

A SHORT HISTORY REGARDING THE TAXONOMY AND SYSTEMATIC RESEARCHES OF PLATYGASTROIDEA (HYMENOPTERA)

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This paper presents an overview of the most important and best-known works that were the subject of taxonomy or systematics Platygastroidea superfamily. The paper is divided into three parts. In the first part of the research surprised the early period can be placed throughout the XIXth century between Latreille and Dalla Torre. Before this period, references about platygastriids and scelionids were made by Linnaeus and Schrank, they are the ones who described the first platygastriid and scelionid respectively. In this the first period work entomologists as: Haliday, Westwood, Walker, Forster, Ashmead, Thomson, Howard, etc., the result of their work being the description of 699 scelionids species which are found quoted in Dalla Torre's catalogue.

The second part of the paper is devoted to early 20th century. This vibrant work is marked by the work of two great entomologists: Kieffer and Dodd. In this period one publish the first and only global monograph of platygastriids and scelionids until now. In this monograph are twice the number of species than in Dalla Torre's catalogue which shows the magnitude of the systematic research of those moments.

The third part of the paper refers to the late 20th and early 21st century. This period, which continues today, is the period of modern systematics and taxonomy research about platygastriids and scelionids. During this period these two families become a distinct Superfamily which differs by Proctotrupoidea Superfamily. A great contribution in taxonomic and systematic Platygastroidea Superfamily brought Masner and Kozlov, the presentation of their work occupying the largest space of this 3rd party.

Key words: Hymenoptera, Platygastroidea, Platygastriidae, Scelionidae.

1. THE XIXth CENTURY: FROM LATREILLE TO DALLA TORRE

The first mention on scelionids is made by LINNAEUS, who described *Ichneumon ovulorum* in 1758, included today in the *Telenomus*. The first scientific description of a platygastriid was published by SCHRANK in 1781, who described *Cynips phragmitis* (transferred in 1830 by CURTIS to *Platygaster*).

LATREILLE (1802) characterised the order Hymenoptera on the bases of the following essential features: four membranous wings, with unequal venation, the hind wings being much smaller than the fore ones. It shows well-developed mandibles. Furthermore, the order is divided into two sections: Terebranti and Aculeati. The Terebranti section is divided into two divisions: Sessiliventre and Pedunculiventre.

The Pedunculiventre division includes seven families. For the study we have done, there are two relevant families: Proctotrupiens and Cleptioses.

The Proctotrupiens is characterised by the flat and rounded labium, long filiform or setal maxillary palpi, formed by five segments, and the labial one is formed by three segments. Antennae are filiform or slightly thickened to the apex, inserted in the middle of the forehead. The female tariera is tubular, conical, retracted in the metasoma. The body is elongated, the metasoma is oval or conical, punctuated on the terminal side.

The Cleoptiose presents the following essential features: the labium is flat and rounded at the upper termination. Filiform palpi, the maxillary palpi are elongated, consisting of 5, 6 segments, the labial palpi are shorter, formed by 3 articuli. Short, truncated mandibles, with 2 or 3 teeth. Setal or filiform antennae, with the first segment long, conical, inserted right above the mouth. The tariera is conical, retractile and very mobile, in relaxation position, being kept retracted in the interior of the metasoma. The body is elongated. The thorax is truncated on the posterior part, with the first very short and arched segment. The metasoma is oval, base-rounded, more or less convex on the ventral side.

This family is composed of three genera: *Bethyle*, *Sparasion* and *Clepte*. The main character that separates these genera is the ratio between the second and the third antennal segment. In the case of the first genus, the two segments are equal, for the second genus, the second segment is much shorter than the third one, and in the case of *Clepte*, the third segment is much longer than the second one.

Sparasion is an up-to-today valid genus. These are the characters proposed by LATREILLE to delimitate the typefiers of this genus from the rest of the Hymenoptera: Antennae with distinct articuli, the second articulus is much shorter than the third one, the later one being the longest. Mandibles with 2-3 teeth. The head is big, bellied, and almost pyramidal. The thorax has the length equal to the width. The metasoma is oval, tabloid. The type species is *Sparasion cephalotes* Latr.

Again, LATREILLE, two years later, described the genus *Scelio* with the species *Scelio rugosulus* and *Scelio clavicornis*, the last one being transferred to *Teleas* in the year 1809. In the same paper (1809), LATREILLE created a new genus, *Platygaster*, the type species being *Platygaster ruficornis* (the type material is unknown, but it seems to be a species of what today is called *Isocybus* Forst.) (Vlug, 1973).

HALIDAY (1833) published an essay regarding the British parasitic Hymenoptera. The respective study presents the parasitic Hymenoptera known in those times, divided into three families: Ichneumonidae, Chalcididae and Oxyuri.

The family Oxyuri Latr. is synonymized with Proctotrupini Latr. and Codroni Dalm. This family is furthermore divided into the following smaller groups (subfamilies): Platygastres, Ceraphrontes, Dryini, Proctotrupes, Diapriidae. The members of these groups are separated by characters such as: the way in which the metasoma is attached to the thorax, the number of articuli in the antenna embodiment, the maxillary lobe shape, the mandible shape.

The typefiers of the Platygastres group are characterized by a sessile, dorsal-ventral oblate metasoma, surrounded by a ditch on the ventral side; antennae are composed of 10-12 articuli, the maxillary lobe completely membranous. Thenceforth, 14 species are presented from this group, belonging to nine genera: *Scelio* Latr., *Platygaster* Latr., *Inostemma* Haliday, *Baeus* Haliday, *Telenomus* Haliday, *Gryon* Haliday, *Teleas* Latr., *Thoron* Haliday, and *Sparasion* Latr. As one can observe, in the four genera described by LATREILLE, HALIDAY adds five genera described by him for the first time. The type species are: *Inostemma boscii*, *Baeus seminulum*, *Telenomus brachialis*, *Gryon misellum*, and *Thoron metallicus*. All these genera and species presented are valid even today.

Also, in this paper, the following synonymies are realized: *Inostemma boscii* Haliday — *Platygaster boscii* Latr. — *Psilus boscii* Jur.; *Platygaster tipulae* Haliday — *Ichneumon tipulae* Linn. — *Ichneumon tipulae* Kirb.; *Gryon misellum* Haliday — *Telenomus misellus* Curt.; *Thoron metallicus* Haliday — *Teleas metallicus* Curt.

From the analysis of the species presented in this paper one can observe that the authors delimitates *Inostemma* from *Platygaster*, differentiating the two genera based on the venation of the fore wing (in *Platygaster*, the fore wing venation is absent, whereas in *Inostemma* we can observe a truncheon-terminated subcostal); *Gryon* is separated from the *Telenomus* by the following characters: the first metasomal segment shape, in comparison with the second segment (the first segment is very short in the first genus, and the second segment is very well developed, being the biggest in the second genus, the first three metasomal segments being well developed), the number of the articuli embodying the antenna (in the case of *Telenomus* females 10-11 articuli, in the case of *Gryon* females, 12 articuli), the length of the stigmal vein (which is short in *Gryon*), and

Thoron from *Teleas* based on the articuli number in the embodiment of the antenna (11 in *Teleas* and 12 in *Thoron*), the fore wing venation (in *Teleas*, the stigmal vein is short, whereas in *Thoron* is well developed), the number of articuli in the maxillary palpi embodiment (3 articuli in *Teleas* and 4 articuli in *Thoron*).

Also from the analysis of the species accounted in this paper one can observe that the *Platygaster* was more exhaustive than in the contemporaneous acceptance, the *Platygaster tipulae* was placed in this genus, also today it is placed in *Leptacis* Forst.

In the following section, we are presenting the first system of classification for the present Platygastridae and Scelionidae, as imagined by HALIDAY in 1833 (Entomol. Mag. 1. pp. 269 - 272).

“Oxyuri. Latr. (Proctotrupini. Latr. Codroni. Dalm.)

1. Platygastrae. Abdomen sessile depressum segm. 1. haud campanulato, ventre marginato: antennae prope os insertae fractae 10 - 12 articulae, radícula saepe exserta: maxillarum lobus membranaceus integer :

* Palpi breves frons rotundata.

† Thorax oblongus, collari amplo bilobo:

vii. Scelio. Antennae feminae 12 - articulae: palpi maxillares 3 - articulati: areola radialis elongata trigona, nervus subcostalis a costa remotus *Scelio rugosulus*, Latr.

i. Platygaster. Antennae 10 - articulae: palpi maxillares biarticulati: alae exareolatae: pedes haud saltatorii:

1. Inostemma. Nervus subcostalis abruptus capitatus: antennarum clava 4 - articulata *Platygaster Boscii*, Lat. Curt. B. E.

Psilus Boscii, Jur.

2. Platygaster. Alae anticae aveniae:

a. Antennarum clavae abruptae 4 - articulae: scutellum mucronatum *Platygaster Tipulae recentiorum*.

Ichn. Tipulae, Linn. F.S, Kirb.L. T.v.

b. Antennae apice sensim vel parum crassiores articulo 3. minuto vel penitus oblitterato

a. Scutellum mucronatum s. fasciculatum *Platygaster ruficornis*,

Latr.

b. Scutellum obtusum *Platygaster elongatus*

Curt. G.

†† Thorax brevis collari lineari - arcuato: pedes saltatorii.

‡ Scutellum nullum:

v. Baeus. Corpus brevissimum contractum apterum: antennae feminae breves clava compacta 5 - annulata, ovato - acuminate. Mas, incognitus *Baeus seminulum*, ined.

Teleadi affinis etiam generi Crantori inter Encyrtos haud dissimilis ob «faciem subcolopratam» (Dalm.)

‡‡ Thoracis segmenta aligera discreta: nervus subcostalis marginem longius occupans et ramulum stigmaticalem emittens, vel alae nullae.

ii. Telenomus. Ramulus stigmaticalis in discum alae oblique descendens: abdominis segmentum primum brevissimum, secundum longe maximum: antennae feminae apice sensim clavatie: palpi maxillares biarticulati: mandibulae arcuatie apice denticulatae (saltem in *T. branchiali*.)

a. Antennae ♂ 12 - articulae flagello filiformi: abdomen ovatum *Telenomus ater*, ined.

- b. Antennae ♀ 10- vel 11 articulatae: abdomen ovatum caput transversum *Telenomus brachialis*, Curt. G.
- c. Antennae ♀ 11 - articulatae: caput subcubicum:
 - a. Abdomen ob-ovatum *Telenomus heteropterus*, Curt. G.
 - b. Abdomen conicum elongatum *Telenomus othus*, ined.
- iii. Gryon. Antennae 12-articulatae maris flagello filiformi crassiusculo, feminae clava 5-annulata: ramulus stigmatalis brevis: abdomen ovatum segmentis anterioribus aequalibus tertio brevioribus *Gryon misellum*
Telenomus misellus, Curt. G.

