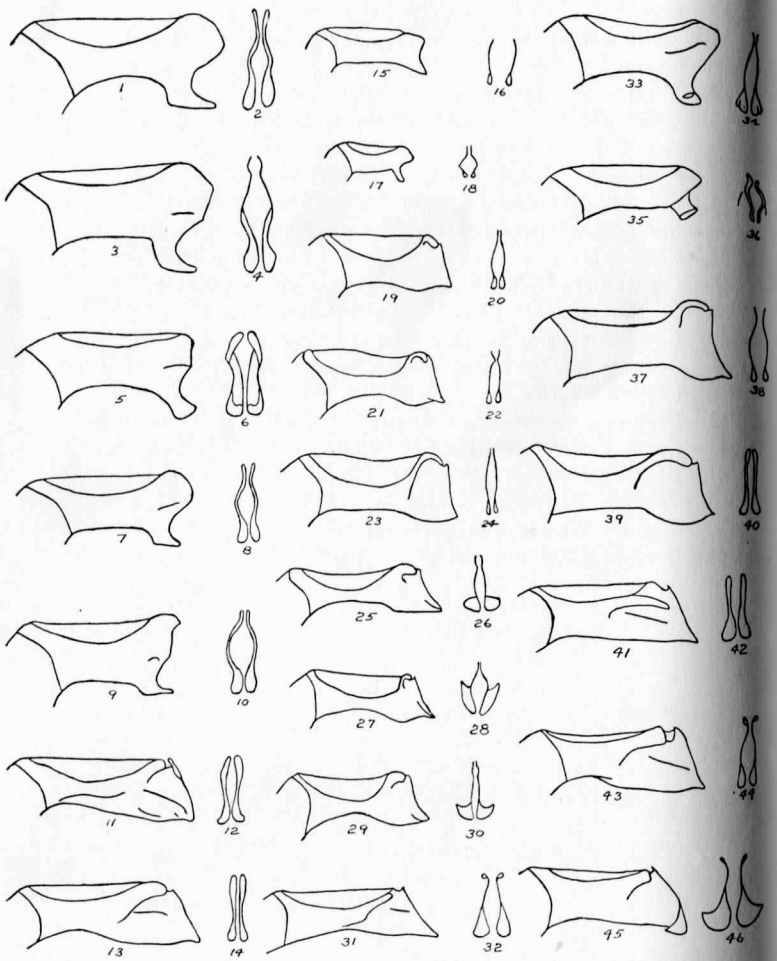

ROBINSON—GENUS CANTHON

A PRELIMINARY GENERIC REVISION OF THE HIGHER DACETINI

(HYMENOPTERA: FORMICIDAE)

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(Text-figures)

The list given below includes new generic and subgeneric names for dacetine species hitherto included in the genera *Strumigenys* Fred. Smith, *Epitritus* Emery, *Epopostruma* Forel, and *Codiomyrmex* Wheeler. There are also indicated some major and minor changes with regard to the status of several older names. The present paper is to be regarded as strictly preliminary in nature, its main purpose being to clarify the highly confused generic classification in the *Dacetini* in time for the inclusion of the corrected system in large area works on the *Formicidae* now being prepared in North America, Australia and elsewhere within the range of the tribe. A full revision of the world *Dacetini* upon which the author has embarked will further discuss the changes made herein and afford fuller descriptions, keys, figures and other material of taxonomic value. Several of the genera here listed may undergo further division on the subgeneric or generic levels. This is true especially of *Strumigenys* and *Smithistruma* new genus. The study is not far enough advanced at present to include these relatively unimportant changes.

Abbreviated synonymies and outstanding characters of the groups involved are included for the convenience of compilators; they are not intended to be comprehensive.

An artificial key is given at the end of this paper which, it is hoped, will afford a rapid means of identifying to genus any dacetine ant described up to the present. There are undoubtedly

a large number of totally new genera as yet uncollected, since the habits of the tribe in general are such as to cause them to be poorly represented in collections out of all proportion to probable abundance in many localities.

In the list given immediately below, an asterisk (*) following a generic or subgeneric name indicates that the description and discussion given in the body of the paper is adapted from the original description and figures plus such other references as could be found in the literature; in none of these cases has the present author seen examples of the insects discussed. The absence of an asterisk with a name means that at least one species has been examined during the course of the preparation of this work.

List of Genera and Subgenera of the Dacetini

Acanthidris Weber *
Acanthognathus Mayr
Alistruma new genus
Basiceros Fred. Smith
Clarkistruma new genus
Codiomyrmex Wheeler
Colobostruma Wheeler
Daceton Perty
Dorisidris new genus *
Epitritus Emery
Epopostruma Forel
Glamyromyrmex Wheeler
Heptastruma Weber *
Hexadaceton new genus
Hypopomyrmex Emery *
Labidogenys Roger
Mesostruma new genus
Miccostruma new genus *
Microdaceton Santschi *
Neostruma new genus
Octostruma Forel
Orectognathus Fred. Smith
Pentastruma Forel *
Peronomyrmex Viehmeyer *
Rhopalothrix Mayr
Smithistruma new genus
  Serrastruma new subgenus
  Smithistruma new subgenus
  Weberistruma new subgenus
  Wessonistruma new subgenus
Strumigenys Fred. Smith
  subgenus Strumigenys s. str.
  subgenus Pyramica Roger
Talaridris Weber *
Tingimyrmex Mann

Genera with Six-jointed Antennae, Formerly Included in Strumigenys Fred. Smith

LABIDOGENYS Roger (fig. 1)

1862. *Labidogenys* Roger, Berlin. Ent. Zeitschr., VI, pp. 249–250, Pl. 1, fig. 17, worker.

1863. *Strumigenys* Fred. Smith, *sensu* Roger, part. Verz. Formicid, p. 40.

Specimens from the Philippines and Java, which agree quite well with Roger's original description of *L. lyroessa* from Ceylon, show

that the original generic designation was a correct one. The distinctive characters are the dorso-ventrally flattened head and the peculiar structure of the mandibles, which differ from those of *Strumigenys* in that they are abruptly expanded in a lateral direction just distad of the anterior clypeal border and gradually narrowed from that point on to the apices. The tip of each mandible bears an apical fork and one prominent preapical tooth, and the inner border just at, and beneath, the anterior apron of the clypeus bears a prominent lamellate lobe, of which the apex is rounded and directed inward and posteriorly when the mandibles are closed. The mandibles when closed tilt somewhat dorsad from the median longitudinal axis of the head. Thorax depressed and rather broad anteriorly, but not laterally marginate. Otherwise much as in *Strumigenys;* size small.

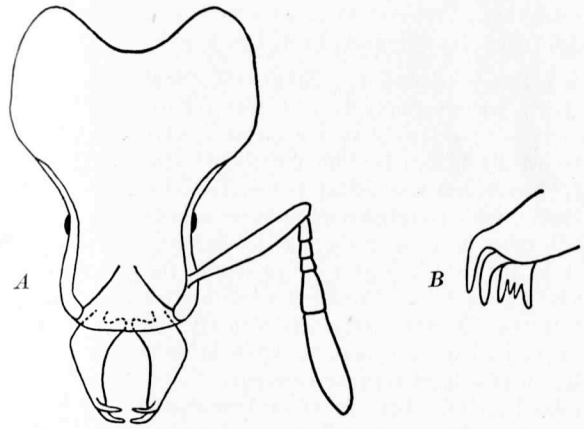

Fig. 1.—*Labidogenys* sp. near *lyroessa* Roger, worker. A. Outline of dorsal aspect of head. B. Enlargement of tip of mandible viewed from the dorsal side and looking toward the apex. Buitenzorg, Java.

GENOTYPE: *Labidogenys lyroessa* Roger, 1862, Berlin. Ent. Zeitschr., VI, p. 251, Pl. 1, fig. 17, worker. (Monobasic.)

Includes also the species *L. emdeni* Forel from Australia, and probably *biroi* Emery from New Guinea.

