the *mexicanum* group has been removed. Specimens have six elytral striae with the third one not abbreviated posteriorly. The distribution is Holarctic, with one species each in Europe, Iran, Japan and western North America, and five species in the eastern United States.

Clinidium apertum Reitter was erroneously attributed to the Himalaya. The type, in the Museum of Natural History in Vienna, is identical to the form described by Bell and Bell (1975) as *C. allegheniense georgicum*, from the southeastern U.S.

Subgenus *Clinidium sensu stricto* Kirby 1835
(Figs. 6, 33)

Type species – *Clinidium guildingii* Kirby 1835

Described species –

- Clinidium boroquense* Bell 1970
- Clinidium cavicolle* Chevrolat 1873b
- Clinidium centrale* Grouvelle 1903
- Clinidium chiolinoi* Bell 1970
- Clinidium corbis* Bell 1970
- Clinidium dubium* Grouvelle 1903
- Clinidium foveolatum* Grouvelle 1903
- Clinidium granatense* Chevrolat 1873a
- Clinidium guildingii* Kirby 1835
- Clinidium haitiense* Bell 1970
- Clinidium incis* Bell 1970
- Clinidium insigne* Grouvelle 1903
- Clinidium integrum* Grouvelle 1903
- Clinidium jamaicense* Arrow 1942

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Clinidium mathani Grouvelle 1903
Clinidium oberthueri Grouvelle 1903
Clinidium pilosum Grouvelle 1903
Clinidium planum Chevrolat 1844
Clinidium rojasi Chevrolat 1873a
Clinidium rossi Bell 1970
Clinidium sulcigaster Bell 1973
Clinidium validum Grouvelle 1903

The following species are also probable members of the subgenus, but we have not yet been able to locate type specimens.

Clinidium humeridens Chevrolat 1873a
Clinidium simplex Chevrolat 1873b

Description. — Habitus and sculpture of dorsum as in Fig. 33. Antennal stylet very small to large; tufts of minor hairs various in arrangement, beginning on antennal Segments VI, VII, VIII, or IX, or, in a few species, entirely absent; scattered minor hairs on Segment XI in the latter species, as in all Rhysodini; eyes of few members broad, narrowly crescentic in most members, concealed by pigment in older specimens, in a few species represented by a false ocellus or pair of false ocelli; temporal setae one to five, or absent; marginal groove of pronotum single; angular seta present; marginal setae one to eight; elytral striation reduced, marginal stria fourth or fifth well developed one, counting from suture; no partial stria between first and second striae; elytral setae various, very numerous in many specimens; base of anterior tarsus opposite middle of cleaning organ.

This subgenus as here defined is less extensive than as defined by Bell (1970), since the *curvicosta* group has been removed. It is easily recognized by reduced striation and absence of a partial stria. The range includes Central America from Guatemala southward, the West Indies, and the northern and western parts of South America, including the Amazon Basin.

SUBTRIBE OMOGLYMMIINA

Description. — Minor setae of antennae in form of subapical ring on outer antennal segments, more generally distributed on Segment XI; median lobe of head short, not extended to neck nor separating temporal lobes; latter with distinct medial angle in most specimens; frontal grooves deep and complete in most specimens, more or less effaced in *Omoglymmius* (*Navitia*); mentum completely fused to gena laterally; elytral striation complete, marginal stria seventh from suture, apical striole distinct in most specimens; middle and hind tibiae each with one or two spurs.

This subtribe is almost cosmopolitan, though it is absent from New Zealand, and is poorly represented in Australia, Africa, and South America. It is most diverse and divergent in the Oriental Region and in New Guinea. The subtribe includes most of the subgenus *Omoglymmius* of Grouvelle (all of his species except those from Madagascar). The subgenus *Shyrodes* of Grouvelle is included as well.

KEY TO GENERA

- | | |
|--------|--|
| 1 | Pronotum without complete paramedian grooves, either with basal impressions preceded by discal strioles or with incomplete paramedian grooves not extended to anterior margin, or entirely without grooves other than median one 2 |
| 1' | Pronotum with complete paramedian grooves extended to anterior margin of the pronotum 5 |
| 2 (1) | Middle and hind tibiae each with a single spur; paramedian grooves almost complete, but evanescent anteriorly, not differentiated into distinct basal impression and discal striole <i>Plesioglymmius</i> new genus, p. 70 |
| 2' | Middle and hind tibiae each with two spurs; pronotum with basal impressions each preceded by discal striole or else without either 3 |
| 3 (2') | Eye with distinct ommatidia, fully developed or slightly reduced, not protruding; basal scarp of elytron simple, transverse <i>Yamatoa</i> Bell |
| 3' | Eye minute, ocelliform, protruded, without visible ommatidia; basal scarp of elytron not transverse 4 |
| 4 (3') | Basal scarp of elytron oblique, straight, limiting triangular depression in region |

- of suture; pronotum with basal impressions preceded by scutellar striae;
base of pronotum without scarp; frontal grooves incomplete anteriorly
. *Shyrodes* Grouvelle, p. 69
- 4' Basal scarp of elytron bisinuate, in form of projected tooth opposite fourth
and fifth striae; pronotum with prominent basal scarp; basal impressions and
discal striae absent: frontal grooves complete anteriorly
. *Srimara* new genus, p. 70
- 5 (1') Hind tibiae each with two spurs 6
- 5' Hind tibiae each with one spur 7
- 6 (5) Dorsal surface shining, impunctate or nearly so; hind tibia of male straight,
with small calcar *Arrowina* new genus, p. 71
- 6' Dorsal surface very coarsely punctate, very heavily microsculptured, opaque;
hind tibia of male strongly bent in basal half, strongly flattened and dilated in
apical half *Xhosores* new genus, p. 67
- 7 (5') Inner margin of temporal lobe emarginate, with two medial angles
. *Pyxiglymmius* new genus, p. 71
- 7' Inner margin of temporal lobe simple, with one medial angle
. *Omoglymmius* Ganglbauer, p. 72

Genus *Xhosores* New Genus

(Figs. 40, 47, 48)

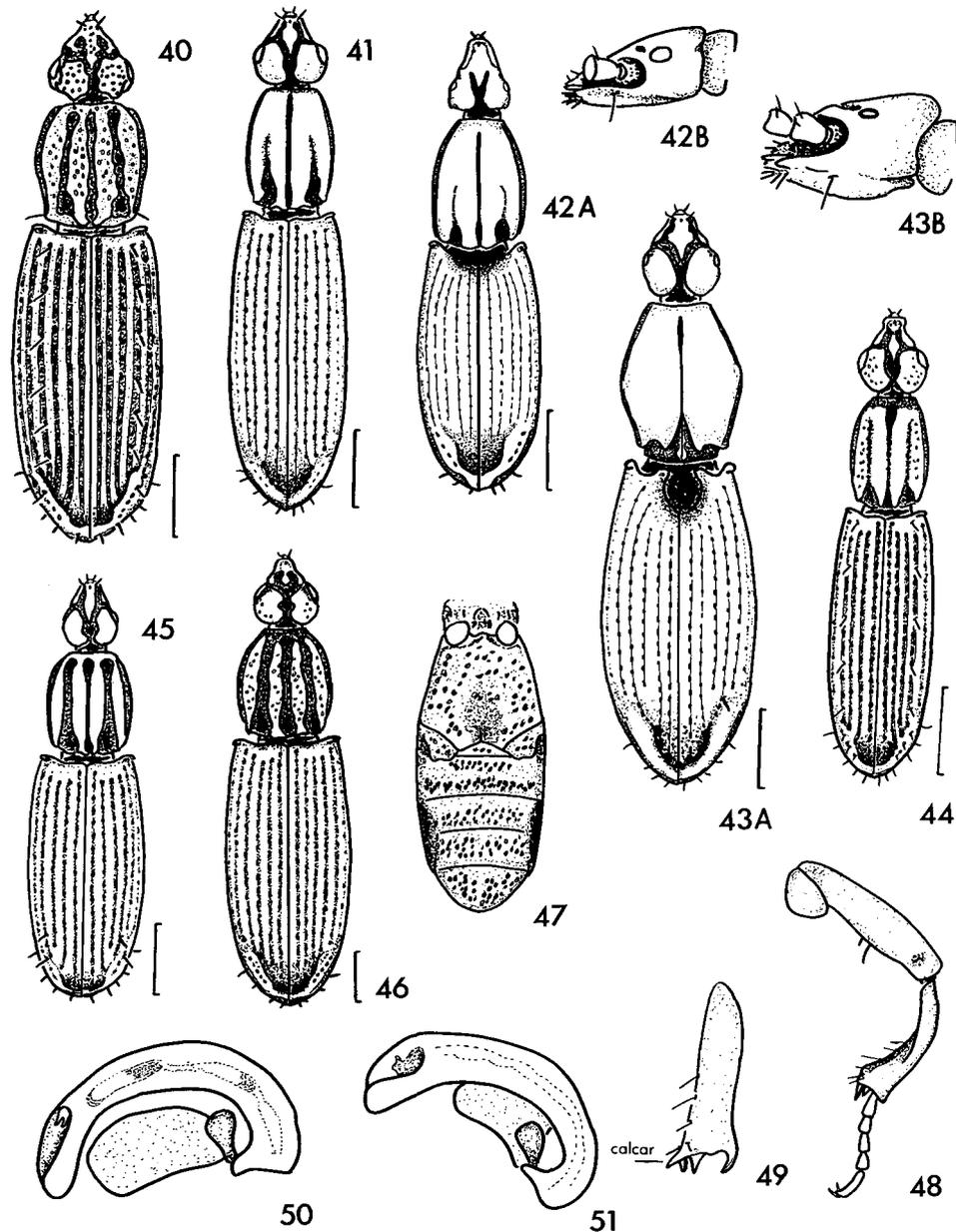
Type species – *Rhysodes figuratus* Germar 1840*Described species* –*Xhosores figuratus* (Germar 1840) NEW COMBINATION