Curt. G.

Cum Teleade jungendus sub sectionem propriam si trophi satis convenient id quod adhuc est incomptum.

- iv. Teleas. Antennae 11-articulatae maris flagello lineari elongato articulo 5 angulato; feminae clava quinque-annulata: palpi maxillares 3 - articulati; mandibulae apice emarginatae. Ramulus stigmatalis brevissimus: metathorax mucronatus: abdomen ovatum segmentis anterioribus subaequalibus, 3 majore: species plurimae apterae
Teleas clavicornis, Latr.
- vi. Thoron. Antennae 12-articulatae radícula elongata, maris flagello filiformi, feminae clava 5- annulata; palpi maxillares 4-articulati; labiales subulati 2-articulati; mandibulae latae tridentes: ramulus stigmatalis in discum alae oblique descendens: abdomen obovatum segmentis anterioribus subaequalibus 3. majore. Corpus aeneonitens
Thoron metallicus
Teleas metallicus, Curt.

G.

** Palpi maxillares praelongi: frons elevata.

- viii. Sparasion. Antennae 12-articulatae *Sparasion frontale*, Latr."

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WESTWOOD (1835) described a new genus of Scelionidae, *Macroteleia*, included by him in Proctotrupidae. This genus, valid even today, is characterised by an oblong linear body, round head, with the width equal to the thorax. The antennae in both sexes are long, equal to the thorax, formed from 12 articuli, moniliform in male's case, and clavated in female's case. The metasoma is sessile, oblong, with longitudinal striations. The type species is *Macroteleia clenymoides* Westw.

WALKER (1836a, p. 217) brings once again in discussion what HALIDAY has called stirpium Oxyurites or Proctotrupies, which he considers to be a tribe of parasite Hymenoptera with a great structural variety. However, these Hymenoptera, says WALKER, are poorly known because of their small dimensions and their coloring, which in most cases is black, these characteristics transforming this group in a less attractive one for the researchers. The author delimitates the typefiers of this group from the typefiers of Chalcidoidea and Ichneumonidae by "the the ovipositor shape which is flexible, retractile, and tubiform, like that of the Chrysididae. They have most affinity to

the Cynipites, but these are at once known by the peculiar conformation of the wing-nervures ”.

WALKER divides the Oxyurites into two great groups: *Platygaster* and *Teleas*.

The common character of the two groups is the presence on the metasoma ventral side of a laterally situated ditch, which encircles the metasoma. The species from the *Platygaster* group distinguish themselves from the other species by the wing venation. This is generally atrophied, almost disappeared, but in several species still exists one subcostal vein that terminates in a round shape before reaching the middle of the wing, and in two cases, this vein is bifurcated.

WALKER (1836a) divided this group *Platygaster* into two subgroups based on the scutellum shape criterion, but also on some small characters easy to observe.

Several species are included in the first subgroup. They have the scutellum more or less oblong, acuminate-terminated. Generally, these species have a hair-covered body, female antenna is bludgeon-shaped, with a very distinctive clava and thorax is smooth and glossy. The female metasoma varies very much in shape, the second metasomal segment showing two impressions at the base. The wings are purl-free.

The second subgroup consists of species with tuberculate scutellum, the body is seldom covered by hairs, and antennae are superficially clavated. The thorax shows a punctuated sculpture, the metasoma has the same form in both sexes, the second metasomal segment presents striations at the base. On the edges, the wings often present purls.

In this paper, we also indicate the fact that in the case of the typefiers of *Platygaster* group, the sexes generally resemblance each other, but the male is easy to recognise from the female by the antenna shape, the articulus 4 being much more developed at the former, and the tenth articulus is longer and sharper.

The body colour, as it was mentioned, is generally black, with legs and antennae often red, the wings are pubescent, often showing iridescences. They parasite small Diptera (Cecidomyiidae) that infest the corn, other cereals and also other plants.

In the following paragraph, we present the way in which WALKER divides the *Platygaster* group in genera and, subsequently, in groups of species:

“*Platygaster* group:

* Tarsi pentameri

Genus I. *Platygaster*, Latreille

* Thorax compressus

** Thorax non compressus

* Scutellum productum

† Scutellum valde productum, spiniforme, abdomen attingens.

†† Scutellum productum, compressum, acuminatum, abdomen non aut vix attingens.

††† Scutellum brevius, vix acuminatum, abdomen non attingens.

†††† Scutellum obtusum, vix productum

** Scutellum tuberculo simile, non productum

† Fem. abdominis segmenta postica attenuata

§ Mesothoracis parapsidum suturae conspicuae; scutellum convexum: abdomen thorace plus duplo longius.

§§ Mesothoracis parapsidum suturae optime determinatae; scutellum globosum: abdomen thorace vix duplo longius.

§ Mesothoracis parapsidum suturae conspicuae.

§§ Mesothoracis parapsidum suturae vix conspicuae.

†† Mari. et Fem. abdomen ovatum aut longi - ovatum non attenuatum.

§ Thorax punctatus.

‡ Mesothoracis parapsidum suturae conspicuae.

‡‡ Mesothoracis parapsidum suturae vix conspicuae.

§§ Thorax laevis, nitens.

Genus II. *Inostemma* Haliday

† Antennae 10 - articulatae

Div. 1. Fem. - Caput et thorax abdominis cornu receptione sulcata: antennae clavatae, capitis thoracisque vix longitudine; articuli 2 ad 4 longi-cyanthiformes, angusti; 5 et 6 multo breviores, non latiores; 7 multo latior; 8 et 9 adhuc latiores; 10 ovatus, vix acuminatus: abdomen acuminatum, quam mari longius, apice paulo elevatum; segmentum 2 ejus dimidium occupans; 3 et 4 brevia; 5 et 6 longiora: segmenta ventralia eodem modo disposita, marginem utrinque fingentia: cornu arcuatum, levissime striatum, segmenti 1 dorso affixum, thorace applicatum et caput attingens: oviductus abdomine duplo longior, in cornu receptus?

Div. 2. Fem. - Antennae capitatae, capite thoraceque breviores; articulus 2 cyanthiformis, mediocris; 3 et segmentes ad 6 minimi; 7 et sequentes magni, lati, approximati, clavam fingentes longi-ovatum; 10 subtrigonus, 9 longior, vix acuminatus: thorax brevi-ovatus, convexus; mesothoracis parapsidum suturae conspicuae; scutellum semicirculum fingens, non prominens: metathorax brevis: abdomen oviforme, inerme, supra subtusque valde convexum, apice acuminatum; segmentum 1 breve, sublineare; 2 maximum; sequentia brevia: alae mediocres; humerus simplex.

Div. 3. Fem. - Antennae clavatae, corporis dimidio multo breviores, articuli 3 et 7. minimi, brevissimi, latescentes; 8 et sequentes maximi, lati; 10 conoides, 9 paulo longior: abdomen ovatum, thorace duplo longius, apice quasi caudam fingens; segmentum 1 brevissimum; 2 omnino laeve; apicalia gracillima, cylindrica, teretia.

Div. 4. Fem. - Corpus breve, crassum: caput thoracis latitudine: antennae clavatae, corporis dimidio paulo longiores; articulus 1 gracilis, fere filiformis; 2 cyanthiformis; 3 parvus; 4 et sequentes aequales, mediocres, subquadrati; 10 acuminatus, 9 duplo fere longior: thorax brevi-ovatus, convexus; prothorax brevissimus: mesothoracis parapsidum suturae vix conspicuae scutellum tuberculo simile; metathorax brevis: abdomen ovatum, convexum thorace paulo brevius et angustius; segmentum 2 magnum; 1. 3. etc. parva: alae mediocres: humerus ramulum emittens in alae discum recte delivem.

†† Antennae 9 articulate

Div. 5. Mas. - Antennae 9 articulatae, moniliformes; articulus 1 validus, fusiformis; 2 parvus, globosus; sequentes verticillato-pilosae, valde remoti; 3 magnus, brevi-fusiformis; 9 acuminatus: 8 multo longior, thorax latus, brevi-ovatus, supra planus prothorax brevissimus; mesothoracis parapsidum suturae vix conspicuae: scutellum breve, quasi semicirculum fingens: metathorax mediocris, utrinque angulatus: abdomen longi - ovatum, convexum, thorace multo angustius; segmentum 1 breve, latum; 2 maximum; sequentia brevissima subclavata; tibiae torsisque geacilia.

** Tarsi tetrameri.

Genus III. *Iphitrachelus* Haliday"

As it can be seen, WALKER undertakes all genera from HALIDAY, but works a lot upon them. *Platygaster* is divided into groups of species depending on the scutellum shape, the presence or absence of parapsidal ditches, and other characters. *Inostemma* is divided into divisions, depending on the metasoma and thorax shape, and on the antenna embodiment. These groups of species, or divisions, are undertaken, subsequently, by other authors and raised to the rank of genera. In his paper, WALKER presents 101 species of *Platygaster*, 96 of them are for the first time described by him. Out of the first group — species with oblong scutellum, today have remained unchanged only the species: *Platygaster leptines* Walk., *Platygaster filicornus* Walk., and *Platygaster rutubus* Walk., the rest of the species presented in this group were transferred by various authors to new genera: *Piestopleura* Forst., *Leptacis* Forst., *Synopeas* Forst., *Ambyaspis* Forst., *Trichacis* Forst., *Isocybus* Forst.

Species of *Platygaster* presented in the second group — species with the tubercle-shaped scutellum — remained valid until today, only the following species were synonymized by VLUG in 1985: *P. attenuatus* Walk. with *P. evadne* Walk.; *P. cratinus* Walk. with *P. cebes* Walk. and with *P. olorus* Walk.; *P. cleodaeus* Walk. with *P. abisares* Walk. and *P. ilione* Walk. with *P. vaenia* Walk., and the species *P. hyllus* was transferred to the genus *Synopeas* Forst. in 1856 (VLUG, 1984).

Out of *Inostemma*, 8 species are presented, of which 5 species are described for the first time. Until today, only species from the first division have remained unchanged. Species from the other divisions were transferred to genera: *Isostasius* Forst., *Metaclisis* Forst. and *Allotropa* Forst. by various authors.

In the same year, WALKER (1836b) created the tribe Teleadidae in which he included the genera *Baeus* Halid., *Gryon* Halid., *Telenomus* Halid., *Thoron* Halid., *Xenomerus* Walk., *Teleas* Latr., *Scelio* Latr., and *Sparasion* Latr. One can observe that in this paper WALKER described a new genus, named *Xenomerus* Walk. (valid till today). It is interesting to notice that the author misses out *Macroteleia* Westw., a genus published only a year before. This article is the HALIDAY's paper (1833) from were WALKER reproduced and completed the genera's descriptions.