SMITHISTRUMA new genus

1863. *Strumigenys* Fred. Smith; *sensu* Roger, part. Verz. Formicid, p. 40.
1864. *Cephaloxys* Fred. Smith, name preoccupied. Journ. Linn. Soc. Lond., VIII, p. 77.
1869. *Strumigenys* (*Trichoscapa*) Emery, part. Ann. Accad. Aspir. Nat. Napoli (2), II, p. 24.
1875. *Epitritus* Emery, part. Bull. Soc. Ent. Ital., I, p. 136.
1922. *Strumigenys* (*Cephaloxys*) *sensu* Emery, part, subgeneric name preoccupied. Gen. Ins., Hymen., Fasc. 174, p. 134.

Mandible narrowly triangular to linear-subtriangular, somewhat depressed and with fairly well-developed basal border differentiated from the apical border and running obliquely to the longitudinal axis of the head, often partially or wholly hidden beneath the clypeal apron when the mandibles are closed. The apical mandibular borders serially toothed, minutely serrate, or, rarely, with serrulation reduced to practically edentate condition, meeting each other on or near the anterior projection of the median longitudinal axis of the head, though more or less of the apical portions may be slightly deflected ventrally. The teeth when present are crowded and vary in size and shape with the species and also often among themselves on an individual mandible, usually more than ten in number, the apicalmost not modified into a prominent forklike structure.

Rest of head and the body in general much like that of *Strumigenys*. Characteristically with abundant hairs on the dorsum of the head, these often bizarre in form. Sculpture of head, thorax and petiolar and postpetiolar nodes for the most part granular and opaque, of the gaster, usually smooth and shining, with fine longitudinal striae at the base as in most *Strumigenys*. Epinotum armed with spines, lamellae, or both, spongiform appendages of petiole and postpetiole most often abundantly developed. Size small to very small; color varying from testaceous to blackish ferrugineous.

GENOTYPE: *Strumigenys pulchella* Emery, 1895, Zool. Jahrb. Syst., VIII, pp. 327–328, Pl. 8, fig. 19, worker. (By present designation.)

This genus is erected to receive the "short-mandibulate" species which formed the subgenus *Cephaloxys* of *Strumigenys*. M. R. Smith has shown that the subgeneric name is preoccupied and that Emery's old subgeneric name *Trichoscapa* is available for the group as next choice. The type of *Trichoscapa,* however, is Emery's *T. membranifera,* which here is regarded as completely separate generically from the great majority of forms heretofore included in *Strumigenys*. With certain other minor exceptions, this majority of short-mandibulate forms is elevated to the rank of genus and given the new name which this act requires.

This genus is named for Dr. Marion R. Smith of the United States National Museum, an outstanding myrmecologist and the first reviser of the North American *Strumigenys*. Dr. Smith's constant attention and aid in my revisionary studies of the *Dacetini* has proven the greatest single factor in rendering the relationships within the tribe intelligible, and his loans of material from the National Museum and Mann collections form the backbone of my New World material.

Smithistruma is a large and heterogeneous group which will undoubtedly be further split in the future, but until more detailed studies are made, only the four subdivisions listed below may be safely made. The Wessons have shown that many of the North American species subsist for the most part on *Collembola,* which animals they capture in a very characteristic way. The genus is nearly world-wide in distribution apparently found lacking only in the colder parts of Canada and the Rockies, northern Eurasia, New Zealand, Australia, and the "Antarctic Tip" of South America.

Smithistruma new subgenus

Mandibles projecting beyond most anterior point of the anterior clypeal border to a distance of from one-half to one and one-half times the greatest length of the clypeus. Mandibular teeth less than twenty in number, usually crowded and non-uniform in a characteristic pattern varying with the species. Basalmost tooth differentiated from the apical series, in the form of an enlarged, stout, erect, acute tooth or a plate-like and often translucent lamella, placed immediately adjacent to the basalmost tooth of the apical series or separated by a distinct diastema from the latter. This tooth marks the approximate position of the angle between the basal and apical mandibular borders and is often partially or wholly hidden beneath the clypeal apron when the jaws are closed.

Head hairs, especially those of the clypeus, abundant, well-developed and often bizarre in shape.

SUBGENOTYPE: same as for the genus.

Includes the Mediterranean *baudueri* Emery; the East Asian *japonica* Ito; the Indomalayan species *capitata* Fred. Smith, *jacobsoni* Menozzi, *karawajewi* Brown, *dohertyi* Emery, *inezae* Forel and its subspecies, and several undescribed forms under study at present; the African species *emarginata* Mayr and *transversa* Santschi and all the New World species formerly included in

Strumigenys (*Cephaloxys*) except *membranifera* Emery and its subspecific forms and the two species *pergandei* Emery and *angulata* M. R. Smith.

Wessonistruma new subgenus

Mandibles slender, subarcuate; roughly speaking, the exposed portion of the mandibles equal to the length of the clypeus; basal tooth stout, acute, situated just anterior to the clypeal border and separated from the apical series of teeth by a very large diastema which is nearly as long as, to longer than, the space occupied by the apical series. Clypeus rather broad, at least the middle portion of its anterior edge transverse. Head hairs squamiform, broadly suborbicular to orbicular on at least the vertex. Otherwise much as in the subgenus *Smithistruma* s. str.

SUBGENOTYPE: *Strumigenys pergandei* Emery, 1895, Zool. Jahrb. Syst., VIII, pp. 326–327, Pl. 8, figs. 17, 18, worker, female, male. (By present designation.)

This genus is named for Dr. Laurence G. Wesson, Jr., who, with his brother, Mr. Robert G. Wesson, has made the first significant step toward solving the mysteries of dacetine biology, and who has added several interesting new species to the North American fauna. The author is deeply indebted to these two workers for their contributions of specimens and advice toward the completion of the revision.

Wessonistruma embraces the common species *pergandei,* which ranges from southern Canada through the eastern half of the United States to Virginia and Tennessee, and the rare species *angulata* M. R. Smith from the Mississippi Valley.

Weberistruma new subgenus

Head elongate to about the same degree as in *Smithistruma* (*S*). *clypeata* Roger and related species, with convex, shining clypeal surface. Mandibles very convex for a *Smithistruma,* the entire exposed portion of the apical borders set with crowded acute teeth. Since only one specimen is available, and that the *holotype* of *leptothrix* Wheeler, it was felt undesirable to attempt the opening of the mandibles so as to ascertain the possible occurrence of a differentiated basal tooth. Dorsal surface of head above with longitudinal rugation, hairs on upper dorsum of head erect and somewhat anteriorly directed, remarkably long and slender, with enlarged tips. Hairs on clypeus very much reduced and closely appressed to the surface of the clypeus, which they do not obscure to any significant degree.

SUBGENOTYPE: *Strumigenys* (*Cephaloxys*) *leptothrix* Wheeler, 1929, Boll. Lab. Zool. Portici, XXIV, pp. 55–57, fig. 7, worker. (Monobasic.)

The subgenus is named in honor of Dr. Neal A. Weber in recognition of his important work with New World *Dacetini,* of which he has described three genera and numerous species. His aid and encouragement has been a large factor contributing toward the present work.

Known only from the type specimen of *leptothrix,* which was collected in Formosa by Professor Filippo Silvestri.

Serrastruma new subgenus

Form and dentition of the mandibles seem to set this African section off from the rest of *Smithistruma.* The mandibles are longer than the clypeus when measured from the anterior clypeal border to their apices; in most species they are very much longer, surpassing most *Smithistruma* in this respect. Seen from the front, they are narrowly triangular and display straight apical borders which meet each other on the median line. Seen from the side, they are noticeably depressed and arching from anterior to posterior, the tips rather strongly deflected ventrally. Apical and basal borders differentiated and meeting at an obtuse angle, the basal border running obliquely upward and outward from the proximal end of the apical border. The basal tooth not, or only faintly, differentiated from the apical series and not separated from the series by a diastema. Apical series composed of minute, regularly arranged denticulae numbering more than twenty on each mandible, the denticulation rarely so reduced as to make the apical border practically edentate. The apical tooth and often two or three other teeth toward the apex may be somewhat longer and more acute than their fellows.