Description. – Habitus and sculpture of dorsum as in Fig. 40. Length 6.4–6.8 mm. Segment XI of antenna elongate, its apex in form of compressed sharp ridge, but without true stylet; minor setae on Segments VII–X; basal setae on Segments VI–X; median lobe of head acutely pointed posteriorly, separated from temporal lobes by a pair of elongated prefrontal pits almost in contact with frontal space posteriorly and postclypeal grooves anteriorly, each thus like frontal groove with two very short interruptions; frontal space elongate, narrow; medial angles of temporal lobe obtuse, narrowly separated from one another; occipital angles well developed, somewhat lobate; dorsal surface of temporal lobes very coarsely, densely punctate, surface between punctures densely microsculptured, opaque, contrasted with shining impunctate neck; orbital groove absent; temporal setae absent; eye fully developed.

Pronotum with complete paramedian grooves; carinae and grooves both densely and coarsely punctate; marginal groove single, narrow, coarsely punctate; marginal setae absent; angular seta present, distinctly anterior to angle; elytron with humeral tubercle small, inconspicuous; inner intervals flat, outer intervals more convex, outer few subcarinate; all intervals densely microsculptured, opaque; striae very coarsely punctate; subapical striole distinct; Stria IV with six to seven setae evenly distributed; subapical portion of Stria VII with about five setae; metasternum and abdominal sterna coarsely punctured (Fig. 47).

Femur of front leg in both sexes with acute ventral tooth; middle tibia of male with one spur, of female with two spurs; middle tibia of male with acute calcar; hind tibia in both sexes with two spurs, the inner one smaller; hind tibia of male much modified, proximal half curved, cylindrical, distal half dilated, markedly flattened (Fig. 48), the calcar represented by obtuse angle; hind tibia of female straight, cylindrical; female with deep, narrow elongated pit extended length of lateral margins of sterna IV–V; genitalia and hind wings not investigated.

The genus name is based on that of the Xhosa people of South Africa. It is masculine. This genus stands apart from all other Rhysodini in the opaque, densely microsculptured dorsal surface with extremely coarse punctures, in the flattened, curved hind tibia of the male, and in the lateral grooves of the abdomen, which occupy the entire length of two sterna in the female. It differs from all other Omoglymmiina in the presence of the angular seta. The placement in Omoglymmiina is provisional, and *Xhosores* might eventually prove to belong in a subtribe of its own. The only species, *X. figuratus* (Germar), is confined to the Province of Natal and the extreme eastern part of the Cape Province in South Africa. Brinck (1965) gives a distribution map, and states that the species occurs in subtropical forests from sea level up to an elevation of 914 m.



ILLUSTRATIONS OF ADULT OMOGLYMMIINA. Figs. 40-41, habitus, dorsal aspect—Fig. 40, *Xhosores figuratus* (Germar). Fig. 41, *Yamatoa niponensis* (Lewis). Fig. 42, *Shyrodes doherlyi* Grouvelle: A, habitus, dorsal aspect; B, head, lateral aspect. Fig. 43, *Srimara planicollis*, new species: A, habitus, dorsal aspect; B, head, lateral aspect. Fig. 44-46, habitus, dorsal aspect—Fig. 44, *Plesioglymmius meridionalis* (Grouvelle). Fig. 45, *Arrowina taprobanae* (Fairmaire). Fig. 46, *Pyxiglymmius strabus* (Newman). Figs. 47-48, *Xhosores figuratus* (Germar)—Fig. 47, pterothorax and abdomen, female, ventral aspect; Fig. 48, hind leg, male. Fig. 49, *Arrowina taprobanae* (Fairmaire): middle tibia, male. Figs. 50-51, penis and parameres, right lateral aspect—Fig. 50, *Yamatoa reitteri* Bell. Fig. 51, *Arrowina anguliceps* (Arrow).

Genus *Yamatoa* Bell 1977
(Figs. 41, 50)

Type species — *Rhysoes niponensis* Lewis 1888

Described species —

Yamatoa arrowi (Grouvelle 1908)

Yamatoa boysi (Arrow 1901)

(=*R. kaschmirensis* Reitter 1922)

Yamatoa draco Bell 1977

Yamatoa longior (Grouvelle 1903) NEW STATUS, NEW COMBINATION

Yamatoa niponensis (Lewis 1888)

Yamatoa peninsularis (Arrow 1942)

Yamatoa reitteri Bell 1977

Description. — Habitus and sculpture of dorsum as in Fig. 41. Stylet of antennal Segment XI minute to absent; rings of minor setae present on Segments V–X; basal setae of antennae absent; frontal grooves narrow, but deep, complete; orbital grooves absent; eye full sized to slightly reduced, ommatidia distinct; basal impressions of pronotum distinct, open posteriorly, with tubercle; impression preceded by linear discal striole; basal scarp of elytron transverse, nearly straight; humeral tubercle present; striae complete, coarsely punctate; middle and hind tibiae each with two spurs; calcar of middle tibia acute, that of hind tibia blunt.

Penis (Fig. 50) (investigated in *Y. reitteri*) round in cross section, rather thick, with reduced internal sac; orifice with small two-pronged ligula and short apical lobe, tip of latter sharply truncate; orifice prolonged apically as slit on dorsal side of apical lobe.

This genus is confined to the Oriental Region, from the Himalaya to Japan and Java.

Yamatoa longior (Grouvelle 1903) was described as a “variety” of *Y. niponensis* Grouvelle probably intended it to be what we now call a geographic subspecies. Study of the type in Paris shows that it is a distinct species, closer to *Y. peninsularis* (Arrow) than to *Y. niponensis*. Both *Y. peninsularis* and *Y. longior* differ from all other members of the genus in having a precoxal carina. In *Y. peninsularis* the carina extends only about 0.33 the distance from the coxa to the anterior margin, while in *Y. longior* the carina is much longer, reaching almost to the anterior margin.

Genus *Shyrodes* Grouvelle 1903 New Status
(Figs. 42A–B)

Type species — *Rhysoes dohertyi* Grouvelle 1903

Described species —

Shyrodes dohertyi (Grouvelle 1903) NEW COMBINATION

Description. — Habitus and sculpture of dorsum as in Fig. 42A. Length about 6 mm. Segment XI of antenna with short, flattened apical stylet; rings of minor setae present on Segments V–X; basal setae absent; frontal grooves shallow, incomplete anteriorly, not reaching antennal grooves; frontal space small; medial angles of temporal lobes obtuse, narrowly separated; clypeal grooves continuous with antennal grooves; anterior part of head elongate; isolated postantennal pit present; temporal lobe with distinct posterior angle, giving it a subtruncate outline in dorsal view; temporal setae absent; eye (Fig. 42B) protruding, ocelliform, small (diameter subequal to that of antennal Segment I); directed dorsolaterally, without distinct ommatidia; basal impression of pronotum small, deep, without a tubercle, open posteriorly; discal striole very fine, confined to posterior 0.33 of pronotum; marginal and angular setae absent; basal scarp of elytron oblique, nearly straight, the two scarps limiting triangular depression at base of suture; humeral tubercle small but distinct; striation complete, but striae V–VII represented by minute punctures, effaced in humeral region; inner striae with moderately fine punctures; abdominal Sterna III–V each with single transverse row of punctures; Sternum IV with enlarged round lateral pit in both sexes; middle and hind tibiae each with two equal spurs; femur of front leg with ventral tooth in male, entire in female; calcars of male very small.

Genitalia and hind wings not investigated.

Shyrodes contains only one species, *S. dohertyi* (Grouvelle), apparently known only from the type series, collected at the Ruby Mines by Doherty. There are two specimens bearing type labels, a male in the Paris Museum (PM) (hereby designated as LECTOTYPE), and a female in London (BMNH), a paralectotype. MCZ, Harvard University, has another female also bearing the Doherty label, and probably part of the original type series.

This genus is easily recognized by the unique oblique basal scarp on the elytron. It seems related to *Yamatoa*, and might represent a highly modified offshoot of the latter genus.