Xenomerus is a genus described as being related to *Teleas*, from which it can be easily differentiated because of the antennae. In the case of *Teleas* typefiers, the antennae show multiple short hairs, whereas in the case of *Xenomerus* typefiers, long hairs are

present on the antennae, disposed in verticilli. Other features that characterize this genus are: antennae of 12 articuli, moniliform for male, the metasoma with the segment 3 best developed. The type species is *Xenomerus ergenna*, valid also today.

The tribe Teleadidae is characterized by a fundamental feature, namely the strong development of the metasomal tergites, which on the metasoma sides form an edge similar to what happens in the case of *Platygaster*, from which delimits itself by a number of distinct characters, such as: the antennae, formed by a larger number of articuli, and along the anterior edge each wing shows one vein, which at the anterior wings emanates a small ramification.

Some typefiers present visible similarities with the typefiers of the genera *Encyrtus* Latr. or *Mymar* Curtis. They are parasitic Hymenoptera on the eggs of other insects; some of them can move through jumps, a faculty that Platygastridae do not possess. Although they have this faculty, the typefiers of *Scelio* Latr. do not use it. The *Sparasion* Latr. have the oral pieces very well developed and can hardly be considered to be a part of this tribe, they can run very well, but do not possess the capacity to jump.

By the way of this study, WALKER also contributed to the enrichment of the number of species belonging to the already known genera: from *Baeus* Halid., he presented only one species, from *Gryon* Halid. — 4 species from which 3 new, from *Thoron* Halid., one species, from *Xenomerus* Walk., one new species, from *Telenomus* Halid., 26 species of which 22 new species, from *Teleas* Latr. 30 species from which 26 new species, and from *Sparasion* Latr., one single species.

Today, from *Gryon* remained valid only *G. matuta*, the other two species being transferred by FORSTER (1856) into *Trimorus* Forst. In *Telenomus*, of the 22 new species, 21 are valid also today, only *T. belenus* being transferred into *Trissolcus* Ashm. by FERGUSSON (1978).

In *Teleas*, of 30 mentioned species, today remained valid only the following species: *T. clavicornis* Latr., *T. brasilas* Walk., and *T. pulex* Haliday. *T. varicornis* and *T. metabus* were synonymized between themselves by SZABO (1963), and the same author synonymized *T. doto*, *T. mermerus*, *T. smerdis* and *T. therycides* in 1966. The other species from this genus were transferred to *Trimorus* Forst. This fact shows that, at that moment, *Teleas* was much more exhaustive. These are the distinctive characters of this genus, as established by LATREILLE and, subsequently, revised by WALKER: (1836b, pp. 356 - 357).

”Corpus compactum, convexum, pilis albidis hirtum: caput mediocre, transversum, subquadratum, thoracis vis latitudine: mandibulae longae, subquadrate, tridentate, paullo arcuatae, basi intus dilatatae; dentes acuti, externus mediocris, internus minor, medius adhuc minor: maxillae latae, subtrigonae, intus apice lobo brevi terminatae; palpi triarticulati, graciles, filiformes; articulus 1 mediocris; 2 brevior; 3 acuminatus, 1 et 2 longitudine: labium obconicum, mediocre; ligula non conspicua; palpi uniaarticulati, brevissimi: antennae 12-articulatae, pubescentes, basi pedicello unico ortae: mari antennae filiformes aut moniliformes; articulus 1 longus, minime arcuatus; 2 brevissimus; 3. 1. brevior; 4. et sequentes ad 11. longitudine descrentes; 12. acuminatus, 11 paullo longior: fem. antennae plus minusve clavatae; articulus 1 longissimus, subarcuatus; 2 longi-cyathiformis, gracilis; 3 et 4 longiores, subaequales; 5 et 6 minuti; 7 et sequentes ad 12 latiores, breves, clavam fingentes fusiformem: oculi mediocres, laterales, vix prominentes: ocelli 3, vertice triangulo instructi: thorax brevi-ovatus: prothorax brevissimus, supra vix conspicuus: mesothorax maximus; scutum et scutellum magna, hoc semicirculum fingens, ejus parapsides vix conspicuae; post scutellum fingens, ejus parapsides vix conspicuae; post scutellum spinam emittens brevem validam arcuatam: metathorax mediocris, scaber, utrinque bispinosus: abdomen fere planum, ovatum aut subfusiforme, thorace plerunqne longius; segmenta 6 dorsalia et totidem ventralia conspicua, quorum 1. angustum, 2 longius, 3 adhuc longius, 4, 5 et 6 parva: pedes pubescentes; coxae et trochanteres parva; protarsi breves articulo 1 validiore subarcuato: articuli 1 ad 4 longitudine descrentes, 5. 4. paullo longior; ungues et pulvilli minuti: alae angustae, subtilissime pubescentes, iridescentes, cuique nervus costalis unicus, alae triente brevior, apice ramulum emittens brevem stigmate terminatum minimo: metalae nervo unico simplici, dimidii longitudine.“

In this paper, the author presents also some synonymies:

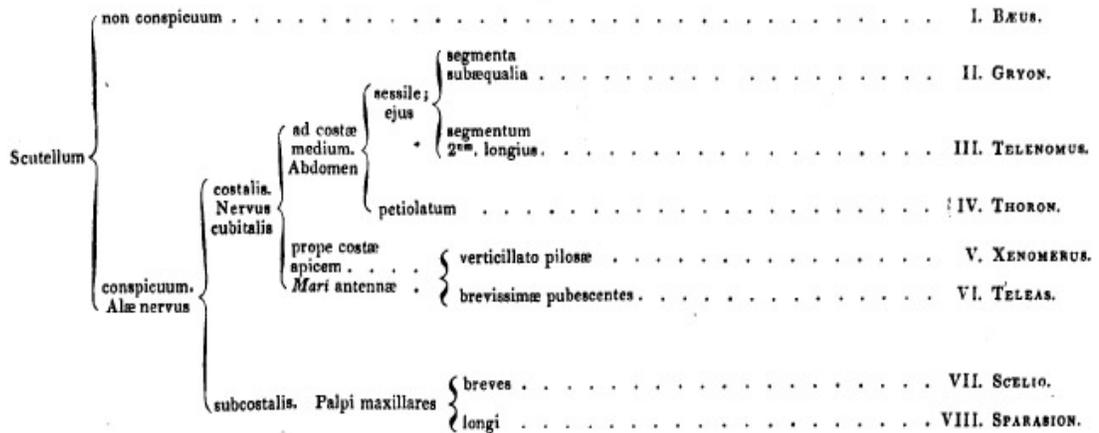
— *Thoron metallicus* Haliday – *Teleas metallicus* Haliday – *Teleas fornicatus* Nees ab Esenbeck – *Teleas solidus* Walk.;

— *Teleas clavicornis* Latr. – *Scelio brevicornis* Latr. – *Scelio longicornis* Latr. – *Cinipsillum clavicorne* Lam.;

— *Scelio rugosulus* Latr. – *Ceraphron cornutus* Latr. – *Oxyurus frontalis* Lam.

DALLA TORRE synonymizes the last species, *Sparasion frontale* Latr., in the year 1989 with *Sparasion cephalotes* Latr.

In the subsequent paragraph, we present the situation of the Scelionidae genera, as viewed at the level of 1836 (1836b: 342):



Two years later, the same author publishes “Descriptions of Some Oxyuri”, paper in which are published: three species belonging to *Telenomus* Halid., 5 species from *Inostemma* Halid. and one species from *Platygaster* Latr. *Platygaster xeneus*, *Inostemma hispo*, *Inostemma favo*, *Telenomus vibius* and *Telenomus mentes* are valid species today. *Inostemma boter* was transferred by KIEFFER (1914) into *Acerota* Forst., and *Inostemma europus* in *Allotropia* Forst. by VLUG (1984). FERGUSSON (1978) transfers *Inostemma ocalea* into *Metaclisis* Forst., and *Telenomus theste* into *Trissolcus* Ashm.

In 1837, CURTIS published a list with 115 Platygastriidae from Great Britain and Ireland.

WESTWOOD (1837) (in ASHMEAD, 1893) published *Calotelea*, a genus that remains valid till today. The typefiers of this genus distinguish themselves by the transversal head, with convex forehead and rounded occiput; the ocelli, three in number, are disposed in triangle shape, the lateral ones are very close to the eyes. The eyes are big, oval, with few hairs or completely without hairs. The antennae are inserted above the clypeus, composed of 12 segments in both sexes. In male, the antennae are filiform, and in female they are bludgeon-shaped, the clava being composed of 5 or 6 segments, the last 2 segments of the funiculus are transversal or square-shaped. The mandibles present three teeth. The maxillary palpi are composed from 4 segments, and the labial ones from 3 segments. The metasoma is long, fusiform, acuminated at the end. The first segment in female presents a horn that expands above the metathorax. The marginal vein is usually spot-like, or at least very short, and the metasomal petiole is oblong and slender. The type species for this genus is *Calotelea aurantia* Westw.

The number of Scelionidae and Platygastriidae species published by WALKER increases along with the apparition of his *Monographia chalciditum* (1839), and the number of genera increases by the publication, in 1842, of a new genus — *Romilius*, a genus under the mark of questioning today, because of the fact that the type species could not be examined. Because the examination of the type species could not be performed, this genus could not be confirmed or rejected by the authors who have accomplished various modern resurveys.

The genus is characterised by oblong, contracted, almost linear, slightly convex body. Transversal, short head, a little broader than the thorax, wide vertex, and small eyes, slightly prominent; black antennae, subclavated, inserted close one to each other,

very near to oral orifice. The first antennal segment is reddish, oblong, fusiform, the second one is oblong, campanulated, 3 and 4 are long, linear, and with the beginning of the 5th segment and till the 10th segment included, all of them are shorted, forming the clava. The oval oblong thorax, with a very short prothorax, big metathorax with three narrow longitudinal ditches, small semicircular-shaped scutellum. The metasoma is oblong, fusiform, acuminate at the end, much longer than the thorax. The first metasomal segment is short, the second and the third ones are the biggest, and the segments 4, 5 and 6 are short.

The type species is *Romilius zotale* Walk. As a consequence of the description realized by the author, this genus approximates *Macroteleia* described by WESTWOOD in 1835.

MASNER (1976) affirms that he has doubts regarding this genus, in which it was impossible to analyze the type species, observations being realized only upon a male of *R. duris* Walk. This specimen presents in the thorax apex two thorns identical with that of *Triteleia* Kieffer species. Because the specimen examined was not in a too favorable condition, the author was not able to realize the synonymy between the two genera; all he could remark was that is possible that this genus could be synonymous with *Triteleia* Kieffer.