Form of the head somewhat different from that of *Smithistruma* s. str., the occipital lobes seen from the front merging gradually and evenly with the anterior part of the head, less suddenly and strongly expanded laterally. Mesoepinotal region usually with a depression or constriction. Sculpture and spongiform appendages rather uniformly developed, much as in *Smithistruma* s. str. Most hairs clavate, of varying length.

SUBGENOTYPE: *Strumigenys simoni* Emery, 1895, Ann. Soc. Ent. France, LXIII, p. 42, Pl. 2, fig. 21, worker. (By present designation.)

This subgenus includes more than twenty forms peculiar to the Ethiopian region. Certain species of *Smithistruma* s. str. from the New World tropics and from the Indomalayan region approach *Serrastruma* in the length of the mandibles and in having the region of the mesoepinotal suture constricted. Since certain of these species, as well as many *Serrastruma,* have not yet been thoroughly investigated as regards mandibular characters, *Serrastruma* is left for the present as a subordinate subgenus to *Smithistruma*. The relationships of the species and subspecies within the subgenus are in considerable confusion and require review.

STRUMIGENYS Fred. Smith

1860. *Strumigenys* Fred. Smith, Journ. Ent., I, p. 72, Pl. IV, figs. 6–11.
1876. *Orectognathus* Fred. Smith, Trans. Ent. Soc. London, p. 491, part.

Mandibles linear, elongate, each armed at the apex with a pair of spiniform teeth which we may term the apical fork. These teeth are bent sharply inward and together determine a plane which lies at or nearly at a right angle to the shaft of the mandible. There may be included between the tines of the fork one or more smaller teeth or denticles. In addition, the inner mandibular border often bears, usually toward the apex, one, two, or three separated spiniform teeth or one or two reduced and denticuliform teeth, or a series of up to eight minute, separated denticulae. A basal tooth probably homologous to those of *Epopostruma* Forel, *Orectognathus* Fred. Smith, etc. often occurs in a very much reduced form on or adjacent to the condylar processes at the insertion of the mandible; this tooth is often slender and directed backwards when evident, and is usually not visible when the mandibles are closed. The proximity of the basal tooth to the condylar masses precludes the development of a distinct basal border homologous to that of *Smithistruma* or *Trichoscapa* Emery, and even when the mandible is fully separated from the head, the vestige of this border is not distinct.

The clypeus is always much shorter than the mandibles; the anterior clypeal apron projects anteriorly little or not at all, covering only a small portion of the bases of the mandibles. The mandibles vary in length from more than one quarter to one and one quarter times the length of the head proper, according to species.

The head proper is generally depressed pyriform, narrowest anteriorly and with more or less excised posterior border. Eyes small to medium-sized, placed in or below the grooves which receive the antennae when the latter are folded in. The antennal scape often incrassate and sometimes bent, the second and third funicular joints reduced and the apical joint very long. The entire antenna is relatively longer and more slender than in genera with shorter mandibles; in fact, the length of the antennae in the higher dacetines

may be said to vary in general in rough proportion to the exposed length of the mandibles.

Epinotum furnished with spines, upright lamellae, or both. Petiole and postpetiole commonly with rather abundantly developed spongiform appendages.

Sculpture of the body, except parts of the gaster, and sometimes the nodes of petiole and postpetiole, and thoracic pleurae, reticulate or granulate and opaque, sometimes with very feeble rugulae or carinulae on head and dorsum of thorax respectively. Most often, the major portion of the gaster is smooth and shining, sometimes along with varying areas of the nodes and thoracic-epinotal pleurae. The base of the gaster usually with fine longitudinal striae radiating from the juncture with the postpetiole. Rarely, the greater part of the dorsum of the gaster is reticulate or striate and opaque.

Hairs usually abundant, clavate, squamate or simple, sometimes very long and slender, especially on the posterior parts of the body. Small to medium-sized ants ranging in color from yellowish to blackish, but usually light to dark ferrugineous.

GENOTYPE: *Strumigenys mandibularis* Fred. Smith, 1860, Journ. Ent., I, p. 71, Pl. IV, figs. 6, 8, 10, female, *nec* worker, monobasic.

With the removal of several groups, discussed elsewhere in this paper, the genus *Strumigenys* still remains a very large and heterogeneous group. Further investigation will undoubtedly show that the genus divides into a number of natural subgenera. Only two divisions may be recognized with any certainty at present; these are discussed below.

The genus as here constituted remains as probably the best known and most typical of the dacetine genera. The species are distributed throughout the tropics and warm temperate regions of the world, with the only apparent exception being the Mediterranean region. Several species, such as *rogeri* Emery and *godefroyi* Mayr and its subspecies, are becoming widespread through insular and littoral areas within the tropics due to dissemination by commerce.

Strumigenys Fred. Smith *sensu stricto*

Includes the majority of the species, including all those originally native to the old world. Distinguished from the subgenus *Pyramica* Roger by having long, equal or subequal apical teeth. Both of these teeth making up the apical fork are usually distinctly longer than the distance between the inner borders of the closed mandibles measured along the anterior clypeal border. Some

members of the *louisianae* group of this subgenus have the ventral tooth of the apical fork somewhat shorter than the dorsal, but these differ from *Pyramica* in having a single short spiniform preapical tooth and, rarely, an additional minute denticle near the midlength of the inner mandibular border.

SUBGENOTYPE: same as for the genus.

Pyramica Roger

This subgenus includes the neotropical species related to *eggersi* Emery, which is perhaps the best known form. Perhaps the best distinguishing character lies in the combination of short apical fork, the ventralmost of the large teeth being distinctly shorter in most species than the dorsal, with a more or less wide spacing of the mandibles at their point of emergence from under the anterior clypeal border. This character is most satisfactorily brought out by comparing the length of the ventral tooth of the apical pair with the distance between the inner borders of the closed mandibles at the level of the anterior clypeal border. All true *Pyramica* have the ventral tooth shorter than this space, though a few forms have the tooth almost as long.

As subsidiary characters may be mentioned the convex inner mandibular border; the preapical series of minute denticles, three to eight in number; the broad, transversely ovate postpetiolar node; the absence or relatively slight development of the spongiform masses on both petiole and postpetiole, and the very small size. A few species lack one, more rarely two, of the above subsidiary characters. For example, in the species *denticulata* Mayr, the mandibles are rather strongly bowed outward, bringing about a concavity instead of a convexity of the inner borders; in *gundlachi* and several other forms, the denticulae are absent from the inner mandibular border; and in more than one undescribed form, the denticulae are replaced by two or three short, triangular teeth.

SUBGENOTYPE: *Pyramica gundlachi* Roger, 1862, Berl. Ext. Zeitschr., VI, pp. 251–254, Pl. 1, fig. 18b, worker *nec* female.

Although I have not seen specimens of *gundlachi*, Roger's description and figures seem to place it in the same group with *eggersi*. Indeed, it may be exactly the same ant as one of the forms of *eggersi* such as *cubaensis* Mann, or, more likely, *banillensis* Santschi. Besides the species mentioned, the subgenus contains the species *bierigi* Santschi and the three related species *clavata* Weber, *subedentata* Mayr, and *tristani* Menozzi. The revision planned for this group will modify the arrangements among specific and subspecific groups considerably and add several new forms. If *gundlachi* proves to be a *Strumigenys* s. str., a new subgeneric name will have to be proposed for this group, which ranges throughout the neotropical area.

NEOSTRUMA new genus

1887. *Strumigenys* Fred. Smith, 1860, *sensu* Mayr, part. Verh. Zool. bot. Ges., Wien, XXXVII, p. 567, et suiv.