Genus *Srimara* New Genus
(Figs. 43A–B)

Type species – *Srimara planicollis* NEW SPECIES (the only known species)

Type material – HOLOTYPE female (antennal segments VIII–XI missing)
labelled: VIET NAM, Mt. Lang, Bian, 1500–2000 m,
19.V– 8.VI 1961. N.R. Spencer (BPBM).

Description. – Habitus and sculpture of dorsum as in Fig. 43A. Length 7.2 mm; minor setae begin on Segment V of antenna; basal setae absent; labrum rounded, with two setae; head slightly wider than long, anterior part not elongate; frontal grooves narrow but complete; frontal space very small, very narrow; median lobe elongate, its posterior tip acute; medial angles of temporal lobes obtuse, narrowly separated; orbital groove fine but distinct, with three minute pit-like dilations; temporal lobe rounded posteriorly; temporal setae absent; eye minute (Fig. 43B), much smaller in diameter than first antennal segment; eye ocelliform, convex, directed dorsolaterally, without distinct ommatidia.

Pronotum long, narrow, widest slightly behind middle, markedly narrowed anteriorly, and distinctly narrowed to base; pronotum with elevated disc separated from base of elevated scarp; disc without any trace of basal impressions or discal striae; basal scarp interrupted at midline by dilated posterior end of median groove; marginal groove fine, nearly complete, but interrupted near middle (asymmetrically in holotype); basal scarp on each side with two obtuse points separated by distinct emargination; ventral margin of scarp on each side with narrow transverse slit (visible only in posterior view), perhaps representing a greatly modified basal impression; round median tubercle present on base of pronotum posterior to scarp; marginal and angular setae absent.

Elytra short, broad; basal scarp of elytron highly modified, deeply emarginate between humeral tubercle and base of fourth stria, where the scarp forms an anteriorly directed rounded tooth, then curved directly posteriorly, and finally curved obliquely posteriomedially, elytra together thus bounding deep, narrow, oval depression, elytral striae scarcely impressed, outer striae reduced to rows of minute punctures; striae punctures elongate, narrow, all striae except Stria I abbreviated at base; Striae II–V extending successively more anteriorly; Striae VI and VII effaced basally; Stria VI also effaced posteriorly; metasternum impunctate, not sulcate; female with punctures of abdominal sternites scattered; Sternite IV with deep lateral pit which is rounded anteriorly, and narrowed and slit-like posteriorly (male unknown); anterior tibia with cleaning organ much reduced, with only six or seven short truncate setae of nearly equal length; middle tibia with two unequal teeth (anterior spur only about half as long as posterior one); spurs of hind tibiae damaged in holotype, but appearing to be equal. Genitalia and wings not investigated.

Adults of this species are easily recognized by the complete absence of basal impressions on the disc of the pronotum, as well as by the unique bisinuate basal scarp of the elytron. Like *Shyrodes dohertyi* it is related to *Yamatoa*, and might represent an offshoot of the latter genus. The presence of a distinct orbital groove, a structure lacking from all known *Yamatoa* adults makes it more likely that *Srimara* shares a common ancestor with *Yamatoa* but is not a modified *Yamatoa*. The name *Srimara* is that of an early ruler of the Champa Kingdom in southern Viet Nam, and is masculine.

Genus *Plesioglymmius* New Genus
(Fig. 44)

Type species – *Rhysodes elegans* Grouvelle 1903

Described species –

Plesioglymmius elegans (Grouvelle 1903) NEW COMBINATION

Plesioglymmius meridionalis (Grouvelle 1903) NEW COMBINATION

Description. – Habitus and sculpture of dorsum as in Fig. 44. Antenna with or without stylet; rings of minor setae present on Segments V–X; basal setae present or absent; antennal bases more or less displaced medially; clypeus narrowed posteriorly, more or less angulate laterally; clypeus separated from median lobe by transverse depression which varies from ill-defined to very distinct, or else clypeus and median lobe separated by antennal lobes which in this case are contiguous in midline; temporal lobes various, either with distinct medial angles or else medial margins abruptly truncate. Eyes fully developed, with distinct ommatidia

Pronotum with incomplete paramedian grooves, extended 0.75 to 0.90 length of pronotum, but not to anterior margin;

paramedian grooves not clearly differentiated into basal impression and discal striole, anterior portion not linear; middle and hind tibiae each with single spur; hind wings fully developed; penis not investigated.

Adults of this genus are easily recognized by the form of the paramedian grooves, which are not extended to the anterior margin, but are not differentiated into a linear discal striole and a basal impression (as in *Yamatoa* and *Shyrodes*). *Plesioglymmius* members also differ from those of the latter two genera in having only one spur on each tibia. The range of *Plesioglymmius* is disjunct, with one area including the Greater Sunda Islands and Mindanao, and the other Brazil and Cuba. There are a number of undescribed species. This genus is structurally divergent and some of the more specialized species are among the most bizarre of all Coleoptera. Future studies will probably result in description of two or more subgenera.

Genus *Arrowina* New Genus
(Figs. 45, 49, 51)

Type species – *Rhysodes taprobanae* Fairmaire 1873

Described species –

Arrowina anguliceps (Arrow 1901) NEW COMBINATION

Arrowina nilgiriensis (Arrow 1942) NEW COMBINATION

Arrowina rostrata (Lewis 1888) NEW COMBINATION

Arrowina taprobanae (Fairmaire 1873) NEW COMBINATION

Description. – Habitus and sculpture of dorsum as in Fig. 45. Stylet of antenna very small, in some species scarcely visible; rings of minor setae on Segments V–X; basal setae absent; frontal grooves complete; eye with distinct ommatidia, fully developed and deeper than long in most specimens (strongly reduced, longer than deep in *A. anguliceps*); temporal setae absent; medial angle single.

Pronotum with complete paramedian grooves; marginal and angular setae absent; elytral striae shallow with very coarse punctures; humeral tubercle distinct; elytral setae well developed; Sternum VI with a pair of setae; cleaning organ of anterior tibia entirely distad to base of tarsus, both spurs of anterior tibia distinct; proximal one large, distal one minute; middle and hind tibia each with two spurs; calcaria very small (Fig. 49); hind wings of most specimens fully developed (vestigial in *A. anguliceps*).

Penis (Fig. 51) (studied in *A. anguliceps*) stout, with distinct internal sac, and large, flared orifice, with small, hooked ligula.

This genus is named in honor of Gilbert Arrow, next to Grouvelle, the most important student of the Rhysodini. The name is feminine. The members of this genus are similar in appearance to *Omoglymmius*, but differ sharply by possession of two spurs on each of the middle and hind tibiae. Two species are found in the southern tip of India, one in Ceylon, and one in southern Japan.

Genus *Pyxiglymmius* New Genus
(Fig. 46)

Type species – *Rhysodes strabus* Newman 1838

Described species –

Pyxiglymmius armatus (Arrow 1901) NEW COMBINATION

Pyxiglymmius aterrimus (Chevrolat 1873) NEW COMBINATION

Pyxiglymmius crassiusculus (Lewis 1888) NEW COMBINATION

Pyxiglymmius insularis (Grouvelle 1903) NEW COMBINATION

Pyxiglymmius lederi (Lewis 1888) NEW COMBINATION

Pyxiglymmius pilosus (Grouvelle 1903) NEW COMBINATION

Pyxiglymmius rugosus (Grouvelle 1903) NEW COMBINATION

Pyxiglymmius strabus (Newman 1838) NEW COMBINATION

Pyxiglymmius subcaviceps (Grouvelle 1903) NEW COMBINATION

Description. – Habitus and sculpture of dorsum as in Fig. 46. Segment XI of antenna without stylet, obtuse in most specimens (in one undescribed species with acute stylet-like point); rings of minor setae on Segments V–X; basal setae of antennae present; medial edge of temporal lobe emarginate, with two medial angles (this emargination shallow and inconspicuous in *P. insularis* and *P. rugosus*, deep and conspicuous in other species); paramedian grooves deep, complete; elytral striae coarsely punctured, deep; cleaning organ entirely distad to base of tarsus; anterior femur of male with ventral tooth;

male in most species with distinct proximal tooth on front tibia (absent from a few species); middle and hind tibia each with one spur; penis and hind wings not investigated.

Adults of this genus are characterized by the medial emargination of the temporal lobe, which separates two distinct medial angles. The range of this genus extends through most of the Oriental Region, from Japan to Java, Sumatra and the Andaman Islands, but not India. There is also an undescribed species from Luzon in the Philippine Islands. *P. lederi* was described from the Caucasus, but has not been collected there again, so the label may be erroneous.