In 1839, HALIDAY, in his *Hymenopterorum Synopsis* (in ASHMEAD, 1893), places all known Scelionidae and Platygastriidae in the 12th, Scelionidae Family, along with the following families: Proctotrupidae, Pelecinidae, Diapriidae and Ceraphronidae. These five families compounded the third tribe — Oxyura, which was part of Stirps 3 – Terebellifera, the second suborder – Petioliventres. The interesting fact is that the Mymaridae family, placed by more recent authors along with the Proctotrupidae, is this time separated, in another tribe — Tribe 4 Halticoptera.

WESTWOOD (1840), in his study *Introduction to the Modern Classification of Insects* (in Ashmead, 1893), grouping the Scelionidae and Platygastriidae in the Platygasterides subfamily, which, along with the families of Mymarides, Ceraphrontides, Gonatopides, Proctotrupides and Diapriides, were making out the family of Proctotrupidae. The typefiers of Platygastriidae subfamily distinguished themselves from the typefiers of all other subfamilies by the sessile, dorsal-ventral oblate metasoma, with the first segment noncampanulate. The geniculate antennae, formed by 10-12 articuli, are inserted right above the mouth.

The 1856 year is very important for research in the Scelionidae and Platygasteridae. In this period FORSTER' work is published, entitled "Chalcidiae und Proctotrupii", a paper in which all the genera grouped by WALKER in Teleadidae are interpolated in a family named Scelionoidae, a family unchanged till today. Also in this paper, all the genera included by WALKER in the Platygaster group are now grouped in the Platygasteroidae family. Forster placed these two families Scelionoidae and Platygasteroidae between Proctotrupii, next to: Dryinoidea, Ceraphronoidea, Proctotrupoidea, Mymaroidae, Diaprioidea, Belytoidea and Heloroidea families.

In this study, FORSTER realizes a resurvey of all known Scelionoidae and Platygasteroidae until that moment. He creates from these two groups two distinct families, which are valid even today. Along with the apparition of this first resurvey, the science enriches itself with 8 new genera of Scelionidae (*Acolus*, *Baeoneura*, *Anteris*, *Baryconus*, *Trimorus*, *Apegus*, *Hadronotus*, *Idris*) and 18 new genera of Platygasteridae (*Allotropa*, *Metaclisis*, *Monocrita*, *Isostasius*, *Acerota*, *Catillus*, *Xestonotus*, *Amblyaspis*, *Leptacis*, *Isorhombus*, *Ectadius*, *Sactogaster*, *Synopeas*, *Anopedias*, *Isocybus*, *Trichacis*, *Hypocampsis*, *Polygnotus*). Although Forster had made some research on *Macroteleia* Westw. and *Calotelea* Westw. genera, he didn't mention on them in his key of determination on Scelionoidae family.

FORSTER describes *Acolus*, a genus close to *Baeus*, because of the wings, which in both genera are diminished, or even absent, and because of the antenna. The difference between the two genera is given by the scutellum shape, much reduced in *Baeus* and well developed, easy to observe in *Acolus*. *Acolus* was synonymized by MASNER (1976) with *Gryon* Haliday.

Baeoneura has as fundamental characters the antennal clava with evident lines of suture and the short submarginal vein, which does not reach the wing edge. Therefore, in this genus, the marginal vein is missing from the fore wing venation. At this moment, this genus is considered a synonym of *Macroteleia* Westwood (MASNER, 1976).

Close to *Telenomus* Haliday, FORSTER creates two new genera, *Anteris* and *Baryconus*. The common character of these three genera is the first metasomal segment, which is slightly flat, and the rest of the metasoma is no more flat than the first segment. *Telenomus* can be easily differentiated from the other two genera because of the great development of the second tergite. In *Anteris* and *Baryconus*, the third tergite has the

biggest development. The character that differentiates these two genera between themselves is the stigmal vein shape, which in the *Anteris* case is base-thickened.

ASHMEAD (1893) indicates the fact that *Baryconus* Forster is very much alike the *Caloteleia* Westwood, although these two genera can be easily separated because of the first metasomal segment shape and because of the marginal vein aspect. At this point, both *Baryconus* and *Anteris* are valid. For *Baryconus*, FORSTER has not designated a type species, and for *Anteris*, the type species indicated by the author is *Anteris rufitarsius* Forst.

Teleas Latr. and *Gryon* Haliday are more clearly delimited; from both genera, a series of typefiers are transferred into a new genus, named *Trimorus*. The newly formed genus delimitates itself from *Teleas* Latr. by the posterior femora shape, which is thinner, and from *Gryon* on the fact that metascutellum is provided with a thorn. Close to *Trimorus*, FORSTER creates a genus named *Apegus*. These two genera are distinct because of the metascutellum shape and because of the fact that the females of *Apegus* are provided with filiform antennae, as opposed to the *Trimorus* females, which present bludgeon-shaped antennae. They are *Trimorus (Gryon) nanno* Walk. and *Apegus leptocerus* Forst type species.

MASNER (1976) considers *Apegus* Forst. near to *Baryconus* Forst., these two genera being separated based on some characters that affect the cephalic region and the thorax.

Hadronotus is delimited by Forster from *Gryon* based on the form of marginal vein (punctilious in *Gryon* and half equal or equal to the stigmal vein in *Hadronotus*) and based on the ratio between the last and the penultimate antennal segment (equal to 2 in *Gryon* and to 1 in *Hadronotus*). Today, these two genera are synonymized (MASNER, 1976).

Idris described by FORSTER is valid until today, but a peculiar fact is that the author places this genus in the proximity of *Scelio*, among the genera with clearly segmented clava. The placement of this new genus was probably determined by the fact that the author described a male.

In the contemporaneous acceptance, this genus is very close to *Baeus*, due to the antenna shape with massive clava, and segments composing the clava not delimited between them, but welded. Another character that draws these two genera close to each other is the degree of wings development, which, in many cases, in females of both

genera, could be absent. The clean-cut difference between these genera is seen at the scutellum and the first metasomal segment level. In *Baeus*, the scutellum has the shape of an arched line, difficult to see, and the first metasomal segment is flat, while in *Gryon*, the scutellum is easy to observe, and the first metasomal segment is contracted. The type species for *Idris* is *Idris flavicornis* Forst.

In the family Platygasteridae, FORSTER maintains the genera: *Platygaster* Latr., *Iphetrachelus* Halid., and *Inostemma* Halid. These genera, as established by HALIDAY (1833), were very exhaustive. WALKER (1836a) groups the species from these genera in groups, taking a series of distinctive easily observed characters into consideration. Part of these characters is subsequently used by FORSTER, who raises many of the species groups established by WALKER at the rank of distinct genera.

In the following paragraph, we are presenting the Platygasteridae classification system, as accomplished by FORSTER (1856, pp. 106 - 108):

- a. Die Unterrandader an der Spitze mit einem Knöpfchen
- b. Tarsen viergliedrig *Iphetrachelus*
Hal.
- bb. Tarsen fünfgliedrig.
- c. Fühler neungliedrig, beim ♂ gesägt *Allotropa m.*
- cc. Fühler zehngliedrig, beim ♂ nicht gesägt.
- d. Flügel mit einer Grund- und Mittelader.
- e. Die drei letzten Geisselglieder viel grösser als die vorhergehenden, eine Keule bildend *Metaclisis*
m.
- ee. Das letzte Glied allein grösser als die vorhergehenden *Monocrita*
m.
- dd. Flügel ohne Grund- und Mittelader.
- f. Die paarigen Nebenaugen stehen dem unpaarigen näher als dem inneren Augenrande *Isostasius*
m.
- ff. Die paarigen Nebenaugen stehen dem inneren Augenrande näher als dem unpaarigen.
- g. Das ♀ mit einem Horn auf dem ersten Segment *Inostemma*
Hal.
- gg. Das ♀ ohne Horn auf dem ersten Segment *Acerota m.*
- aa. Die Unterrandader an der Spitze ohne Knöpfchen.
- h. Das Schildchen mehr oder weniger verlängert, nicht halbkreisig, oder wenn verkürzt, dann immer von der Seite zusammengedrückt, mit einer pfriemen- oder warzenförmigen Spitze versehen.
- i. Der Mittelleib von der Seite auffallend zusammengedrückt *Catillus*
m.
- ii. Der Mittelleib nicht von der Seite zusammengedrückt.
- k. Das Schildchen verlängert, ohne dorn-, pfriemen- oder warzenförmige Spitze.
- l. Die Furchen der Parapsiden tief, nach der Spitze hin parallel; eine Fühlerkeule beim ♀ nicht abgesetzt, die zwei letzten Geisselglieder getrennt
Xestonotus m.
- ll. Furchen der Parapsiden ganz undeutlich oder fehlend; beim Weibchen mit viergliedriger Keule, die zwei letzten

Geißelglieder eng verbunden

Amblyaspis m.

kk. Das Schildchen verlängert , mit einer dorn-, pfriemen- oder warzenförmige Spitze.

m. Das Schildchen geht in einen mehr oder weniger starken Dorn aus.

n. Die paarigen Nebenaugen stehen dem inneren Augenrande näher als dem unpaarigen; Keule beim ♀ viergliedrig

Leptacis m.

nn. Die paarigen Nebenaugen stehen dem inneren Augenrande nicht näher als dem unpaarigen; Keule beim ♀ dreigliedrig Kopf von vorne gesehen rautenförmig

Isorhombus m.

mm. Das Schildchen geht in einen pfriemen- oder wazenförmige Spitze aus, ist etwas verkürzt und von der Seite zusammengedrückt.

o. Der Hinterleib sehr stark verlängert

Ectadius m.

oo. Der Hinterleib nicht besonders verlängert.

p. Das zweite Bauchsegment beim ♀ stark zusammengedrückt, sackartig

Sactogaster m.

pp. Das zweite Bauchsegment beim ♀ nicht sackartig

Synopeas m.

hh. Das Schildchen nicht verlängert, sondern halbkreisig; entweder flach, konvex oder polsterförmig.

q. Das Schildchen ganz flach

Anopedias m.

qq. Das Schildchen nicht flach.

r. Der Kopf kubisch

Isocybus m.

rr. Der Kopf nicht kubisch.

s. Das Schildchen an der Spitze mit einem Haarbüschel

Trichacis m.

ss. Das Schildchen an der Spitze ohne Haarbüschel.

t. Der Hinterleibsrand sehr breit umgeschlagen

Hypocampsis m.

tt. Der Hinterleibsrand nicht breit umgeschlagen.

u. Das Schildchen vollkommen polsterförmig, an der Basis durch eine tiefe Rinne vom Mesonotum geschieden; Schläfen sehr breit

Polygnotus m.

uu. Schildchen an der Basis nicht durch eine tiefe Rinne vom Mesonotum geschieden; Schläfen nicht sehr breit

Platygaster Latr.