Forms closest to *Strumigenys* (*Pyramica*), but having the teeth of the apical fork even more reduced and equal or subequal and the space between the inner borders of the mandibles at their bases even wider; the apical teeth in length equaling less than half this distance; mandibles converging markedly, one-third to one-half the length of the head proper. The preapical armament consists of a *subapical* series of minute, separated denticulae followed at or just distad of the midlength of the exposed mandibular shaft by a somewhat longer acute tooth, which is in turn followed proximally by a short series of denticles which we shall here term the *proximapical* series. Each of these two series of denticles may consist, according to species, of three to six units. Proximad of the proximapical series, the inner mandibular border is unarmed for the relatively great distance to the anterior clypeal border and somewhat beyond, where the *basal tooth*, an erect, narrow lamina near to the basal condylar structures, is completely concealed. Basal border obsolete or indistinct, greatly reduced. The head as a whole generally more flattened dorsoventrally than in *Pyramica*, the antennae, especially the scapes, relatively short. Otherwise much as in *Pyramica*.

GENOTYPE: *Strumigenys crassicornis* Mayr, 1887, Verh. zool.-bot. Ges. Wien, XXXVII, pp. 577–578, worker, by present designation.

Includes also the neotropical species *mustelina* Weber, *brevicornis* Mann, and at least one other new species.

TINGIMYRMEX Mann

1926. *Strumigenys* (*Tingimyrmex*) Mann, Psyche, XXXIII, pp. 104–105, fig. 1, worker.

The highly developed lamelliform appendages of the head and thorax, peculiarly shaped petiole, aberrant mandibles and shining vertex set *T. mirabilis* off sharply from the genus *Strumigenys*

and from other dacetine genera. Mann gives a good description and figures in the reference mentioned. Considered here as a separate genus. Neotropical.

GENOTYPE: *Strumigenys* (*Tingimyrmex*) *mirabilis* Mann, 1926, Psyche, XXXIII, pp. 104–105, fig. 1, worker, monobasic.

TRICHOSCAPA Emery

1869. *Strumigenys* (*Trichoscapa*) Emery, Ann. Accad. Aspir. Nat. Napoli (2), II, p. 24, Pl. I, fig. 11, worker.

1922. *Strumigenys* (*Cephaloxys*) Fred. Smith, *sensu* Emery, subgeneric name preoccupied, part. Gen. Ins., Hymen., Fasc. 174, p. 324.

Head shorter and relatively broader than in *Smithistruma*. Mandibles, short, robust, triangular; the apical border forming a right angle with the exposed and horizontally (in the closed mandible) oriented basal border. Entire length of apical border closely set with acute serially arranged teeth, the basalmost tooth not differentiated or set off from the rest by a diastema. Eyes consisting of but a few facets.

Prothoracic dorsum flattened, with strongly marginate lateral borders meeting the marginate anterior border through distinct humeral angles. Epinotal declivity marked on each side with a prominent, erect translucent lamella. Petiole and postpetiole with abundant lamelliform-spongiform appendages.

Head densely and rather finely punctate and opaque, prothorax varying somewhat from shining to subopaque in specimens from various localities. Petiolar and postpetiolar nodes somewhat shining, as are varying areas of the thoracic and epinotal pleurae. The gaster smooth and shining, the first gastric segment with an extensive area on each side of the anterior dorsum finely longitudinally striate.

Prominent head hairs restricted to a pair of short, erect clavate hairs on the vertex; a series of prominent clavate hairs on the anterior border of the antennal scapes and a few of the same scattered toward the apex of the gaster. The thorax in the female has a few clavate hairs on the thoracic dorsum, and both worker and female have abundant subappressed clavate hairs on the legs, especially toward the tips.

Size small; color yellowish testaceous to medium ferrugineous.

GENOTYPE: *Strumigenys* (*Trichoscapa*) *membranifera* Emery, 1869, Ann. Acc. Aspir. Nat. Napoli, 2nd Era, II, pp. 24–25, Pl. 1, fig. 11, worker.

M. R. Smith has recently (1947) shown that the term *Cephaloxys* is preoccupied and not available to the Formicidae which have short mandibles but are otherwise much like *Strumigenys*. The next subgeneric name available, which Smith applied, was

Emery's *Trichoscapa*. The present view offered is that *membranifera*, the genotype of *Trichoscapa*, is quite distinct from the great majority of the short-mandibulate forms. With the separation of these groups, then, *membranifera* and allied forms must retain the name *Trichoscapa*. Except for the small size and ventrolateral position of the eyes, *Trichoscapa* seems more closely related to *Alistruma* new genus and other Australasian forms than to *Strumigenys* or *Smithistruma*. It is certainly distinct from all other dacetine genera I have seen.

In grouping together the forms which seemed to belong to *Trichoscapa*, I was struck by the very close similarity between the species, all of which were originally described as species of *Strumigenys*. There seemed to be no really constant differences among series from widely distant localities. A search of the collecting records for the various forms listed below revealed a strong tendency in the genus toward a littoral-insular type of distribution. Furthermore, the microhabitat in each case was often of a nature greatly suggestive of nesting sites of certain tropicopolitan species or tramps. Dacetini are not generally considered to be efficient tramp species, but specimens of numerous dacetine species taken in government plant quarantine sharply contradicts the idea. Dr. F. X. Williams took *Strumigenys rogeri* Emery, a common and presumably neotropical species, a number of years ago near Honolulu. I have identified this specimen from among a miscellaneous unidentified collection of Hawaiian ants in the Museum of Comparative Zoology. Dr. M. R. Smith has sent me a long series of *rogeri* taken at Honolulu recently, but this time in a shipment of plants from the Fijis! This indicates that *rogeri* is being spread rather rapidly throughout the Pacific area by commerce.

That Dr. Smith has taken *membranifera* in the United States in plant bulbs and in the timbers of old houses is strongly suggestive of a similar means of distribution. Dr. Smith has sent six specimens of *membranifera* from Guam, and I took a female in 1945 in a densely populated rice-raising area near Chengtu, Szechuan, in western China.

The following forms, given with the names used in the original descriptions, are considered to be slight variants of *T. membranifera* and synonymous with the latter:

Strumigenys membranifera race *simillima* Emery, 1890. (S. E. United States and West Indies.)
S. membranifera var. *santschii* Forel, 1904. (Tunisia.)
S. (*Cephaloxys*) *membranifera* var. *marioni* Wheeler, 1933. (S. E. United States.)
S. (*Cephaloxys*) *membranifera* var. *williamsi* Wheeler, 1933. (Hawaii.)
S. (*Cephaloxys*) *silvestriana* Wheeler, 1928. (China Coast.)
S. (*Cephaloxys*) *foochowensis* Wheeler, 1928. (China Coast.)
S. (*Cephaloxys*) *vitiensis* Mann, 1921. (Fiji Islands.)

There are very slight variations between the series from different localities, but none of these variations are great enough or constant enough even within one locality series to count as more than subspecific differences. The females from different places are utterly indistinguishable one from another; some, such as *foochowensis* Wheeler, were described through ignorance of the morphological relationships between worker and female and through overlooking such characters as the pair of clavate hairs on the vertex. As in the case of *simillima,* which Emery himself stated was so similar to the typical *membranifera* that he would not have considered it new had it been found in Europe instead of the New World, most of the forms were described on the basis of geographical isolation. If any forms are to retain their names as separate subspecies, *simillima* and *silvestriana* are probably the only two that deserve such rank on a morphological basis. These show very slight differences in pronotal width and degree of opacity of the integumental surface of the thorax, such as would be expected in small migrant populations temporarily isolated in a strange environment. Until larger series are available and until field studies of the proper scope may be undertaken, it would appear best to consider them all as very slight variants of the one species *membranifera,* without further nomenclatorial distinction. Males are rare if not unknown in collections; a study of the genitalia, such as has been started with other dacetine species available in the caste, might prove of value in this connection.

Genera with Six-jointed Antennae Belonging to the Neotropical Codiomyrmex-Glamyromyrmex Complex

CODIOMYRMEX Wheeler

1916. *Codiomyrmex* Wheeler, Bull. Mus. Comp. Zoology Harvard, LX, pp. 326–327, fig. 1.