P. armatus (Arrow 1901) was synonymized with *P. aterrimus* (Chevrolat 1873) by Grouvelle (1903). A study of the types reveals that they are actually distinct species, distinguished as follows:

- | | | |
|----|---|---|
| 1 | Marginal groove of pronotum linear, much narrower than outer carina of pronotum | <i>Pyxiglymmius aterrimus</i> (Chevrolat) |
| 1' | Marginal groove of pronotum broad and deep, almost as wide as outer carina | <i>Pyxiglymmius armatus</i> (Arrow) |

Genus *Omoglymmius* Ganglbauer 1892
(Figs. 52–79)

(as subgenus of *Rhysodes*; raised to generic rank by Bell 1975)

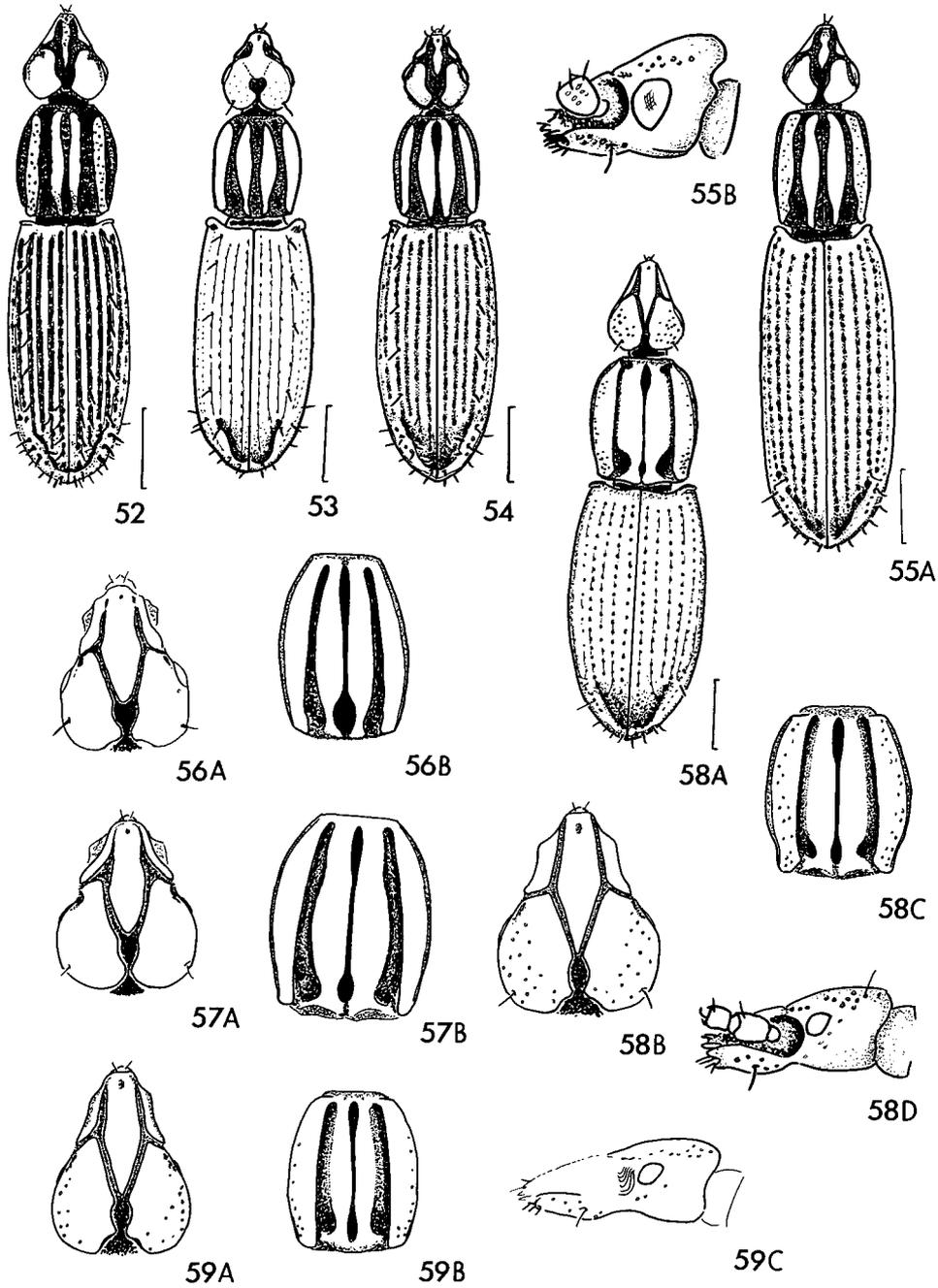
Type species – *Rhysodes germari* Ganglbauer 1892

Description. – Antennal setae and stylet variously developed; medial margin of temporal lobe in form of one distinct medial angle; paramedian grooves deep, distinct; strial punctures various, from coarse to very fine; middle and hind tibiae each with single spur.

This is by far the largest genus of Rhysodini. It is almost cosmopolitan in suitable habitats, but is absent from Madagascar and New Zealand. Only one species is known from each of Africa and South America, and there is one undescribed species from Australia (B.P. Moore, *in litt.*).

KEY TO SUBGENERA

- | | | |
|--------|---|--|
| 1 | Basal setae present, at least in antennal Segments IX, X. | <i>Hemiglymmius</i> new subgenus, p. 74 |
| 1' | Basal setae absent from all antennal segments | 2 |
| 2 (1') | Antenna with apical stylet; frontal grooves very shallow or obsolete | <i>Navitia</i> new subgenus, p. 74 |
| 2' | Antennal stylet absent; frontal grooves well defined | 3 |
| 3 (2') | Eye reduced, with ommatidia not distinct; cornea not faceted or facetting visible only under high magnification; cornea with pinkish pigment; frontal grooves more or less linear; marginal groove fine, linear, complete to partly or entirely effaced | <i>Nitiglymmius</i> new subgenus, p. 75 |
| 3' | Eye large, normal, with distinct ommatidia and faceted, unpigmented cornea; frontal grooves not linear; marginal grooves of pronotum complete | 4 |
| 4 (3') | Spur of middle tibia straight; temporal lobe more or less pointed posteriorly with occipital angle prominent; punctures of Sterna III–V arranged in single transverse row on each sternum. | <i>Orthoglymmius</i> new subgenus, p. 74 |
| 4' | Spur of middle tibia curved anteriorly at tip; temporal lobe not pointed posteriorly, always rounded laterad to occipital angle; punctures of Sterna III–V scattered | <i>Omoglymmius sensu stricto</i> Ganglbauer, p. 75 |



ILLUSTRATIONS OF ADULT OMOGLYMMIINA, *Omoglymmius*. Figs. 52–54, habitus, dorsal aspect—Fig. 52, *O. (Hemiglymmius) africanus* (Grouvelle). Fig. 53, *O. (Navitia) intrusus* (Grouvelle). Fig. 54, *O. (Orthoglymmius) cavifrons* (Grouvelle). Fig. 55, *O. (Omoglymmius) germari* (Ganglbauer): A, habitus, dorsal aspect; B, head, lateral aspect. Fig. 56, *O. (Nitiglymmius) zimmermani*, new species: A, head, dorsal aspect; B, pronotum, dorsal aspect. Fig. 57, *O. (N.) greensladei*, new species: A, head, dorsal aspect; B, pronotum, dorsal aspect. Fig. 58, *O. (N.) fulgens*, new species: A, habitus, dorsal aspect; B, head, dorsal aspect; C, pronotum, dorsal aspect; D, head, lateral aspect. Fig. 59, *O. (N.) lustrans*, new species: A, head, dorsal aspect; B, pronotum, dorsal aspect; C, head, lateral aspect.

Subgenus *Hemiglymmius* New Subgenus
(Figs. 9, 52, 77, 78)

Type species – *Rhysodes africanus* Grouvelle 1892

Described species –

- Omoglymmius (Hemiglymmius) africanus* (Grouvelle 1892) NEW COMBINATION
- Omoglymmius (Hemiglymmius) americanus* (Castelnau 1836) NEW COMBINATION
- Omoglymmius (Hemiglymmius) borneensis* (Grouvelle 1903) NEW COMBINATION
- Omoglymmius (Hemiglymmius) germaini* (Grouvelle 1903) NEW COMBINATION
- Omoglymmius (Hemiglymmius) hamatus* (Leconte 1875) NEW COMBINATION
- Omoglymmius (Hemiglymmius) ineditus* (Dajoz 1975) NEW COMBINATION
- Omoglymmius (Hemiglymmius) javanicus* (Grouvelle 1903) NEW COMBINATION
- Omoglymmius (Hemiglymmius) lewisi* (Nakane 1973) NEW COMBINATION
- Omoglymmius (Hemiglymmius) nicobarensis* (Grouvelle 1895b) NEW COMBINATION
- Omoglymmius (Hemiglymmius) oberthueri* (Grouvelle 1903) NEW COMBINATION

Description.— Habitus and sculpture of dorsum as in Fig. 52. Basal setae on Segments IX, X of antennae (and in many specimens on more proximal segments as well); antennal stylet present in most members (absent in *O. nicobarensis*, *O. americanus* and *O. hamatus*); eye large, normal, cornea faceted; frontal grooves deep, complete, dilated in most specimens; marginal grooves of pronotum deep; spur of middle tibia curved anteriorly at tip, more or less hooked; punctures of Sterna III–V scattered; lateral pits of abdomen in female indistinctly developed on Sterna IV or V or both, or absent.

Penis (investigated in *O. africanus* (Fig. 77) and *O. hamatus* (Fig. 78)) relatively short, thick; internal sac present; orifice nearly apical, no distinct apical lobe; left paramere markedly rounded.