If we compare the classification system of the Platygastridae proposed by WALKER (1836a) with the system proposed by FORSTER (1856) one can easily observe that the genera *Allotropa*, *Metaclisis*, *Monocrita*, *Isostasius* and *Acerota* derive from *Inostemma* Haliday, and the genera *Catillus*, *Xestonotus*, *Amblyaspis*, *Leptacis*, *Isorhombus*, *Ectadius*, *Sactogaster*, *Synopeas*, *Anopedias*, *Isocybus*, *Trichacis*, *Hypocampsis* and *Polygnotus* derive from *Platygaster* Latreille.

The splitting of *Inostemma* is accomplished based on the number of articuli that compose the antenna, on the clava shape, on the fore wing venation, and on the presence

or absence of the horn on the first gastral segment. WALKER used the same criteria also at the assortment of this genus in divisions. *Platygaster* is, at its turn, divided into a number of genera, the scutellum shape being taken into consideration, a criterion discussed also by WALKER.

From the genera presented by FORSTER, the following ones have remained valid: *Allotropia*, *Metaclisis*, *Isostasius*, *Catillus* (which was also synonymized by FORSTER with *Piestopleura*, customary today), *Anopedias*, *Trichacis*, *Isocybus*, *Synopeas*, *Sactogaster*, *Leptacis* and *Amblyaspis*.

KOZLOV, in 1978, synonymized the genera *Sactogaster* and *Synopeas*, *Sactogaster* being viewed as a subgenus of *Synopeas*.

Monocrita Forst. was synonymized with *Isostasius* Forst. by MASNER in 1965; the type species of *Acerota* Forst., *Acerota caryae* Ashm., was transferred by MASNER (1964) into *Inostemma*, and the remainder of species from this genus was transferred into *Acerotella* Masner by the author.

The *Xestonotus* Forst. is not valid anymore. The type species — *Xestonotus andriciphilus* Ashm. — was transferred into *Leptacis* Forst by MASNER 1964, and the rest of the species into *Euxestonotus* Fouts, by various authors (in VLUG, 1995).

Nor the genera *Ectadius*, *Isorhombus*, *Hypocampsis*, *Polygnotus* remained valid, the first one being synonymized with *Synopeas* by FOUTS in 1924, and the following ones with *Platygaster* by MUESESBECK & WALKLEY in year 1951 and FOUTS 1924 and 1920 (cf. VLUG, 1995).

Between 1858-1861, THOMSON published a series of articles in which FORSTER's Proctotruperi or WESTWOOD's Proctotrupidae family is divided into 11 tribes: Proctotrupini, Belytini, Ceraphronini, Diapriini, Ismarini, Helorini, Scelionini, Platygasterini, Telenomini, Dryinini, Epyrini.

THOMSON (1858) considered that the genera *Sparasion* Latr., *Scelio* Latr., *Thoron* Halid., *Anteris* Forst., *Acolus* Forst., *Teleas* Latr. and *Prosacantha* Nees von Esenbeck had a series of common characters, which could justify their grouping into a tribe named Scelionini. This tribe is also valid today, but in its modern concept, from the former constitutive genera only the genus *Scelio* has remained valid, the other genera being transferred into other tribes. The Scelionini tribe was characterized by: antennae inserted on a tubercle, above the clypeus, bifid mandibles, semicircular scutellum,

metathorax provided with a thorn; on the ventral side, the metasoma is surrounded by a ditch.

Prosacantha is presented as being very similar to *Teleas*. The common characters of these two genera are: the metasoma with the third best-developed segment, short stigmal vein, the antenna clava is formed from 6 segments, the antennal segment 5 and 6 are very small. The characters that separate these genera are represented by femora shape, the tibia and metatarsus shape, which in *Teleas* are dilated, and in *Prosacantha* are normally developed.

Two years later (1860), the same author created a new tribe — Telenomini. In the composition of this new tribe was included two genera: *Telenomus* and *Phanurus*. *Phanurus* is given as a new genus by THOMSON, the type species being *Phanurus angustatus*. The characters that differentiated these two genera consisted of the fact that in *Telenomus* the forehead shows a punctuated sculpture, and the ovipositor is not visible from the outside, being kept retracted in the interior of metasoma, while in *Phanurus*, the forehead is glossy, and the ovipositor is visible at the outside.

The characters that unite these two genera in the same tribe and distinguish them from other genera are: the antennae inserted on clypeus, regularly formed by 11 articuli in female, rarely 12, apical clavated. The metathorax is not thorn-provided. On the ventral side, the metasoma lacks the ditch. This tribe is also valid today.

Phanurus is no longer valid, being synonymized with *Telenomus* by MAYR in 1879 (in KOZLOV & KONONOVA, 1983).

KIRCHNER, 1867, in *Catalogus Hymenopterorum Europae*, published 159 species of Platygastriidae and Scelionidae and in 1873, MARSHALL published a catalogue that comprised the Hymenoptera from Great Britain in which only 111 species are included.

WALKER (1874) realized a comment upon FORSTER's work of 1856, of which he translated the determination keys for Scelionidae. As a completion of FORSTER's work, he comes with some very successful drawings for the species: *Telenomus brachialis*, *Telenomus laricis*, *Telenomus othus*, *Gryon misellus*, *Baeus seminulum*, *Prosacantha varicornis*, *Teleas clavicornis*, *Xenomerus ergenna* and *Thoron fornicatus*. He mentions that Scelionidae are very close to the Platygastriidae, but superior to the Mymaridae because of the wing development and venation of the later ones, similar to those of Chalcidoidea. The distinction between Scelionidae and Platygastriidae was supposed to be given by the antenna structure.

Comments are made on the ecology and biology of the species of *Telenomus*, with the specification that they are parasites on Lepidoptera and Hemiptera eggs, also regarding the *Thoron* species way of life. Here are made specifications regarding the fact that species from *Thoron* can be encountered on the plants that float on sloughs or even in water.

HOWARD (1886) realized another translation of FORSTER's work from 1856. The determination keys are not at all modified, but the Scelionidae and Platygastriidae families are treated as subfamilies of Proctotrupidae family, along with the subfamilies: Dryininae, Emboleminae, Ceraphroninae, Proctotrupinae, Mymarinae, Diaprinae, Belytinae and Helorinae. Also in this system, the Scelionidae are marked right beside the Platygastriidae, the great degree of kinship between them being emphasized. In addition, there is to be found one more difference between these two subfamilies: in the case of Scelionidae, the apterous genera do not possess ocelli, and in the case of Platygastriids, all genera possess ocelli.

ASHMEAD (1887) accomplished a study regarding the Proctotrupidae from North America. Besides the already known genera of Scelionidae, in this study he introduces a new genus, *Trisacantha*, valid also today. This genus is situated beside *Prosacantha* Nees, from which it differentiates itself by the fact that the metathorax shows three thorns. The type species is *Trisacantha americana*.

Acoloides is published for the first time by HOWARD (1890) and is described as being very similar to *Acolus* Forst. The only distinction between the two genera underlined by HOWARD is the presence, in *Acoloides*, of very developed wings, which, in *Acolus* are rudimentary or even missing. In *Palaeartic Scelionidae* (KOZLOV & KONONOVA, 2001), this genus is presented as a synonym of *Idris* Forst., the same as *Acolus* Forst.

ASHMEAD (1893) published an ample monograph entitled *Monograph of the North American Proctotrupidae*. FORSTER separates Proctotropii in 11 families, from these ones, in his monograph ASHMEAD recognizes only 10, which he considers to be subfamilies. The Mymaroidae subfamily is excluded from ASHMEAD's classification system, because the author considers this subfamily much closer to Chalcididae than to Proctotrupidae. This is how ASHMEAD characterized the Scelionidae family (pp.136 - 137):

“Head transverse or quadrate, often very broad and large. Ocelli 3, always present. Mandibles most frequently bidentate, although occasionally 3 - dentate. Antennae elbowed, insertid on a clypeal prominence or at the base of the clypeus, usually clavate, 11- or 12-jointed in the females, or if the club is unjointed, but 7-jointed; in the males filiform or setaceous, 12-jointed except in Scelio, where they are but 10- jointed. Maxillary palpi 2, 3, 4, or 5-jointed, labial palpi 2- or 3-jointed. The pronotum is Often not visible from above, or it is large, transverse, or quadrate: mesonotum generally short, transverse, with or without grooved furrows; scutellum generally semicircular, the axillae not distinctly separated; it is rarely spined or wanting, although the postscutellum is frequently spined; metathorax short, frequently with acute angles or spines. Front wings most frequently with submarginal, marginal, post-marginal and stigmal veins; the are rarely post-marginal and marginal veins are rarely absent, except in the tribes Baeini and Teleasini; if absent, in the tribe Scelionini, the submarginal vein terminates in a stigma or knob. Abdomen sessile, or subsessile, inserted above thecoxae, depressed and sharp-edged or strongly carinated along the sides, where the tergites join the urites; in shape it is variable: it may be broadly oval, oblong, ovate, fusiform, or linear, and often greatly elongated, composed of several segments; the second and third segments are usually much the largest, but occasionally the segments are nearly of an equal length. Legs moderate, the femora clavate, the tibiae subclavate or slender, the tibial spur usually 1,1,1, the middle and posterior spurs generally weak or poorly developed; the tarsi long, slender, 5-jointed.”

ASHMEAD presents Scelioninae subfamily as divided into four tribes: Telenomini, Baeini, Teleasini and Scelionini. Telenomini and Scelionini tribes were given by THOMSON (1858, 1860), and Baeini and Teleasini were created by the author.

Telenomini (valid also today) is undertaken from THOMSON (1858). Beside *Telenomus* and *Phanurus*, which until the moment were part of this tribe, ASHMEAD also includes the *Trimorus* Forst., the same as *Trissolcus*, *Dissolcus* and *Aradophagus*, described for the first time by him. These genera distinguish themselves from the other genera of Scelionidae by the lack of lateral keel at the metasomal level. *Trissolcus* and *Aradophagus* have remained valid, and JOHNSON synonymized *Dissolcus* with *Telenomus* in 1981.

Aradophagus distinguishes itself very easily from the other genera due to the antenna, which in female is composed of 12 articuli, due to the unfolded mezonotum, to the ocelli arranged in a triangle, the lateral ones on the forehead and due to the banded wings. The type species is *Aradophagus fasciatus*.

Trissolcus is close to *Telenomus* from which is separated because of the very broad forehead and of the presence of some short but distinctive ditches, which are prolonged from the eye to the back of the posterior ocelli. Another difference appears at the mesonotum level, which, in *Telenomus* case, does not show ditches, and in *Trissolcus* case exhibits 3 ditches. The type species is *Trissolcus brochymenae*.