1922. *Strumigenys* (*Codiomyrmex*) Wheeler, *sensu* Emery. Gen. Ins., Hymen., Fasc. 174, p. 326.

The peculiar conservatism with respect to genera and subgenera in the *Dacetini* which has been adhered to by former authors is nowhere illustrated more clearly than in the case of this genus, which, subsequent to its original description, was lowered by several authors to the rank of subgenus under *Strumigenys.* At the end of the original description, Wheeler states:

"I have made [*Codiomyrmex thaxteri*] the type of a distinct genus, though it is evidently much like a *Strumigenys* except in the structure of the head, because I believe that this latter genus is soon destined to suffer disintegration into a number of subgenera or genera. This fate has already overtaken several other ant-genera (*Camponotus, Formica, Crematogaster, Monomorium, Pheidole,* etc.) that have become unwieldy through accumulation of species which even a very conservative myrmecologist must regard as heterogeneous."

Codiomyrmex is here regarded, as in the original description, as a genus, though related to *Smithistruma* and *Glamyromyrmex.* It is distinguished from these genera by the combination of the relatively short cephalic length with the rugose sculpture of at least the upper portion of the dorsum of the head. The mandibles are triangular, robust, only moderately elongate, together with a very convex dorsal surface. Apical border serially dentate, the teeth adjacent and strongly developed individually. The axis upon which the mandibular teeth meet in the midline tilted somewhat ventrad anteriorly in relation to the main longitudinal axis of the head. Hairs fairly abundant, long and slender, none clavate. Size small, color medium- to blackish-ferrugineous.

GENOTYPE: *Codiomyrmex thaxteri* Wheeler, 1916, Bull. Mus. Comp. Zool. Harvard, LX, pp. 327–329, fig. 1, worker, monobasic.

After the original description, three quite diverse neotropical ants were further assigned to *Codiomyrmex.* Of these, *C. nitens* Santschi is herein made the type (see below) of a new genus; *C. convexiceps* Santschi is transferred to *Glamyromyrmex;* and *C. excisus* Weber is provisionally retained in *Codiomyrmex.* The genus is exclusively neotropical.

GLAMYROMYRMEX Wheeler

1915. *Glamyromyrmex* Wheeler, Bull. Mus. Comp. Zool. Harvard, LIX, pp. 487–488, fig. 2.

1931. *Strumigenys* (*Codiomyrmex*) Wheeler, 1916, *sensu* Santschi, part. Rev. de Ent., I, p. 277.

Related to *Codiomyrmex,* from which it differs in details of head shape, mandibles, sculpture and pilosity. Sides of head only moderately converging anteriorly, posterior excision slight to moderate. Mandible short, subtriangular; apical and basal borders distinct, the former with five to seven coarse, serially arranged teeth, which meet the dental series of the opposite mandible on an axis quite strongly divergent ventrally from the main longitudinal axis of the head proper. The clypeus broadly transverse, with anterior border straight to strongly emarginate or excised. The clypeus, together with the rest of the dorsum of the head, quite convex when seen from the side in profile. Body integument for the most part smooth, the sculpture of the head almost or quite completely effaced, the surface resulting nearly or completely smooth. Head hairs reduced to very short, fine appressed hairs, arising from sparsely distributed minute punctulae, rarely with a very few longer hairs standing more or less erectly on the extreme occipital region. Other body hairs sparse, long and attenuated. Size small; color light to dark ferrugineous.

GENOTYPE: *Glamyromyrmex beebei* Wheeler, 1915, Bull. Mus. Comp. Zool. Harvard, LIX, pp. 488–491, fig. 2, all castes, monobasic.

Neotropical; contains also the species *convexiceps* Santschi and *wheeleri* M. R. Smith.

DORISIDRIS new genus

1932. *Strumigenys* (*Codiomyrmex*) Wheeler, *sensu* Santschi, part. Rev. de Ent., II, p. 413.

Habitus intermediate between, perhaps, *Glamyromyrmex* and *Strumigenys,* with sculpture and head shape more as in the former, mandibles more as in the latter. Each mandible with a fork of two spiniform teeth at the apex of its long, sublinear-flattened arcuate blade. Preapical teeth separated, few (three in the genotype) in number, spiniform. As in *Glamyromyrmex* and *Codiomyrmex,* the antennae are rather short, and the spongiform appendages of both petiole and postpetiole are well-developed. Form and sculpture of the body in general that of *Glamyromyrmex,* the head with subparallel sides and transverse posterior border. Hairs on dorsum of head and body fine, quite reduced and inconspicuous on the anterior part of the head, longer on the vertex and occiput, and becoming longer and longer posteriorly on the body, longest on the gaster. Size small. (Description adapted from text and figures of Santschi, 1932.)

GENOTYPE: *Strumigenys* (*Codiomyrmex*) *nitens* Santschi, 1932, Rev. de Ent., II, pp. 413–414, fig. 2, worker, by present designation, monobasic.

The only known species is *D. nitens* from Cuba. The genus is named for my wife, Doris Evelyn Brown.

Genera with Six-jointed Antennae, Formerly Included in the Australasian Genus Epopostruma Forel

ALISTRUMA new genus

1897. *Epopostruma* Forel, *sensu* Emery, part. Term. Füzetek, XX, p. 573.

Includes the species with well-developed lamellate lateral wings or lobes on *both* petiolar and postpetiolar nodes. The mandibles triangular, their apical borders distinct from the basal and meeting the latter at approximately right angles. Apical borders denticulate their entire length, each with one or two teeth at the apex slightly more prominent than the rest of the series, but not arranged in a typical apical fork. Eyes rather large, placed laterally above the position of the antennal scapes when the latter are retracted against the sides of the head. Sculpture of most of body and head opaque, densely and finely punctate or granulate or with small rugulae, the gaster smooth and shining, with fine striae running longitudinally at the base of the first gastric segment. Size moderate; color yellowish testaceous to deep brown.

GENOTYPE: *Epopostruma foliacea* Emery, 1897, Term. Füzetek, XX, pp. 573–574, Pl. 15, figs. 20–21, worker, by present designation.

This genus, which may be distinguished by the *distinctly separated* third, fourth and fifth flagellar joints of the antennae from the related genus *Clarkistruma* new genus, is found in Australia and New Guinea. Nothing has been reported on its habits, which should prove of considerable interest in connection with the specialized mandibular type. Named for the peculiar alate lamellae springing laterally from the petiole and postpetiole. Includes, besides the type, the species *froggatti* Forel and one or more undescribed species which I am now studying.

COLOBOSTRUMA Wheeler

1927. *Epopostruma* (*Colobostruma*) Wheeler, Quart. Rev. Biol., II, p. 32, fig. 40, female.

This genus, which Wheeler figured but did not adequately describe in the original reference, is closely allied to the genus *Alistruma* as described above. It differs from *Alistruma* in the shape of the head, which is obliquely truncate from near the level of the ocelli forward, the flat truncate part including in its plane the mandibles, clypeus, and much of the vertex. The description is that of a single specimen in the collection of the Museum of Comparative Zoology. This is a female which does not seem to agree very well with any Australian dacetine worker in the quite complete series of forms from that continent which is presently at my disposal. The color is testaceous yellow with a brown transverse band of rather indefinite limits across the gaster, a color pattern often found in ants inhabiting hollow twigs or other plant cavities (*Leptothorax, Pseudomyrma,* etc.). Wheeler supposed this ant to have habits somewhat like those of *Colobopsis*. There are, however, no observations known to me which support this view.

GENOTYPE: *Epopostruma* (*Colobostruma*) *leae* Wheeler, 1927, Quart. Rev. Biol., II, p. 32, fig. 40, female, monobasic.

Known only from the type specimen, which was collected by A. M. Lea in the Cairns district of Queensland.