This subgenus is recognized by the presence of basal setae on the antennae. Most specimens have a well-developed antennal stylet, a feature shared within the genus only by *Navitia*, whose members differ in having the frontal grooves obsolete. There is one species each in Africa and South America, two in North America, otherwise the subgenus is confined to the Oriental Region, from Japan to Malaya and the Greater Sunda Islands.

Subgenus *Navitia* New Subgenus
(Fig. 53)

Type species – *Rhysodes intrusus* Grouvelle 1903

Described species –

- Omoglymmius (Navitia) intrusus* (Grouvelle 1903) NEW COMBINATION.

Description.— Habitus and sculpture of dorsum as in Fig. 53. Antennal stylet well developed; basal setae of antenna absent; frontal grooves almost effaced, represented only by vague shallow depressions, temporal lobes apparently merged with median lobe; tip of latter protruded into crescentic frontal space; eye large, normal, ommatidia distinct; Sterna III–V each with single transverse row of punctures; female with deep lateral pits on Sternum IV; spur of middle tibia curved anteriorly at tip; enlarged pit at base of each gular groove; penis and hind wings not investigated.

The very shallow frontal grooves distinguish members of this subgenus from those of all other *Omoglymmius*. The well-developed antennal stylet is shared only with *Hemiglymmius*. The subgeneric name is based on an old name for the Fiji Islands. *Navitia* is confined to Fiji and the New Hebrides.

Subgenus *Orthoglymmius* New Subgenus
(Figs. 54, 70)

Type species – *Rhysodes sulcicollis* Lewis 1888

Described species –

- Omoglymmius (Orthoglymmius) alticola* (Grouvelle 1913) NEW COMBINATION
- Omoglymmius (Orthoglymmius) carinatus* (Grouvelle 1903) NEW COMBINATION
- Omoglymmius (Orthoglymmius) cavifrons* (Grouvelle 1914) NEW COMBINATION
- Omoglymmius (Orthoglymmius) coomani* (Arrow 1942) NEW COMBINATION
- Omoglymmius (Orthoglymmius) crenatus* (Grouvelle 1903) NEW COMBINATION
- Omoglymmius (Orthoglymmius) feae* (Grouvelle 1895b) NEW COMBINATION
- Omoglymmius (Orthoglymmius) hexagonus* (Grouvelle 1903) NEW COMBINATION
- Omoglymmius (Orthoglymmius) longiceps* (Grouvelle 1910) NEW COMBINATION
- Omoglymmius (Orthoglymmius) sulcicollis* (Lewis 1888) NEW COMBINATION

Description.— Habitus and sculpture of dorsum as in Fig. 54. Antennal stylet absent; basal setae of antenna absent; frontal grooves well developed, deep, not linear; margins of temporal lobe oblique both medial and lateral to occipital angle, so temporal lobe pointed posteriorly; eye large, normal, with distinct ommatidia; marginal groove of pronotum deep, complete; spur of middle tibia straight (Fig. 70); Sterna III–V each with single transverse row of punctures; female with deep lateral pits on Sternum V (in some species also with shallower ones on Sternum IV); genitalia and hind wings not investigated.

Shape of temporal lobes and arrangement of punctures of the abdominal sterna are the best recognition marks for this subgenus. It is confined to the Oriental Region, from Japan to Burma, Bhutan, and Sumatra.

Subgenus *Omoglymmius sensu stricto* Ganglbauer
(Figs. 8, 55A–B, 71)

Type species — *Rhysodes germari* Ganglbauer 1892

Described species —

- Omoglymmius (sensu stricto) batchianus* (Arrow 1901) NEW COMBINATION
- Omoglymmius (sensu stricto) bucculatus* (Arrow 1901) NEW COMBINATION
- Omoglymmius (sensu stricto) capito* (Grouvelle 1895a) NEW COMBINATION
- Omoglymmius (sensu stricto) cheesmanae* (Arrow 1942) NEW COMBINATION
- Omoglymmius (sensu stricto) germari* (Ganglbauer 1892) NEW COMBINATION
- Omoglymmius (sensu stricto) gracilicornis* (Grouvelle 1895a) NEW COMBINATION
- Omoglymmius (sensu stricto) humeralis* (Grouvelle 1895a) NEW COMBINATION
- Omoglymmius (sensu stricto) laticeps* (Bell 1977)
- Omoglymmius (sensu stricto) lineatus* (Grouvelle 1908) NEW COMBINATION
- Omoglymmius (sensu stricto) malabaricus* (Arrow 1901) NEW COMBINATION
- Omoglymmius (sensu stricto) malaicus* (Arrow 1901) NEW COMBINATION
- Omoglymmius (sensu stricto) philippensis* (Chevrolat 1875) NEW COMBINATION
- Omoglymmius (sensu stricto) pulvinatus* (Grouvelle 1903) NEW COMBINATION
- Omoglymmius (sensu stricto) quadraticollis* (Arrow 1901) NEW COMBINATION
- Omoglymmius (sensu stricto) sakuraii* (Nakane 1973) NEW COMBINATION
- Omoglymmius (sensu stricto) solitarius* (Arrow 1942) NEW COMBINATION
- Omoglymmius (sensu stricto) vicinus* (Grouvelle 1895a) NEW COMBINATION

Description.— Habitus and sculpture of dorsum as in Fig. 55A. Antennal stylet absent; basal setae of antennae absent; frontal grooves well developed, deep, not linear; eye large, normal (Fig. 55B), with distinct ommatidia, cornea distinctly faceted, not pigmented; marginal groove of pronotum complete; spur of middle tibia bent anteriorly at tip, more or less hooked (Fig. 71); Sterna III–V with punctures scattered; female with more or less distinct lateral pits on Sternum IV, but not on Sternum V; hind wings fully developed.

Penis (investigated in *O. philippensis*) relatively thick, with well-developed internal sac, with patches of teeth or setae. patches of teeth or setae.

The scattered abdominal punctures, curved middle tibia, and rounded temporal lobes distinguish this subgenus from *Orthoglymmius*. Absence of the antennal stylet separates it from *Navitia* and most of *Hemiglymmius*, while the large eyes are the most conspicuous difference from *Nitiglymmius*.

Omoglymmius sensu stricto has a very wide distribution, but is absent from the Americas, Africa, Madagascar, and New Zealand. The Australian *Omoglymmius* to be described by Moore is a possible member of this subgenus. There are a few species each in the Nearctic and Palearctic Regions. The Oriental Region has a moderate number of species, but the subgenus is most numerous in New Guinea, the Philippines, the islands of “Wallacea”, and the Solomon Islands.

Subgenus *Nitiglymmius* New Subgenus
(Figs. 56–59, 72–76, 79)

Type species — *Omoglymmius (Nitiglymmius) fulgens* new species

Description.— Habitus and sculpture of dorsum generally as in Fig. 58A. Antenna with or without stylet; basal setae

of antennae absent; frontal grooves complete but narrow, linear in many specimens, eye reduced, in profile view located entirely above middle of head; ommatidia not distinct; cornea not faceted in most specimens; faceting barely visible at high magnification in *O. zimmermani*; cornea with pinkish tint; silvery white reflecting disc medial to cornea and at angle to it; marginal grooves of pronotum fine, linear, entire or partly or completely effaced; spur of middle tibia with tip curved anteriorly, more or less hooked; punctures of Sterna III–V scattered or in single transverse row on each sternum; lateral pits on Sternum IV in both sexes (where known); ventral surface with bluish opalescence (such opalescence on dorsal surface also in specimens of most species); color of dorsal surface more nearly black than in other Rhysodini; hind wings vestigial.

Penis (studied in *O. lustrans*) (Fig. 79) thick, without apical lobe; internal sac elaborate; right paramere rounded, left one relatively large.

This subgenus includes seven undescribed species, one from Fiji, one from Guadalcanal in the Solomon Islands, and five from New Guinea. All the species are montane. Those of New Guinea live in the highest zone in the mountain forests, above 2000 meters, where they seem to be the only Rhysodini present. Reduced and modified eyes are the best means of distinguishing this subgenus from *Omoglymmius sensu stricto*.

Phylogeny.—This subgenus inhabits three separate land masses; New Guinea, Guadalcanal (Solomon Islands), and Fiji. There appear to be two major phyletic lines, one including the New Guinea species, and the other, the species from the more eastern islands. In the latter group, there is a sharp medial boundary to the paramedian groove, setae are present in elytral Stria IV, and there is no “collar” at the anterior margin of the pronotum. In the New Guinea species, the inner boundary of the paramedian groove is ill-defined, setae are absent from Stria IV, and a pronotal “collar” is well developed. It is surprising that the species from Guadalcanal (*O. greensladei*) is more like the one from Fiji (*O. zimmermani*) than the species from New Guinea, which are much less removed geographically.