Baeini is a small tribe, valid also today. The majority of the typefiers present reduced dimensions, in few cases larger than one mm. The species habitus is similar to the Telenominae habitus, but the easy observable difference appears at the level of antennal clava, which in this case is very strong developed, and the segments

composing it are fused. Other differences between the two tribes appear at the wing level, regarding both the wing shape, and the venation level. Thus, in Baeini, the venation is characterized by a punctilious or short and strong marginal, a short stigmal vein, thickened at the base and finalized through a small, round stigma. An evident difference appears at the metasomal level, where the segment 3 is best developed. In the composition of this tribe there were included the genera: *Thoron* Halid., *Acolus* Forst., *Acoloides* How., *Ceratobaeus* Ashm. and *Baeus* Halid.

Ceratobaeus, valid also today, is described for the first time by ASHMEAD. This genus clearly differentiates itself from the other genera included in this tribe because of the presence at the level of the first metasomal segment of a horn and due to the scutellum, which is clearly visible. In this genus can be met both apterous and nonapterous forms. The type species is *Ceratobaeus cornutus*.

Teleasini is another tribe created by ASHMEAD and valid until today. He specifies that this is a large tribe, composed by few genera, but many species. The typefiers of this tribe distinguish themselves by the following characters: the antennae inserted together on a clypeal prominence; the venation of the anterior wing with the marginal always well developed, the postmarginal very weak developed, the stigmal vein always small. The metasoma always shows a distinctive keel on the edges, and the metasomal segment 3 is always the best developed. This tribe used to contain the following genera: *Pentacantha* Ashm., *Trissacantha* Ashm., *Xenomerus* Walk., *Prosacantha* Nees., *Teleas* Latr. and *Gryon* Halid. Out of the two genera given by ASHMEAD, today there has remained valid only *Trissacantha*, as *Pentacantha* was synonymized with *Trimorus* by MASNER (1986).

The definitive characters for *Trissacantha* Ashm. are: 2 ditches on the mesonotum and 3 thorn-provided metascutellum. This genus is very close to *Xenomerus* Walk. In these species, the metascutellum is provided with one thorn. The type species is *Trissacantha americana*.

The Scelionini tribe, undertaken from THOMSON (1860), distinguishes, in turn, from the Teleasini tribe by the fact that the metasoma always shows a keel on the edges. Generally, the metasoma is oblong, acuminate or fusiform terminated, seldom oval. The third segment is oblong, its length almost equal to the length of the segment 2. In its structure there were included the following genera: *Caloteleia* Westw., *Baryconus* Forst., *Macroteleia* Westw., *Calliscelio* Ashm., *Chromoteleia* Ashm., *Opisthacantha*

Ashm., *Lapitha* Ashm., *Cacus* Riley, *Anteris* Forst., *Apegus* Forst., *Haploteleia* Ashm., *Macroteleia* Westw., *Cremastobaeus* Ashm., *Hadronotus* Forst., *Baeoneura* Forst., *Idris* Forst., *Acanthoscelio* Ashm., *Sparasion* Jurine, *Scelio* Latr., *Sceliomorpha* Ashm.

From the genera described by ASHMEAD for the first time in this tribe, the genera *Calliscelio*, *Chromoteleia*, *Opisthacantha*, *Cremastobaeus*, *Acanthoscelio* and *Sceliomorpha* remained valid. *Lapitha* was synonymized with *Opisthacantha* (MASNER, 1976), and *Haploteleia* Ashm. is a synonym of *Baryconus* Forst., with the type species *Baryconus floridanus* (ASHMEAD 1893).

Calliscelio Ashm. is very close to *Macroteleia* Westw., from which it is differentiated by the number of teeth from the mandible (3 in *Macroteleia* and 2 in *Calliscelio*). The type species for this genus is *Calliscelio laticinctus* Ashm. proximal to *Macroteleia* is also *Haploteleia*, but the later presents the metascutellum provided with 2 elevated teeth. The type species: *Haploteleia floridana* Ashm.

Chromoteleia Ashm. is easy to be remarked from the other genera because of the presence at the metanotum base of a large semicircular space, and because of the punctilious marginal. The type species is *Chromoteleia semicyanea* Ashm.

Opisthacantha is differentiated from the other genera due to the spiny metascutellum and to the fact that metasomal segment 1 and 2 have almost the same length. The type species: *Opisthacantha mellipes* Ashm.

Chremastobaeus remarks itself by the shape of metasomal segments, which undergoes a strong constriction in the suture zone. The type species: *Chremastobaeus bicolor* Ashm.

Acanthoscelio and *Sceliomorpha* are very much alike the *Scelio* Latr. and *Sparasion* Latr. The type species are: *Acanthoscelio americanus* Ashm. and *Sceliomorpha longicornis* Ashm.

The Platygasterinae subfamily is characterized by ASHMEAD as follows (p. 247):

"Head transverse rarely quadrate. Ocelli 3, triangularly arranged. Mandibles bifid at tips. Maxillary palpi 2-jointed; labial palpi 1-jointed. Antennae elbowed, clavate, most frequently 10-jointed in both sexes, rarely 8- or 9-jointed, inserted at the base of the clypeus. Pronotum never very large, scarcely visible from above, mesonotum most frequently transverse, with or without furrows; scutellum variously shaped, often with an awl-shaped tip or spined, flat, semicircular or pillow-shaped; metathorax short, with a median sulcus. Front wings most frequently entirely veinless, or with a submarginal vein terminating in a stigma before attaining the costa, the basal nervure rarely present; hind wings lanceolate, veinless. Abdomen petiolate or subpetiolate, ovate, oblong-oval or conic-ovate, depressed, very rarely greatly elongate, usually composed of 6 visible segments and always carinated at the sides, the second segment the longest. Legs long, the femora and tibiae clavate, the tibial spurs 1,1,1, the tarsi, except in a single genus, 1-phetrachus, 5-jointed, the claws simple."

This subfamily is very similar to the Scelioninae, from which it delimitates itself through the structure of antennae, maxillary and labial palpi, and through the shape of the mandibles. Another character that clearly delimitates the two subfamilies is the venation of the anterior wing.

ASHMEAD divides the Platygasterinae in two tribes: 1) Inostemmini and 2) Platygasterini. This division in tribes is based on the venation of the anterior wing.

In the first tribe, the following genera are grouped: *Iphetrachelus* Halid., *Allotropa* Forst., *Metaclisis* Forst., *Monocrita* Forst., *Isostasius* Forst., *Inostemma* Halid. and *Acerota* Forst., genera known until ASHMEAD.

In Platygasterini tribe, ASHMEAD includes the genera: *Piestopleura* Forst., *Xestonotus* Forst., *Amblyaspis* Forst., *Leptacis* Forst., *Isorhombus* Forst., *Polymecus* Forst., *Sactogaster* Forst., *Synopeas* Forst., *Coelopelta* Ashm., *Anopedias* Forst., *Amitus* Halid., *Trichacis* Forst., *Hypocampsis* Forst., *Polygnotus* Forst., *Eritrissomerus* Ashm., *Platygaster* Latr. and *Isocybus* Forst.

Coelopelta Ashm. was synonymized with *Platygaster* Latr. by FOUTS, and the *Eritrissomerus* remained valid. It is a genus very proximal to *Platygaster*, from which it is distinguished by the presence of a sharp keel, located between the antennae. The type species: *Eritrissomerus cecidomyiae*.

ASHMEAD's monograph comprises the descriptions of 158 Scelionidae species and 117 Platygasteridae species.

MOCSARY (1897), in *Fauna Regni Hungariae*, mentioned the Proctotrupidae family as represented in Hungary by the following genera: *Gonatopus* Ljungh., *Proctotrupes* Latr., *Prosacantha* Nees, *Inostemma* Halid., *Aneurhynchus* Westw., *Paramesia* Westw., *Galesus* Curt., *Eulomius* H.S., *Helorus* Latr. One can observe that from the actual Platygasteridae is mentioned *Inostemma*, with *I. Iycon* (species valid also today), and from the Scelionidae is mentioned *Prosacantha*, with *P. varicornis* Thoms (presently, *Trimorus varicornis*).

Between 1892-1902 appears the study *Catalogus Hymenopterorum hucusque descriptorum systematicus et synonymicus*, conceived by DALLA TORRE; Proctotrupidae are included in volume V, issued in 1898. Proctotrupidae exhibits itself as constituted of 12 subfamilies: Myarinae, Diapriinae, Belytinae, Proctotrupinae, Helorinae, Platygasterinae, Scelioninae, Ceraphrontinae, Emboleminae, Bethylinae, Pristocerinae.

The Platygasterinae subfamily is represented by 26 genera: *Isocybus* Forst., *Platygaster* Latr., *Homaloderus* Halid., *Polygnotus* Forst., *Eritrissomerus* Ashm., *Hypocampsis* Forst., *Trichacis* Forst., *Amitus* Halid., *Fidiobia* Ashm., *Anopedias* Forst., *Coelopelta* Ashm., *Synopeas* Forst., *Sactogaster* Forst., *Ectadius* Forst., *Isorhombus* Forst., *Inostemma* Halid., *Isostasius* Forst., *Monocrita* Forst., *Metaclisis* Forst., *Allotropia* Forst., *Iphitrachelus* Halid. From the quoted genera, the genera *Homaloderus* Halid., *Eritrissomerus* Ashm., *Fidiobia* Ashm., *Coelopelta* Ashm., *Isorhombus* Forst., *Xestonotus* Forst., and *Acerota* Forst. had typefiers only on the American continent. In these 26 genera, 375 species are quoted, from which 201 from Europe. The most abundant in species was *Platygaster*, which comprised 135 species, of which 112 from Europe.

The Scelioninae species was represented by the following 40 genera: *Romilius* Walk., *Scelio* Latr., *Sceliomorpha* Ashm., *Sparasion* Latr., *Acanthoscelio* Ashm., *Idris* Forst., *Baeoneura* Forst., *Hadronotus* Forst., *Crematobaeus* Ashm., *Haploteleia* Ashm., *Apegus* Forst., *Anteris* Forst., *Cacus* Ashm., *Lapitha* Ashm., *Opisthacantha* Ashm., *Chromoteleia* Ashm., *Calliscelio* Ashm., *Baryconus* Forst., *Macroteleia* Westw., *Caloteleia* Westw., *Gryon* Halid., *Hoplogryon* Ashm., *Teleas* Latr., *Prosacantha* Nees, *Xenomereus* Walk., *Trissacantha* Ashm., *Pentacantha* Ashm., *Baeus* Halid., *Ceratobaeus* Ashm., *Acolus* Forst., *Acoloides* Howard, *Thoron* Walk., *Aradophagus* Ashm., *Dissolcus* Ashm., *Trissolcus* Ashm., *Aleria* Marshall, *Hemisius* Westw., *Telenomus* Halid., *Phanurus* Thoms., and *Trimorus* Forst. These 40 genera totalized 324 species from which 168 were notified in Europe. The most abundant in species from this subfamily is *Telenomus*, with 141 species, of which 66 in Europe.