I have not been able to find any references to either the genus or its type in print, including the usual compilations of zoological names, other than the original reference, to which Mr. John Clark kindly called my attention, and a reprint of the figure in Prof. Wheeler's book, "Foibles of Insect and Man." Mr. Clark has ventured the opinion in a letter that this form should be regarded as representing a distinct genus, and I concur in this.

MESOSTRUMA new genus

1895. *Strumigenys* (*Epopostruma*) Forel, Ann. Soc. Ent. Belg., XXXIX, p. 422.
1897. *Epopostruma* Forel, *sensu* Emery, part. Term. Füzetek, XX, p. 573.

Intermediate in character between *Alistruma* and *Epopostruma* as the latter genus is considered below. The postpetiole has lateral lamelliform alae, but these are lacking on the petiole. The shape of the mandible is also intermediate in having the basal spine so characteristic of the true *Epopostruma,* but with this structure overlain by a thin semitransparent lamella which fills out the outline of the mandible to a narrow edition of that of *Alistruma* and provides differentiated apical and basal borders. The basal spine is clearly visible through the lamellate structure and is seen to run obliquely backward and inward, with its apex at the (approximately right) angle between the basal and apical borders. Apical border cultrate, with a prominent tooth at its apex and a shorter tooth adjacent to the apical one.

Neither the posterior excision of the head nor the lateral expansion of the occipital lobes nearly so well developed as in *Epopostruma,* but the sculpture, especially of the head, consists of prominent, separated shallow punctures much the same as those of the latter genus.

GENOTYPE: *Strumigenys* (*Epopostruma*) *turneri* Forel, 1895, Bull. Soc. Ent. Belg., XXXIX, p. 424.

Epopostruma monstrosa Viehmeyer, described from an individual displaying marked right-left asymmetry and thus probably gynandromorphic or otherwise anomalous, may belong here. Mr. Clark has sent another species belonging to this genus which is apparently new. The genus is restricted to Australia and Tasmania as presently known.

EPOPOSTRUMA Forel

1895. *Strumigenys* (*Epopostruma*) Forel, Ann. Soc. Ent. Belg., XXXIX, p. 422.
1897. *Epopostruma* Forel, *sensu* Emery, part. Term. Füzetek, XX, p. 573.

Includes the species with mandibles much as in *Strumigenys;* these structures long, linear and flattened, with a typical apical fork consisting of two stout, spiniform equal or subequal teeth, and a long, spiniform basal tooth directed inward and backward and situated so as to be practically completely covered by the clypeus. Petiole and postpetiole without prominent lateral lamellate alae, though the postpetiole may show the merest vestiges of lateral teeth. Two short pairs of spines, one pair on the humeri directed upward and outward, and one pair on the dorsum of the petiolar node; also a pair of long spines, diverging and somewhat dorsally directed, on the epinotum.

The sculpture consisting of numerous punctures in the generally smooth and shining integument except on the gaster which is usually rather smooth over most of its surface, with perhaps an area of rather obscure striation near its base. The punctures vary with the species from rather small, scattered piligerous pits to large, round, shallow umbilicate foveolae which are crowded and often touching each other. Hairs short, erect, rather abundant and evenly distributed over the body.

The general head shapes in this and the following genus are much alike and resemble that of *Daceton* Perty, *Strumigenys*, *Orectognathus* and other allied genera, but *Epopostruma* has the head of both female and worker longer, if only slightly, than broad; *Hexadaceton* new genus has the head distinctly broader than long.

GENOTYPE: *Strumigenys* (*Epopostruma*) *quadrispinosa* Forel, 1895, Bull. Soc. Ent. Belg., XXXIX, p. 422, worker; by designation of Wheeler, 1911.

Contains also the species *ferruginea* Forel, which has been considered a subspecies of *quadrispinosa* heretofore, plus two or more undescribed forms. The genus is found in Australia and Tasmania.

HEXADACETON new genus (fig. 2)

Has the characters of *Epopostruma* as described above, but differs in the following respects:

1. The head broader than long, with a very broad posterior excision and occipital lobes evenly rounded behind.
2. There is a prominent tooth springing from the side of the head just behind each eye.
3. The spines on the body, particularly the pairs on the humeri and on the dorsum of the petiole, much longer than in the preceding genus and more evenly tapered to their rather acute apices.
4. The postpetiole on *each side* continued laterally into a prominent pair of dorso-ventrally flattened teeth or spines, the bases of which are connected by a ridge.
5. Mandibles broader than those of the preceding genus.
6. Body generally decidedly larger and more robust than in *Epopostruma*.

GENOTYPE: *Hexadaceton frosti* new species (described below).

Hexadaceton frosti new species (Text-fig. 2.)

Worker.—Total length, including mandibles, $5.4 \pm .1$ mm. Maximum lengths of sections as follows: head, excluding mandibles, $1.20 \pm .01$ mm.; closed mandibles, exposed portion, $0.60 \pm .01$ mm.; thorax (Weber's measurement), $1.35 \pm .02$ mm.; antennal scape, $0.73 \pm .01$ mm.

Indices, given as percentages of maximum length of the head proper, as follows: Cephalic (greatest width to greatest length), 107 ± 1; mandibulocephalic (exposed length of mandibles to length of head proper), 50 ± 1.

Head with a very broad, deep posterior excision and expanded occipital lobes. Eyes large, strongly convex, situated near the midlength of the head astride the ridges which mark the dorsal borders of the antennal scrobes, about half their lengths anterior to a flat, triangular tooth which projects laterally from the dorso-lateral margin on each side. Scrobes broad and shallow, only weakly demarcated ventrally behind. Cheeks just posterior to the level of the antennal insertions each with a massive, blunt-tipped lateral subconical process, immediately behind which is a narrow cleft running dorsally to become confluent with the scrobe. Frontal area triangular, slightly impressed relative to the moderately convex vertex. Clypeus broadly subtriangular, with posterior lobe truncate above, the anterior clypeal border broadly and extremely shallowly emarginate. Mandibles rather broad and robust compared to *Epopostruma* spp., their inner margins with dorsal and

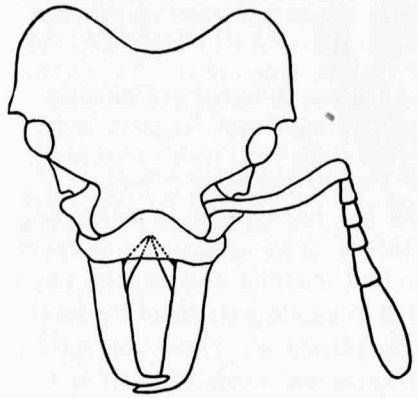

Fig. 2.—*Hexadaceton frosti* new genus and species, worker. Outline of dorsal aspect of head. "N. Mecklenburg," South Australia.

ventral borders without traces of denticulation; the apical fork of two thick, rather blunt teeth converging in a narrow V without intercalary denticulation. Antennal scapes gently but distinctly curved toward their middles and becoming incrassate at the middles and continuing so on toward the tips; funicular joints five in number, the apical joint longer than the three preceding joints together, the three basal joints subequal, the fourth slightly longer and more massive than any of the first three.

Thoracic dorsum evenly convex in profile, its sutures obliterated by the rough sculpture. Humeral and epinotal spines long, straight and acute, the latter longest. Each epinotal spine subtended below by a very low vertical carina, which widens below into an erect subangular translucent lamella which guards its own side of the rather steep, weakly concave epinotal declivity.

Pedicel of petiole rather long, its dorsum sloping gradually to the apex of the node; posterior dorsal declivity of node sloping more sharply behind. Spines on dorsum of petiolar node long, acute, directed upwards and outwards and curved slightly toward the posterior, almost or quite as long as the distance between their bases. Postpetiole much broader than the petiole,

the dorsal surface evenly convex; each side with two broad, flat acute teeth projecting laterally and deflected somewhat posteriorly; the anterior of the two longer, thicker and deflected dorsally; the posterior broad, lamelliform, translucent, only weakly deflected dorsally.