The five species from New Guinea probably represent only a fraction of the number that actually occur there, since all the specimens were collected in three relatively small areas, and vast areas have not yet been sampled. Two species *O. fulgens* and *O. lustrans*, inhabit the most eastern high mountains, two more, *O. hornabrooki* and *O. offafinus*, live in the east central region, and one, *O. toxopei*, is from the western part of the island. The species within each region are clearly closer to one another than to those of the other regions. *O. lustrans* and *O. fulgens* form a sharply defined subgroup, characterized by a long acute median lobe, linear frontal grooves, and a very small frontal space. The remaining three species have a shorter median lobe, more or less rounded posteriorly, non-linear frontal grooves, and a larger frontal space. *O. hornabrooki* and *O. offafinus* are linked together by the presence of an incomplete marginal groove on the pronotum and well-developed punctuation on the outer carina of the pronotum. *O. toxopei* has complete marginal grooves and nearly impunctate outer carinae.

The known species from New Guinea suggest two episodes of speciation. First, a common ancestor spread throughout the highlands of New Guinea, either at a time when the climate was cooler than now, or else when the subgenus was able to live at a lower altitude than it now inhabits. Next, it divided into three allopatric daughter-species, each localized in a single area of high mountains, as the subgenus was forced out of the lower intervening areas, either by a warming climate, or by competition from other genera of Rhysodini. A second episode of speciation followed the fragmentation of the daughter species, as they were forced higher into the mountains. Finally, at least for *O. lustrans* and *O. fulgens*, the disappearance of a barrier allowed the two species to become sympatric. It is not clear at the moment whether or not *O. hornabrooki* and *O. offafinus* are sympatric, since each is known from a single locality.

KEY TO SPECIES

- 1 Pronotum relatively elongate, its margins evenly curved to apex, not constricted to form “collar” 2

1'	Pronotum less elongate, its sides abruptly narrowed anteriorly, forming "collar" at apex	3
2 (1)	Antennal stylet distinct; posterior median pit of pronotum large, as wide as basal impression; elytral striae distinctly impressed	
 <i>O. zimmermani</i> new species, p. 77	
2'	Antennal stylet absent; posterior median pit small, narrower than basal impression; striae not impressed	
 <i>O. greensladei</i> new species, p. 78	
3 (1')	Postorbital tubercles distinct	4
3'	Postorbital tubercles absent	5
4 (3)	Pronotum distinctly narrowed at apex; lateral margin of pronotum sinuate just anterior to hind angles; posterior median pit large, as wide as basal impression	
 <i>O. hornabrooki</i> new species, p. 81	
4'	Pronotum only slightly narrowed anteriorly, lateral margin not sinuate; posterior median pit very small, much narrower than basal impression	
 <i>O. offafinus</i> new species, p. 81	
5 (3')	Marginal groove of pronotum present	6
5'	Marginal groove absent	
 <i>O. lustrans</i> new species, p. 80	
6 (5)	Frontal grooves very fine, linear; median lobe long, acutely pointed, extending posterior to middle of temporal lobes	
 <i>O. fulgens</i> new species, p. 80	
6'	Frontal grooves broader, not linear; median lobe short, obtusely pointed, not extending to middle of temporal lobes	
 <i>O. toxopei</i> new species, p. 82	

Omoglymmius (Nitiglymmius) zimmermani New Species

(Figs. 56A–B, 63, 72)

Type material — HOLOTYPE male, labelled: FIJI, Nandarivatu, Viti Levu 3700', XI–10–38, rotten logs, E.C. Zimmerman (BPBM)

PARATYPES: 9, all from Viti Levu, Fiji, one male, 3 females with same data as type; two females, Navai-Nasonga Trail, XI–12–38, summit, 3400', fallen branches, E.C. Zimmerman; one male, 2 females, Nandarivatu, Mount Yoa, X–5–39, J.M. Valentine (all BPBM).

Description. — Length 6.3–7.2 mm; form elongate for subgenus; opalescent sheen slight on ventral side, not evident dorsally; antennal Segment XI pointed, with distinct blunt, peg-like stylet; head (Fig. 56A) with median lobe obtuse posteriorly, ended opposite middle of temporal lobe; frontal grooves straight, narrow; posterior end of antennal groove slightly dilated, in form of pit anterior to eye; orbital groove vague, faint, extended approximately to middle of eye; frontal space as wide as long; medial angles distinct, slightly separated; margin posterior to medial angle sinuate; temporal lobe impunctate, one temporal seta in conspicuous puncture; eye oval, oblique, better developed than in other *Nitiglymmius*, slightly visible in dorsal view; depth of eye about 0.33 depth of head; postorbital tubercle absent, mentum with about 12 coarse punctures; gular grooves dilated anteriorly, in form of pair of pits (posterior tentorial pits) at base of mentum.

Pronotum (Fig. 56B) relatively long and narrow ($L/GW=1.43$), margins curved evenly into apex (no distinct "collar"); inner and outer carinae nearly equal in width; all carinae impunctate; median groove deep, posterior median pit conspicuously enlarged; paramedian grooves deep throughout, expanded posteriorly in form of narrow, deep basal impressions; both inner and outer boundaries of paramedian grooves deep, abrupt; lateral margin scarcely sinuate anterior to hind angle; marginal grooves complete, narrow, deep, impunctate; no epipleural punctures; prosternum with intercoxal pit deep, linear.

Elytra relatively long, narrow, sides clearly parallel in middle 0.33; humeral tubercles prominent; elytral striae distinctly impressed; usually two setae in Stria IV, one near base, other near apex; one seta in apical striole; one seta on medial slope of apical tubercle; three to five setae near tip of Stria VII; mesosternum with median groove with two punctures, posterior one larger, and with a pair of oblique grooves, each with three or four punctures; metasternum opalescent, nearly evenly convex, without median impression; Sterna III–V each with a complete or nearly so transverse row of punctures (Fig. 63); male without tooth on anterior femur; very few punctures on legs; calcaria of male very small (Fig. 72).

The presence of an apical stylet on the antenna and the impressed striae differentiate this species from all of its relatives.

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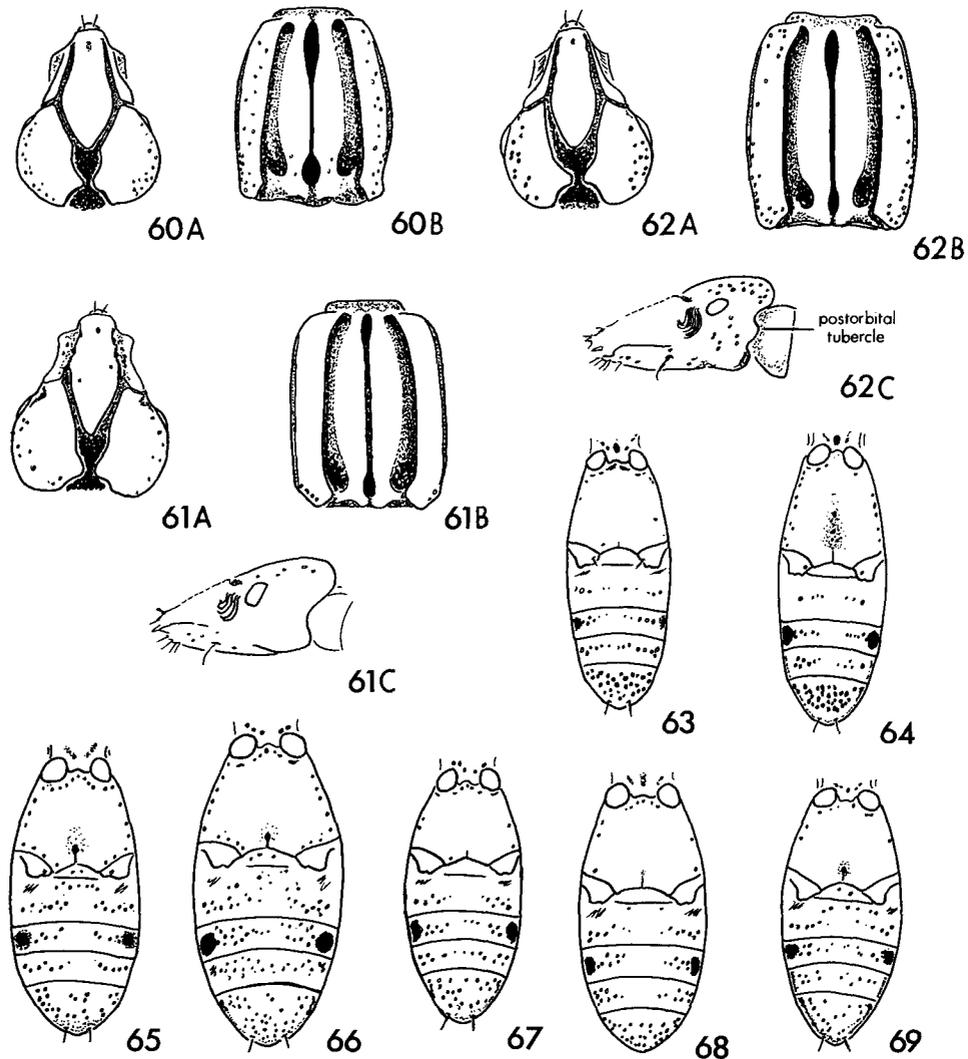


ILLUSTRATION OF ADULT OMOGLYMMIINA, *Omoglymmius* (*Nitiglymmius*), new species. Fig. 60, *O. (N.) hornabrooki*: A, head, dorsal aspect, B, pronotum, dorsal aspect. Fig. 61, *O. (N.) toxopei*: A, head, dorsal aspect, B, pronotum, dorsal aspect; C, head, lateral aspect. Fig. 62, *O. (N.) offafinus*: A, head, dorsal aspect; B, pronotum, dorsal aspect; C, head lateral aspect. Figs. 63–69, pterothorax and abdomen, ventral aspect—Fig. 63, *O. (N.) zimmermani*: male. Fig. 64, *O. (N.) greensladei*, male. Fig. 65, *O. (N.) fulgens*, male. Fig. 66, *O. (N.) lustrans*, female. Fig. 67, *O. (N.) hornabrooki*, female. Fig. 68, *O. (N.) offafinus*, male. Fig. 69, *O. (N.) toxopei*, female.