The genera *Romilius* Walk., *Sceliomorpha* Ashm., *Acanthoscelio* Ashm., *Baeoneura* Forst., *Crematobaeus* Ashm., *Chromoteleia* Ashm., *Calliscelio* Ashm., *Baryconus* Forst., *Macroteleia* Westw., *Caloteleia* Westw., *Hoplogryon* Ashm., *Trissacantha* Ashm., *Pentacantha* Ashm., *Ceratobaeus* Ashm., *Acoloides* Howard, *Aradophagus* Ashm., *Dissolcus* Ashm., and *Trissolcus* Ashm. possessed no notified typefiers in the European fauna at that moment. It can be easily observed from the above-mentioned that a little more than half of the number of known Scelionidae genera were notified from North America by ASHMEAD.

DALLA TORRE's catalogue with its status of the described taxa near the end of the XIX century forms the natural break just before some energetic entomologists caused an explosion in the described diversity of the superfamily.

2. EARLY XXth CENTURY: THE KIEFFERIAN ERA

The studies executed upon Scelionidae and Platygasteridae at the beginning of the XXth century are strongly marked by the titanic work performed by the reputed hymenopterologist JEAN-JACQUES KIEFFER (1857-1925).

In the first years of XX century (1904), he described a new genus of Platygasteridae, named by him *Proplatygaster*, the type species being *Proplatygaster rufipes* Kieffer. This genus is valid also today, characterized by the fore wing venation. A subcostal vein, a median one, a basal one, radial, one, a cubital one, and a discoid one compose this venation. It is a Neotropical genus, and the type species is the only known species from this genus.

In 1908, KIEFFER published a first resurvey of the Scelioninae subfamily. He shows the way in which ASHMEAD divides this subfamily into four tribes, but in the footnote, he indicates the fact that there is a series of authors, who divide Scelioninae into only two groups, considering the propleura shape as a criterion.

At the first group, the propleura are not crossed by any ridge and the suture, which separates the propleura from the mesopleura, is not observable. The propleura together with the mesopleura form a plate with scale-aspect that covers the posterior side of anterior coxae, for example, in *Scelio* or *Sparasion*.

The second group is characterised by the presence of two arched ridges, which extend themselves on this plate until the reaching of the anterior coxa, delimitating between them an ellipsoidal space. The posterior ditch separates the propleura from the mesopleura, as in, for example, *Chromoteleia* Ashm., *Habroteleia* Kieff., *Oxyteleia* Kieff., and in *Macroteleia* Westw. KIEFFER express no personal opinion regarding the two division systems of this subfamily. Thenceforth, he assort the subfamily directly into genera. The following genera were part of this subfamily: *Platyscelio* Kieff., *Odontoscelio* Kieff., *Dichoteleas* Kieff., *Habroteleia* Kieff., *Romilius* Walk., *Hoploleleia* Ashm., *Triteleia* Kieff., *Chromoteleia* Ashm., *Oxyscelio* Kieff., *Baeoneura* Forst., *Sparasion* Latr., *Acanthoscelio* Ashm., *Idris* Forst., *Scelio* Latr., *Sceliomorpha* Ashm., *Discelio* Kieff., *Lepidoscelio* Kieff., *Roena* Cam., *Cremastobaeus* Ashm.,

Prolapitha Kieff., *Paratrimorus* Kieff., *Dichacantha* Kieff., *Oxyteleia* Kieff., *Baryconus* Forst., *Lapitha* Ashm., *Opistacantha* Ashm., *Anteris* Forst., *Hadronotus* Forst., *Plastogryon* Kieff., *Leptoteleia* Kieff., *Cacellus* Ashm., *Embidobia* Ashm., *Rhacoteleia* Cam., *Apegus* Forst., *Prosapegus* Kieff., *Prosanteris* Kieff., *Ceratoteleia* Kieff., *Calliscelio* Ashm., and *Macroteleia* Westw.

Platyscelio Kieff. 1905 is a genus which remained valid and can be easily distinguished from the other genera due to the body, strongly oblate (especially the head and the thorax) and due to the very flatten shape that the scapus possess (with a length almost equal to the width).

Odontoscelio Kieff. and *Dichoteleas* Kieff., both valid, are very similar, being differentiated due to the length of the marginal, which is well developed in *Odontoscelio* and punctilious at *Dichoteleas*.

Habroteleia Kieff. can be distinguished by the fact that the postmarginal vein is missing, and *Triteleia* Kieff., by the metanotum provided with 1-2 thorns and by the very elongated metasoma, with the segments much smaller rather than wider.

Oxyscelio Kieff. approximates very much *Chromoteleia* Ashm., the distinction between the two of them being given by the postmarginal, which in the first genus is missing, and in the second one is a little longer than the stigmal vein. In addition, *Oxyscelio* presents a median keel between the parapsidale ditches.

The genera *Discelio* Kieff., *Dichacantha* Kieff. and *Lepidoscelio* Kieff. were synonymized by MASNER (1976). The typefiers of *Lepidoscelio* can be distinguished by the fact that metanotum shows two teeth, with scale-appearance, divided into two rounded lobes. Close to the *Lepidoscelio* is *Oxyteleia* Kieff., to be distinguished by the oblong fusiform metasoma, 2-3-fold longer than the rest of the body, and the stigmal vein is much longer than the marginal, but slightly shorter than the postmarginal.

Prolapitha Kieff. was synonymized with *Opistacantha* Ashm. (MASNER, 1976); *Paratrimorus* Kieff. with *Anteris* Forst. (KOZLOV, 1971); *Plastogryon* Kieff. with *Gryon* Halid. (MASNER, 1976); *Prosapegus* Kieff. with *Macroteleia* Westw. (MASNER, 1976), and the genera *Prosanteris* Kieff. and *Ceratoteleia* Kieff. with *Calliscelio* Ashm. (MASNER, 1976).

Leptoteleia Kieff. distinguishes itself by the fact that the marginal nervure, which is much longer than the stigmal vein; the pubescent eyes, the metasoma twice as long as the rest of the body, and in female, the first metasomal segment, shows a small horn.

Between 1909 and 1910 a series of works signed KIEFFER were published, in which some new genera and species are presented. *Rielia* is for the first time described in *Description de nouveaux Hymenopteres*. The typefiers of this genus widely separate themselves from the other Scelionidae due to a very obvious character: the venation of the anterior wing, represented by a vestigial subcostal. This venation alienates this genus from the other Scelionidae genera and draws it near to the platygastriidae. The denomination of the genus comes from dr. Riel, the one who collected the *Mantis* oothecae parasitized by this scelionid. Today, this genus is synonymized with *Mantibaria* Kirby (DODD, 1920).

In another study, also published in 1910b, other seven new genera are described: *Paranteris* Kieff., *Lamproteleia* Kieff., *Neuroteleia* Kieff., *Enneascelio* Kieff., *Oreiscelio* Kieff., *Odontacolus* Kieff., and *Parabaeus* Kieff. The first four genera are no longer valid today, being synonymized with other genera. Thus, *Paranteris* Kieff. is synonym with *Paridris* Kieff. (MASNER, 1965); *Lamproteleia* Kieff. with *Caloteleia* Westw. (MASNER, 1965); *Neuroteleia* Kieff. with *Oethecoctonus* Ashm. (MASNER, 1965); and *Enneascelio* Kieff. with *Scelio* Latr. (NIXON, 1958).

Oreiscelio Kieff. is proximal to *Scelio* Latr., from which differs due to the scutellum structure, which in this case is provided with 2 teeth.

Odontacolus Kieff. is very similar to *Ceratobaeus* Ashm., from which differs by the metathorax provided with 2 teeth and by the presence of the postmarginal.

Parabaeus Kieff. is similar to *Baeus*, from which differs by the fact that clava is composed of only four articuli, and by the shape of the pronotum and of the metasoma.

In the same year, 1910c, KIEFFER publishes *Addenda et Corrigenda*, as a response to BRUES's work entitled *Scelionidae Family*, published in 1908. BRUES's paper, KIEFFER affirms, is realized after the monograph of ASHMEAD, *Monograph of the North American Proctotrupidae* (1893), and in this, to a series of genera created by FORSTER, HALIDAY and NEES a meaning different from the original one is conferred.

In order to establish the original meaning of some genera created by FORSTER, KIEFFER reviews the holotypes provided by prof. MAYR. The genera in discussion were: *Idris* Forst., *Prolapitha* Kieff., *Paridris* Kieff., *Anteris* Forst., *Leptoteleia* Kieff., *Cacellus* Ashm., *Prosapergus* Kieff., *Prosanteris* Kieff., *Ceratoteleia* Kieff., *Macroteleia* Westw., *Psilacolus* Kieff., and *Protrimorus* Kieff.

From this paper, one can observe that the Scelionidae begins to be treated as a distinctive family, and the tribes given by ASHMEAD are raised at the rank of subfamilies.

Beside the tribes given by ASHMEAD, BRUES creates a new subfamily called *Sceliotrachelinae*, a name that comes from *Sceliotrachelus* Brues.

KIEFFER excludes this subfamily from the Scelionidae, mentioning that the species in *Sceliotrachelus* have no relation with the Scelionidae family. This paper may be considered an important zoogeographical work, because in each genus references are made about the geographical dispersion of the component species. Besides these references, all synonymies are presented in each genus.

Among the subfamilies presented in this paper, the subfamilies: Telenominae, Teleasinae, and Scelioninae have remained valid. The Baeinae subfamily in the contemporaneous systematics is considered as a tribe from the Scelioninae family.

In 1911-1912 KIEFFER contributed at the augmentation of the number of Scelionidae and Platygasteridae species, by publishing the articles: *Descriptions de nouveaux Scelionides d'Angleterre* and *Drei neue Platygasteriden*.

KIEFFER also describes the following genera:

1913a: *Doddiella* — valid genus, easy to remark from the other Scelionidae because of the lack of venation from the anterior wing, this fact drawing it nearer to *Mantibaria*, from which it can be distinguished by the fusiform and long-petiololed metasoma.

1913b: *Camptoteleia* — synonymized by DODD (1931) with the *Oxyscelio* Kieff.; *Chrestoteleia* — synonymized with *Habroteleia* Kieff. by BALTAZAR (1961, in MASNER 1976); *Xenoteleia* — synonymized with *Oxyscelio* Kieff. by DODD (1931), *Neurocacus* — synonymized with *Probaryconus* Kieff. (KIEFFER 1926), *Cerastopsilus* — synonymized with *Inostemma* Halid. by YAMAGISHI (1982).