Sculpture of the coarser type mentioned above in the description of *Epopostruma*, with large, round, shallow, often contingent foveolae, mostly umbilicate, covering the greater part of the head, thorax, petiole and postpetiole. The spaces between the foveolae tend to form ridges in the more densely crowded areas, but are plane and smooth and shining in less densely punctured places. The bottoms of the foveolae and the frontal area, clypeus, mandibles, legs, antennae and gaster are also smooth and shining. The gaster displays a series of very short longitudinal striae in the constriction at its juncture with the postpetiole, and very fine, scattered punctures become evident on its general surface at higher magnifications.

Hairs fairly abundant, rather weak but erect, uniformly distributed over the entire dorsal surface of the body; many appear weakly clavate or truncate at their tips. Color clear medium honey yellow.

Described from the holotype alone (Museum of Comparative Zoology, No. 27838). This specimen was found among miscellany in the Wheeler Collection labelled with two different generic names apparently representing stages of Professor Wheeler's opinion of the generic placement. Since the specimen lacks a type label, and since no reference mentioning either name used has been found in the literature, the name *Hexadaceton* is here proposed as a totally new name for the apparently undescribed genus.

The locality labelling is "N. Mecklenburg, South Australia," and the collector's name is not fully legible.

The species is named for Dr. Stuart W. Frost, my former teacher in entomology, whose patient tutelage and infectious enthusiasm inspired and encouraged me in my work throughout my undergraduate years.

Genera with Four-jointed Antennae Formerly Included in Epitritus Emery and Epopostruma Forel

EPITRITUS Emery

1869. *Epitritus* Emery, Bull. Soc. Ent. Ital., 1, p. 136, fig. 1.

Small ants with prominent, slender, sublinear mandibles and bent or strongly incrassate antennal scapes. Apex of each mandible with one to four spiniform teeth plus one or more subapical denticulae. Other than these characters and the four-jointed condition of the antennae, there is little to distinguish the genus from other dacetines, especially from *Smithistruma* (*Wessonistruma*) and certain small *Strumigenys*.

GENOTYPE: *Epitritus argiolus* Emery, 1869, Bull. Soc. Ent. Ital., 1, pp. 136–137, fig. 1, female, monobasic.

Includes, besides the genotype, the species *clypeatus* Szabo, *emmae* Emery, *eurycerus* Emery, *wheeleri* Donisthorpe and forms infraspecific to these. The genus is widespread but uncommonly collected throughout the tropical and subtropical regions of the globe. Evidence indicates that at least one form acts as a tramp, and the revision of the species with this probability in mind will bring about the synonymy of certain forms described more on the basis of geographical isolation than on morphological differences.

MICCOSTRUMA new genus

1909. *Epitritus* Emery, *sensu* Szabo. Arch. Zool. Budapest, 1 (7).

Small forms resembling *Smithistruma* superficially, characterized by the extremely small mandibles, which are one-third or less the length, considering only the normally exposed portions, of the clypeus. The mandibles are porrect, narrowly triangular, their apical or inner borders with serially arranged denticulae or spiniform teeth of varying lengths.

GENOTYPE: *Epitritus mandibularis* Szabo, 1909, Arch. Zool. Budapest, 1 (7): 1–2, fig. 2, worker, by present designation.

The genus includes only the genotype and *M. marginatus*, which Santschi described as an *Epitritus* in 1914; both species are from the Ethiopian Region. The generic name refers to the small size of the mandibles in particular and of the insects in general.

CODIOXENUS Santschi

1931. *Epitritus* (*Codioxenus*) Santschi, Rev. de Ent., 1, p. 278, figs. 11, 12, worker.

The head oblong in shape, with posterior border only very weakly excised and the sides subparallel. Mandibles subtriangular, rather short and robust, with serial dentition. Head and body smooth and shining, the former especially with fine scattered punctures. Pilosity of head reduced, fine. Bears a strong superficial resemblance to *Glamyromyrmex convexiceps*, with which the only known specimens were mixed in the collector's vial.

GENOTYPE: *Epitritus* (*Codioxenus*) *simulans* Santschi, 1931, Rev. de Ent., 1, pp. 278–279, figs. 11 and 12, worker, monobasic.

This peculiar genus, of which only the type species from Cuba is known, was supposed by Santschi to bear a parasitic or symbiotic relationship to the *Glamyromyrmex* with which it was apparently taken. Neither species has been reported since.

CLARKISTRUMA new genus

1913. *Epopostruma* Forel, *sensu* Forel, part. Bull. Soc. Vaud. Sci. Nat., XLIX, p. 179.

1928. *Epitritus* Emery, *sensu* Clark, part. Vict. Naturalist, XLV (Suppl.), p. 42.

Very similar to *Alistruma,* from which it differs principally in having only four antennal joints. The size of the specimens I have seen is also somewhat smaller than that of *Alistruma* species, though the difference is not great enough to be of real importance. Forel imagined that his *Epopostruma alinodis* showed vestigial sutures separating the third, fourth and fifth funicular joints one from the other, but a long series of cotypes from both Mr. Clark's collection and from that of the Museum of Comparative Zoology shows either no trace of division whatsoever or, in certain specimens, the very merest thinning at what might be considered the points of juncture of the antennal segments in question. Mounting of several antennae and examination by means of compound microscope showed only that joints three to five were solidly fused without traces of definite sutures or lines of juncture. Clark's *elliotti,* originally described as an *Epitritus,* has this same fusion joint, but in a greatly fore-shortened condition. In all *Alistruma,* the separations between the funicular joints in question are quite clear and seem to confer complete flexibility upon their section of the antennal body.

GENOTYPE: *Epopostruma alinodis* Forel, 1913, Bull. Soc. Vaud. Sci. Nat., XLIX, pp. 179–182, Pl. 1, figs. 1, 2, worker, by present designation.

Alinodis and *elliotti,* both Australian-Tasmanian species, are the only described forms, but series from several localities, sent from Australia by Mr. Clark may prove to be representative of new species or subspecies.

I take great pleasure in naming this genus in honor of Mr. John Clark, the eminent and able Australian entomologist, whose most generous loans and sound advice have played a major part in the revision of the Australian *Dacetini.*

Artificial Key to the Genera and Subgenera of the Dacetini, Based on the Workers

1. Antennal joints 12 (Neotropical) ..... **Basiceros** Schulz
   Antennal joints 11 2
   Antennal joints 10 (Sicilian Amber) ..... **Hypopomyrmex** Emery
   Antennal joints 8 (Neotropical) ..... **Octostruma** Forel
   Antennal joints 7 4
   Antennal joints 6 7
   Antennal joints 5 26
   Antennal joints 4 27
2. Mandibles less than ½ length of head proper, serially dentate (Australia) ..... **Peronomyrmex** Viehmeyer
   Mandibles more than ½ length of head proper, linear, each with an apical fork and a basal spine 3
3. Prothorax and petiole with prominent spines; size large; mandibles shorter than head proper (Neotropical) ..... **Daceton** Perty
   Anterior portion of thorax and petiole without spines; size small; mandibles very slender, about as long as head proper (Neotropical) ..... **Acanthognathus** Mayr
4. Eyes lacking; mandible with an apical fork of two large, acute teeth, inner border straight along proximal section (Cuba). **Heptastruma** Weber
   Eyes present, often minute; mandibles not as above 5
5. Mandible short, broad, triangular or subtriangular, the well-differentiated apical border serially dentate or denticulate its entire length (Neotropical, Indo-Malayan, Papuan) ..... **Rhopalothrix** Mayr
   Mandibles linear or sublinear, curved, meeting only near their apices, their dentition modified and apical or subapical in position 6
6. Mandible with a very long, sharp spine arising just proximad of the apex (Neotropical) ..... **Acanthidris** Weber
   Mandible with a small series of short, irregular teeth at its apex (Neotropical) ..... **Talaridris** Weber
7. Antennal scrobes absent; eyes dorso-laterally situated; two prominent teeth on each occipital lobe (Ethiopian). **Microdaceton** Santschi
   Antennal scrobes present 8
8. Lateral and posterior borders of head with a completely continuous broad translucent fringe or plate of chitinous material; mandibles short-subtriangular, their apical borders minutely denticulate (Neotropical) ..... **Tingimyrmex** Mann
   Head without a fringe of translucent lamella, or at least not with one continuous posteriorly 9
9. Eyes large, placed on or above dorsal borders of antennal scrobes .. 10
   Eyes large or small, placed near or beneath ventral borders of antennal scrobes 14