Omoglymmius (*Nitiglymmius*) *greensladei* New Species
(Figs. 57A–B, 64, 73)

Type Material — HOLOTYPE male, labelled: SOLOMON IS., Guadalcanal, Popamanasin, 5500', 25–10–1965; P. Greenslade (20222) (Solomon Is. Pres. P.J.M. Greenslade, B.M. 1966-477) (BMNH).

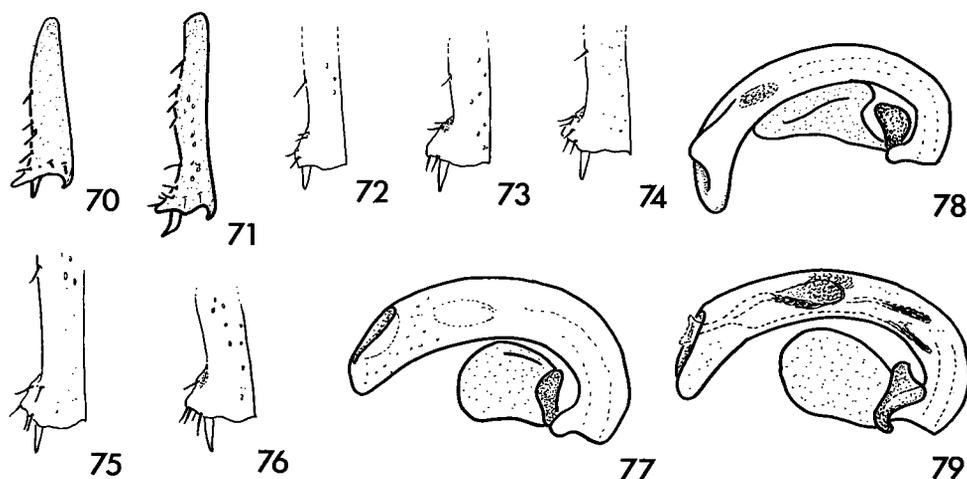
PARATYPE male, same date and locality as holotype, elevation 4300'; P. Greenslade (20275) (BMNH).

Description. — Length 6.2–6.6 mm; form elongate for subgenus; opalescent sheen slight on ventral side, not evident dorsally; antennal segment XI obtuse, stylet absent; head (Fig. 57A) slightly longer than wide; median lobe of head obtusely pointed posteriorly, ended anterior to middle of temporal lobe; frontal grooves straight, narrow; orbital groove slightly impressed anteriorly, represented by row of punctures posteriorly, extended about to middle of eye; frontal space small; medial angles obtusely rounded, margins posterior to them not sinuate; temporal lobe impunctate; one temporal seta or none (various unilaterally); eye oval, scarcely visible in dorsal view; postorbital tubercle absent; mentum with about 25–30 scattered punctures; gular grooves slightly impressed, punctate, but without anterior enlargement.

Pronotum (Fig. 57B) clearly longer than wide, $L/GW=1.25$; lateral margins evenly narrowed anteriorly, not in form of “collar” at apex, scarcely sinuate anterior to hind angles; inner and outer carinae of nearly equal width, inner ones slightly dilated behind middle; all carinae completely impunctate; median groove deep; posterior median pit small, about equal to anterior median pit, much narrower than basal impression; paramedian grooves narrow, deep, both inner and outer sides well defined; marginal grooves complete, linear; epipleura with two to six punctures.

Elytra elongate, almost parallel-sided at middle; humeral tubercles prominent; elytral striae not impressed, represented by rows of small, shallow punctures; one seta near base of Stria IV; another may be present at apex of this stria; one or more setae in apex of Stria VII; mesosternum with deep median groove with three or four punctures, also with pair of oblique lateral grooves each with two punctures; metasternum with faint posterior median slit, and anterior to it in midline with broader, less definite median impression with a few punctures; Sterna III–V each with punctures in slightly confused transverse rows; lateral pit of Sternum IV deep (Fig. 64); hind calcar of male prominent (Fig. 73).

This species is easily distinguished from all the New Guinea species by lack of an anterior “collar” on the pronotum, and from *zimmermani* by the striae not being impressed and by the absence of an antennal stylet.



ILLUSTRATIONS OF ADULT OMOGLYMMIINA: *Omoglymmius*. Fig. 70–71, middle tibia, male—Fig. 70, *O. (Orthoglymmius) cavifrons* (Grouvelle). Fig. 71, *O. (Omoglymmius) germari* (Ganglbauer). Figs. 72–76, *O. (Nitiglymmius)*, new species, hind tibia, male, apical portion. Fig. 72, *O. (N.) zimmermani*. Fig. 73, *O. (N.) greensladei*. Fig. 74, *O. (N.) fulgens*. Fig. 75, *O. (N.) lustrans*. Fig. 76, *O. (N.) offafinus*. Figs. 77–79, penis and parameres, right lateral aspect—Fig. 77, *O. (Hemiglymmius) africanus* (Grouvelle). Fig. 78, *O. (Hemiglymmius) hamatus* (Leconte). Fig. 79, *O. (Nitiglymmius) lustrans*, new species.

Omoglymmius (Nitiglymmius) fulgens New Species
(Figs. 58A–D, 65, 74)

Type material – HOLOTYPE male, labelled: NEW GUINEA, N.E., Bulldog Road, c 14 km s. Edie Cr. 2405 m, 4–10 VII–1966, G.A. Samuelson (BPBM).

PARATYPE female, labelled: NEW GUINEA, N.E., Wau, 2400 m 9–12–I–1962, J.H. and M. Sedlacek, G. Monteith and native (BPBM).

Description. – Habitus and sculpture of dorsum as in Fig. 58A. Length 6.5 (male)–8.0 (female) mm; dorsal surface distinctly opalescent; antennal Segment XI obtuse, stylet absent; head (Fig. 58B) with median lobe three times longer than wide, its apex acute, extended distinctly posterior to middle of temporal lobe; frontal grooves long, straight, linear; no trace of orbital groove; frontal space very small and narrow; medial angles obtusely rounded, slightly separated; margin posterior to medial angle sinuate; one or two temporal setae; temporal lobe with 10–15 scattered punctures, mostly in lateral region; eye (Fig. 58D) oval, oblique, scarcely visible in dorsal view; postorbital tubercle absent; mentum punctate; gular grooves very fine, shallow; transverse depression present between mentum and submentum.

Pronotum (Fig. 58C) slightly longer than wide, L/GW=1.12, anterior end in form of distinct “collar”; lateral margin curved into “collar” anteriorly, slightly sinuate just anterior to hind angle; outer carina slightly wider than inner one, with about 25 punctures scattered along its lateral margin; median groove deep, narrow, anterior and posterior median pits equal, moderately large; lateral margin of paramedian groove distinct, but median margin sloped gradually from inner carina; marginal grooves narrow, complete to hind angle, faintly punctate; epipleura with 18–20 punctures.

Elytra oval, humeral tubercles prominent; stria not impressed; Stria VII with four or five setae near apex, elytral setae otherwise absent; mesosternum without median groove, but with pair of oblique, punctured lateral grooves; metasternum with deep median pit in posterior 0.25, connected by short groove to posterior margin; Sterna III–V each with irregular transverse row of punctures, interrupted in midline (Fig. 65); anterior femur of male without ventral tooth; hind calcar of male (Fig. 74) fairly prominent, slightly notched at base.

Shape of the median lobe, and form and punctation of the pronotum make this species very similar to *O. lustrans*, from which it is easily separated by presence of a marginal groove

Omoglymmius (Nitiglymmius) lustrans New Species
(Figs. 59A–C, 66, 75, 79)

Type material – HOLOTYPE male, labelled: NEW GUINEA, N.E., 19–29 km S of Wau, Bulldog Road, 2200–2500 m, 31–V–1962, J. Sedlacek (BPBM).