10. Both petiole and postpetiole with lateral alar processes well developed; mandibles triangular.....11
Petiole without prominent lateral processes; mandibles variable...12
11. Head (only female known) obliquely truncate anteriorly, somewhat as in the formicine genus *Colobopsis* Mayr (Australia).
Colobostruma Wheeler
Head gently convex dorsally; not truncate anteriorly (Australia, Papua).....**Alistruma** new genus
12. Postpetiole with only vestiges of lateral processes; mandibles long, linear, with apical fork (Australia).....**Epopostruma** Forel
Postpetiole with *prominent* laterally projecting teeth or lamelliform structures.....13
13. Postpetiole with two stout, flattened teeth projecting laterally on each side; basal tooth of mandible free, but mostly hidden beneath clypeal border (Australia).....**Hexadaceton** new genus
Postpetiole with a rounded lamelliform ala on each lateral border; basal tooth of mandible enclosed in a flat, semitransparent lamella (Australia).....**Mesostruma** new genus
14. Mandible elongate, linear or sublinear, with a well-differentiated apical fork of two inwardly directed spiniform teeth, which sometimes have one or more smaller teeth or tubercles between them; *prominent* spiniform teeth either lacking or less than four in number; basal mandibular border poorly developed or obsolete..15
Mandible most often not strikingly elongate, subtriangular or triangular, without a differentiated apical fork, its apical border serially dentate or denticulate, rarely edentate, well differentiated from the basal border, though the latter is often hidden beneath the clypeus.....20
15. Head in dorsal view oblong, with subparallel sides and slightly convex posterior border; mandible broad at base, with three prominent preapical teeth; integument smooth (Cuba).
Dorisidris new genus
Head in dorsal view strongly narrowed anteriorly and with emarginate or excised posterior border; at least the dorsum of the head largely sculptured and opaque.....16
16. Blade of mandible less than ⅓ length of head proper (fig. 1), quite broad near the anterior clypeal border, its external margin turning sharply inward just anterior to the insertion; internal margin with a large, lobe-like basal process which is normally mostly hidden by the clypeus (Indo-Malayan, Australian, Papuan).
Labidogenys Roger
Blade of mandible linear, with the external and internal borders of at least the basal half nearly or quite parallel, exposed portion of mandible usually ⅓ or more of the length of the head proper, basal tooth reduced or dentiform.....17

17. The two principal teeth of the apical fork both reduced, nearly or quite equal in size; preapical armature consisting of a small spiniform tooth at or just distad of the midlength of the blade, flanked distally and proximally by short series of minute, separated denticulae (Neotropical).....**Neostruma** new genus
At least one tooth of the apical pair prominent and elongate; preapical armature not as above....**Strumigenys** Fred. Smith.....18
18. Two principal teeth of apical fork long, nearly or quite equal in length, the ventral tooth decidedly longer than the space between the inner borders of the closed mandibles at the level of the anterior clypeal border (Cosmopolitan).....most **Strumigenys** s. str.
Ventral principal tooth of apical fork shorter than its dorsal mate, usually distinctly shorter than the space between the inner borders of the closed mandibles at the level of the anterior clypeal border.....19
19. Preapical armature absent or consisting of a short series of minute, separated denticulae or two or three large teeth (Neotropical).
Strumigenys (Pyramica) Roger
Preapical armature consisting of one preapical spiniform tooth, rarely with an additional minute denticle near the midlength of the inner border (Neotropical).
some members of the *louisianae* group of **Strumigenys** s. str.
20. Head not strikingly elongate; cephalic hairs reduced and inconspicuous except, in some cases, for a very few on the extreme posterior dorsum of the head which may be larger; clypeus never with bizarre and prominent scales or hairs.....21
Head elongate or not; cephalic hairs abundant, conspicuous, often clavate or otherwise bizarre; clypeus, at least the anterior border, with bizarre scales or hairs prominently displayed.....22
21. Head densely and finely sculptured, opaque; vertex with a single pair of short, erect clavate hairs; pronotum strongly margined anteriorly and laterally (World tropics and subtropics).
Trichoscapa Emery
Sculpture of head almost or quite effaced and smooth; prominent cephalic hairs completely absent or not as above; pronotum not strongly margined (Neotropical).....**Glamyromyrmex** Wheeler
22. Head distinctly rugose on at least the posterior dorsum.....23
Head very finely and densely sculptured, appearing evenly granulate over its whole posterior dorsal surface.....24
23. Head markedly elongate; hairs on clypeus small, flattened and scale-like (Formosa)..**Smithistruma (Weberistruma)** new subgenus
Head not strongly elongate; clypeal hairs not scale-like (Neotropical).....**Codiomyrmex** Wheeler

24. Apical border of mandible with a series of minute denticulae, twenty or more in number, the basalmost tooth of the series not or only very weakly differentiated as a "basal tooth"; the denticulation rarely so reduced as to make the apical border practically edentate (Ethiopian)..**Smithistruma (Serrastruma)** new subgenus

Apical border of mandible set with a linear series of less than twenty small, rather uneven teeth; the basalmost tooth differentiated from the rest as a spine-like tooth or plate-like lamella, often separated from the remainder of the series by a diastema and sometimes hidden beneath the anterior clypeal border.....25

25. Basal tooth wholly exposed when mandibles are closed, set off from the apical series by a diastema almost or more than equalling the length of the space occupied by the apical series (Nearctic).
Smithistruma (Wessonistruma) new subgenus

Basal tooth exposed or covered when mandibles are closed, not set off by a diastema from the apical series, or the diastema much shorter than the space occupied by the apical series (Cosmopolitan except the Australian, Antarctic, and colder parts of the Holarctic regions).....**Smithistruma** s. str. new subgenus

26. Size rather large; mandibles linear, with an apical fork (Australia, Papua, New Zealand and adjacent oceanic islands).
Orectognathus Fred. Smith

Size small; mandibles short, subtriangular, serially dentate (Formosa).....**Pentastruma** Forel

27. Eyes placed on or above dorsal borders of antennal scrobes (Australian).....**Clarkistruma** new genus

Eyes placed near or below ventral borders of antennal scrobes...28

28. Mandibles linear, longer than clypeus (World tropics and subtropics).....**Epitritus** Emery

Mandibles narrowly subtriangular, exposed portion very small, less than ½ the length of the clypeus (Ethopian).
Miccostruma new genus

Note.—After the bulk of this paper had been completed, there came to hand through the courtesy of Dr. M. R. Smith a paper by Signor Saverio Patrizi of Rome, Italy, in which was described a new genus belonging to the *Dacetini,* based on a new East African species, *Proscopomyrmex londianensis.* (Boll. Ist. Ent. Univ. Bologna, xv, pp. 294–296, figs. 1, 2, 1946, worker.) The very good description and figures show an ant very closely related to *Strumigenys,* from which Signor Patrizi separates his genus principally on the peculiar eye-notches of the head, along with a modification of the antennal scrobes. Several species of *Strumigenys* from the Old World tropics have modifications of the region about

the eyes which are at least superficially similar to those of the new genus, and it would seem somewhat premature to consider *londianensis* as generically separate on these grounds alone. Until a more extensive study may be made of the relationships among the Old World species of this group, however, it is perhaps best to let *Proscopomyrmex* stand, since it may be possible that some or all of the forms with eye-notches fall within a natural group deserving generic or subgeneric rank.

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