PARATYPES 5, all from NEW GUINEA, N.E. as follows: 2 males labelled: Edie Creek, Wau, 2000 m, 10–X–1961, 5–IV–1962, J&M Sedlacek; one male, Mt. Kaindi, 16 km SW of Wau, 2300 m, 8–9–VI, 1962, J. Sedlacek; 2 females, Mt. Missim, 2040–2400 m, 22–30–IV–1968, J.L. Gressitt, R.C.A. Rice, J. Sedlacek (BPBM).

Description. – Length 5.9–7.3 mm, opalescent both dorsally and ventrally; antennal Segment XI obtuse, without stylet; head (Fig. 59A) with median lobe acutely pointed posteriorly, almost four times longer than wide, extended distinctly posterior to middle of temporal lobe; frontal grooves long, straight, linear; faint orbital groove ended near anterior margin of eye; frontal space very small, narrow; medial angles obtusely pointed, slightly separated; margin posterior to medial angle slightly sinuate; temporal lobe with 10–15 irregularly scattered punctures; temporal setae absent; eye (Fig. 59C) oval, oblique, scarcely visible in dorsal view; postorbital tubercle absent; mentum with few punctures; gular grooves very fine, shallow; transverse depression present between mentum and submentum.

Pronotum (Fig. 59B) slightly longer than wide, L/W=1.26; anterior end in form of distinct “collar”, sides slightly curved, more sharply and abruptly narrowed to “collar” than in *fulgens*, barely sinuate anterior to hind angle; outer carina wider than inner one, with 17–20 punctures along its lateral margin; median groove deep, narrow, pits nearly equal, but posterior one longer and narrower than anterior one; lateral margin of paramedian groove sharply defined but medial angle sloped gradually from inner carina; marginal groove absent; epipleural region without punctures.

Elytra oval; humeral tubercles prominent; striae not impressed; Stria VII with four or five setae near apex; elytral setae otherwise absent; mesosternum and metasternum as in *fulgens*; abdominal Sterna III–V with scattered fine punctures; lateral pit of Sternum IV shallow in both sexes (Fig. 66); anterior femur of male without ventral tooth; hind calcar of male small, not notched (Fig. 75); penis as in Fig. 79.

This species is easily distinguished from all other members of the subgenus by absence of the marginal groove of the pronotum.

Omoglymmius (Nitiglymmius) hornabrooki New Species
(Figs. 60A–B, 67)

Type material – HOLOTYPE female, labelled: NEW GUINEA: Kamira, Okapa, Eastern Highlands, 2–9–1964, R. Hornabrook (NMNZ).

Description. – Length 5.8 mm, indistinctly opalescent dorsally, distinctly so ventrally; antennal Segment XI obtusely pointed, stylet absent; head (Fig. 60A) with median lobe rounded posteriorly, ended anterior to middle of temporal lobes; frontal grooves relatively short, widened posteriorly; no trace of orbital groove; frontal space large, as wide as long; medial angles subacute, slightly separated; margin posterior to medial angles strongly sinuate; temporal lobe with 12–15 punctures mostly near lateral margin; temporal setae absent; eye oval, scarcely visible in dorsal view; postorbital tubercle present, though small; about 12–15 punctures present below eye; mentum with many punctures; gular grooves indistinct; no depression between mentum and submentum.

Pronotum (Fig. 60B) slightly longer than wide, L/GW=1.19; anterior end in form of distinct “collar”, pronotum distinctly narrowed anteriorly, margins shallowly sinuate just anterior to hind angles; carinae of equal width; outer carina distinctly narrowed anteriorly, with 30–35 scattered punctures, mostly in outer half; median groove deep, narrow; posterior median pit enlarged, wider than anterior median pit, and equal in width to basal impression; lateral margin of paramedian groove sharply defined, medial margin sloped gradually from inner carina; marginal groove deep anteriorly, represented by discontinuous row of punctures in posterior 0.25; epipleura with nine or ten punctures.

Elytra oval, humeral tubercle obtuse; striae not impressed; five or six setae near tip of Stria VII, elytral setae otherwise absent; mesosternum with five punctures arranged in V-shaped pattern; metasternum with very short median slit at posterior margin, this not ended in pit anteriorly; punctures of abdominal Sterna III–V scattered, but tending to form transverse row on each segment (Fig. 67).

This species is most similar to *O. offafinus* in structure of the head, but has a distinctive pronotum, combining relatively broad outer carinae with a shallow sinuation anterior to the hind angle, a distinctly narrowed anterior end, and an enlarged posterior median pit.

Omoglymmius (Nitiglymmius) offafinus New Species
(Figs. 62A–C, 68, 76)

Type material – HOLOTYPE male, labelled: NEW GUINEA: Offafina, Okapa, 15–7–1964 R. Hornabrook (NMNZ).

Description. – Length 6.2 mm; distinctly opalescent dorsally; antennal Segment XI obtuse, stylet absent; head (Fig. 62A) with median lobe obtusely rounded posteriorly, ended anterior to middle of temporal lobes; frontal grooves relatively short, becoming wider posteriorly; orbital groove absent; frontal space relatively large, slightly wider than long; medial angles subacute, slightly separated; margin posterior to medial angles strongly sinuate; temporal lobe with 12–15 punctures mostly near lateral margin; temporal seta absent; eye (Fig. 62C) oval, scarcely visible in dorsal view; postorbital tubercle present, though small; eight to nine punctures below each eye; mentum with many punctures; gular grooves indistinct; no depression between mentum and submentum.

Pronotum (Fig. 62B) slightly longer than wide, L/GW=1.18; distinct “collar” anteriorly; pronotum much less narrowed anteriorly than in *O. hornabrooki*, margins almost parallel, in form of nearly right angle with apex; margin not sinuate anterior to hind angle; outer carina slightly wider than inner one, not narrowed anteriorly, with 32–35 scattered punctures; median groove deep, narrow; posterior median pit much smaller than anterior median pit, much narrower than basal impression; lateral margin of paramedian groove sharply defined, medial margin sloped gradually from inner carina; marginal groove distinct in anterior 0.66, absent from posterior 0.33; epipleuron with about 25 scattered punctures.

Elytra oval, humeral tubercle obtuse; striae not impressed; three or four setae at tip of Stria VII; elytral setae otherwise absent; mesosternum with median groove with three punctures, and two oblique lateral grooves, each with one or two punctures; metasternum with short median slit, dilated into slightly expanded pit at anterior end; abdominal Sterna III–V with six to eight punctures on each side, tending to form transverse row, broadly interrupted at midline (Fig. 68).

Male with small ventral tooth on anterior femur; hind calcar fairly prominent (Fig. 76).

In shape of the median and temporal lobes, this species resembles *O. hornabrooki*, but specimens are easily distinguished from those of the latter by the quadrangular form of the pronotum. The form of the pronotum approaches that of *O. toxopei*, but the latter species has complete marginal grooves and lacks postorbital tubercles.

Omoglymmius (Nitiglymmius) toxopei New Species
(Figs. 61A–C, 69)

Type material – HOLOTYPE female, labelled: NEW GUINEA: Neth. Ind.—American New Guinea Expedition, Top Camp, 2100 m., 25–I–1939, L.J. Toxopeus, (LEI).

Description. — Length 6.0 mm; scarcely opalescent dorsally, distinctly so ventrally, antennal Segment XI obtuse, stylet absent; head (Fig. 61A) with median lobe obtusely pointed posteriorly, ended slightly anterior to middle of temporal lobes; frontal grooves relatively short, widened posteriorly; no orbital groove; frontal space relatively large, nearly as wide as long; medial angles obtusely rounded, well separated; margin strongly sinuate posterior to medial angle; temporal lobes with five to eight small punctures scattered near posterior margin; temporal setae absent; eye (Fig. 61C) obliquely oval, scarcely visible in dorsal view; postorbital tubercle absent; no punctures below eye; mentum with many punctures; gular grooves indistinct; no transverse impression between mentum and submentum.

Pronotum (Fig. 61B) longer than wide, $L/GW=1.21$, anterior end in form of distinct “collar”, pronotum with sides almost parallel, scarcely narrowed anteriorly, lateral margin scarcely sinuate anterior to hind angle; outer carina not narrowed anteriorly, slightly wider than inner one, nearly impunctate, with a few punctures near hind angle; median groove deep, wider than in other *Nitiglymmius*, pits less distinctly widened; the posterior pit slightly wider than anterior pit; lateral margin of paramedian groove sharply defined, medial margin sloped more gradually from inner carina; marginal groove complete, fine; epipleuron nearly impunctate, with one or two punctures near hind angle.

Elytra oval, humeri slightly flattened, humeral tubercle obtuse; striae not impressed; three or four setae at tip of Stria VII elytral setae otherwise absent; mesosternum with median pit and pair of oblique lateral pits; metasternum with median slit near posterior margin, ended anteriorly in small pit; punctures of Sterna III–V scattered; lateral pit of Sternum IV shallow (Fig. 69).

The nearly rectangular pronotum with the outer carinae almost impunctate will identify this species. The only similarly shaped species, *O. offafinus*, has distinctly punctate outer carinae.

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1. This is intended to be a complete list of references, for use with not only the present paper but, also with those that will be published subsequently, in this series. Thus, some of the entries are not cited in the text of this paper.

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