1913c: *Aholcus* — is synonymized with *Telenomus* Halid. by NIXON (1935), *Aneuroscelio* — valid genus, distinctive due to the reduced venation of the anterior wing, represented by a costal and a subcostal, both short; *Antroscelio* — valid genus, characterized by tridental mandibles and strongly convex thorax, higher rather than longer; *Dicroscello* — valid genus, identifiable due to the venation, formed from an oblong subcostal, a punctilious marginal, an oblong oblique stigma, and an absent postmarginal. Propleura shows two ridges; *Apteroscelio* — valid genus, similar to *Antroscelio* Kieff., but it includes apterous forms.

1913d: *Prosparasion* — synonymized with *Sparasion* Latr. (MASNER 1976), was considered a distinctive genus because the component species lacks the transversal keel from the forehead, keel that is characteristic to *Sparasion*.

1916a: *Heptascelio* — valid genus, characterized by the scutellum provided with two teeth, thorn-ended metanotum, and the posterior-lateral angles of the propodeum are very prominent and sharp. *Phoenoteleia* — valid genus, characterized by the presence of a horn in female, that starts from the tergite 1 and sometimes can reach the anterior quarter of the mesoscutum; *Psilanteris* — valid genus, very close to *Anteris*, from which is distinguished because of the presence of a frontal accentuated depression; *Phaedroteleia* — genus at which the examination of the type species was impossible for the contemporaneous specialists. MASNER (1976) assumes that this genus could be synonym with *Habroteleia* Kieff.; *Styloteleia* — valid genus, similar to *Opisthacantha*, but distinct by the scutellum shape and because of the fact that in clava's embodiment are included 5 articuli; *Plagioscelio* — synonymized with *Phoenoteleia* Kieff. (MASNER, 1976).

1916b: *Brachinostemma* — synonymized with *Inostemma* Halid. by MASNER (1964); *Disynopeas* — synonymized with *Metanopedias* Brues by HUGGERT (1980).

1921: *Fahringeria* — synonymized with *Fidiobia* Ashm. by MASNER & HUGGERT (1989).

The year 1926 constituted the moment of the apparition of the most important paper from KIEFFER's career, and the most exhaustive contemporaneous work. We are talking about the worldwide monograph of the Scelionidae, in which 1398 species of Platygasteridae and Scelionidae from the global fauna are mentioned. This large number of species is remarkable, if one takes into consideration the fact that in the DALLA TORRE catalogue (1898), in the global fauna 699 species of Platygasteridae and Scelionidae were mentioned. One can observe, as a result of a simple subtraction, that in less than 28 years the number of known species has doubled. This fact indicates the highly intense activity of those times in the systematics field.

In KIEFFER's monograph, the Scelionidae family appears fragmented in five subfamilies: Teleasinae (230 sp.), Baeinae (99 sp.), Scelioninae (269 sp.), Telenominae (281 sp.) and Platygasteridae (519 sp.). In the genera with worldwide dispersion (*Telenomus*, *Gryon*, *Trissolcus*, *Amblyaspis*, etc.) determination keys are created for every biogeographical region apart.

The Scelionidae and Platygastriidae from the Australian fauna are object of concern, at the beginning of XX century, for A.P. DODD, who publishes numerous new genera and species from this region. Among these genera, the following are published by DODD from Australia's fauna :

1913a: *Platygastoides* — valid genus until today. The typefiers of this genus remark themselves because of the antenna, at which the scape is very wide, with the width almost equal to the length. The width of the scape represents, in this genus, half of the head width. The type species: *Platygastoides mirabilis* Dodd.

1913b: *Platyteleia* — today synonymized with *Gryon* Halid (GALLOWAY & AUSTIN, 1984); *Baeoneurella* synonymized also by DODD two years later, with *Eumicrosoma* Gahan; *Ceratobaeoides* synonymized by AUSTIN (1981, in KOZLOV & KONONOVA, 2001) with *Odontacolus* Kieff., and *Aphanomerella*, which is valid. This genus is very close to *Aphanomerus* Perkins, from which delimitates itself due to the antenna clava, formed from 4 articuli, compact, and due to the fact that antennae are formed from the same number of articuli.

1913c: *Neoteleia* and *Dissolcoides* — synonymized with *Telenomus* Halid. by JOHNSON (1988); *Hadronotoides* — synonymized with *Gryon* Halid. (CALECA, 1990), *Neuroscelio* — valid genus, the fore wings are characteristic, being short and broad, the anterior wing venation is composed of a submarginal vein which reaches the wing edge approximately at half of the wing length, the marginal is short, dilated, and the postmarginal is little developed. *Sceliacantha* — valid genus, the venation of the fore wing is characteristic, the marginal vein represents half of the stigma length, and the postmarginal is slightly longer than the stigma. *Scellicanthella* — resembles *Sceliacantha*, but maxillary palpi are embodied from 3 segments, while in *Sceliacantha* are composed of 2 segments, the wings are rudimentary, and do not reach the middle of the metasoma; the postscutellum shows one thorn.

1914a: *Acolomorpha* — valid genus, resembles *Baeus* Halid., because of the antenna shape in female, but distinct, because the mandibles are much wider and are provided with 3 teeth.

1914b: *Austroscelio* — synonymized with *Gryon* Halid. (GALLOWAY&AUSTIN, 1984); *Encyrtoscelio* — valid genus, characterized by the absence of the ocelli, by the antennae which are inserted in a depression laid above the mouth and by the very long and thin mandibles, with three small teeth; *Phanuromyia* — valid genus, very close to

the *Telenomus*, is distinct among the other genera of *Scelionidae* due to the fact that the ovipositor is kept at the outside, having almost the same length as the metasoma.

1914c: *Mirobaeus* — valid genus, characterized by tridental mandibles, the middle tooth feeble developed, the pronotum easily visible viewed from above, the scutellum three fold long than wide, the antennae composed of 11 articuli, the clava is distinct, formed from 4 articuli; *Mirobaeoides* — valid genus, close to *Mirobaeus* Dodd, from which it is distinguished through the lack of scutellum and through the shape of the first metasomal segment, which is wider than the thorax; *Gryonella* — valid genus, very close to the *Teleas* Latr., by which it delimitates itself due to the presence, on the postscutellum of two teeth.

1914d: *Mirambyaspis* — synonymized with *Leptacis* Forst. by HUGGERT (1976). was considered a distinct genus due to the antenna, which is formed from 13 articuli, a unique case between the Platygasteridae, where the antennae, as we have already mentioned, regularly are embodied by 10 articuli.

1920: *Merriwa* — valid genus, characterized by: the scutellum shape, which, laterally, prolongates in two teeth, the fore wings are wide and long, showing a subcostal that reaches the anterior edge of the wing at the middle of the wing, the marginal is 1-3 fold longer than the stigma and the presence of a false radial, that reaches the anterior edge of the wing, delimitating a false radial cell; *Parascelio* — valid genus, close to *Macroteleia* Westw., from which it delimitates itself through the head and metasoma shape.

1926: *Duarina* — valid genus, characterised through the scutum, that has the anterior edge truncated, the propodeum with large spiracles and ocelli placed in a group, close to each other.

1931: *Bracalba* — valid genus, with a habitus resembling the habitus of *Oxyscelio* Kieff., from which delimitates itself through the long postmarginal, the pubescent eyes and the antenna clava strongly differentiated from the rest of the antenna.

P. A. GIRAULT (1916) publishes from the fauna of India the genus *Phanuropsis*, valid also today, very close to the *Telenomus*, but the mandibles of the typefiers of this genus are tridentate, the scutellum presents a median keel, and the metasoma edges are sharp. The antenna in male presents the scape dilated toward the apex.

In his *Revision of the North American wasps of the subfamily Platygasterinae*, FOUTS (1924) treated the genera *Amblyaspis* Forster, *Fidiobia* Ashmead, *Amitus*

Haldeman, *Isorhombus* Forster, *Isocybus* Forster, *Trichacis* Forster, *Eritrissomerus* Ashmead, *Platygaster* Latreille, *Piestopleura* Forster, *Sactogaster* Forster, and *Leptacis* Forster. He separated the genera *Platygaster* and *Leptacis* by the shape of the antenna (more club-shaped in *Leptacis*) and of metasoma (without basal foveae in *Leptacis*). However, his concept of *Leptacis* includes also *Synopeas* Forster (excluding *Sactogaster*). FOUTS writes (p. 116):

"*Synopeas* is really inseparable from *Leptacis* although many species can be placed definitely in one genus or the other by the use of Foerster's generic key and the descriptions following it. I have numerous specimens in my own collection showing transition in the structure of the scutellum. Typical *Synopeas* Foerster has the scutellum broad and depressed basally, with a short thorn at tip. Considerable difference is found in typical forms of *Leptacis* Foerster where the scutellum is elongate and produced into a long acute spine posteriorly."

For FOUTS, variation in the scutellar structure is generally unimportant for generic separation in the entire subfamily (e.g. he also includes *Anopedias* FORSTER and *Ceratacis* THOMSON in *Leptacis*, these two genera being today distinguished by their scutellar structure). KIEFFER criticized FOUTS for not paying attention to the shape of the maxillary palpi in classification. Both were wrong according to the modern view which regards scutellar structure as of primary importance. Though FOUTS' generic classification is rejected today his species descriptions and redescriptions were very accurate (in contrast to ASHMEAD's), though mostly unillustrated.

JACKSON (1969) showed the validity of many of FORSTER's original genera by pointing to several clear differences separating genera in the *Synopeas-Leptacis* complex. Apart from the structure of metasoma, the structure of a depression at the anterior margin of the pronotum varies from genus to genus, being very distinct in *Synopeas* and absent in *Leptacis*, with intermediate forms in other genera.

3. MODERN CONCEPTS AND REVISIONS: MASNER AND KOZLOV

LUBOMIR MASNER (1956) published at the age of 22 his *First Preliminary Report on the Occurrence of Genera of the Group Proctotrupoidea (Hym.) in CSR (first part-family Scelionidae)*, in which he mentioned that the Proctotrupoidea represents an extremely heterogeneous group, composed of parasitic hymenoptera, placed, from the systematic point of view, between Terebrantia and Aculeata. Although many authors

consider this group as a single superfamily, MASNER views this group as a heterogeneous group, with a polyphyletic origin, so it cannot constitute a single family or a single superfamily. Starting from this premise, MASNER proposes this group to be divided into three distinct superfamilies: Proctotrupoidea, Scelionoidea and Ceraphronoidea. From the old group Proctotrupoidea, the following families are excluded: Embolemidae, Bethylidae, Dryinidae, and Mymaridae. The first three families are placed between aculeate and Mymaridae, between chalcidoidea.

Despite these proposals, in the same paper, MASNER treats the Scelionidae and Platygasteridae as being part of the same family: Scelionidae. This family is presented as composed of 2 subfamilies: subfamily Scelioninae and subfamily Platygasterinae, the subfamily Scelioninae being divided into 3 tribes (Telenomini, Teleasini and Scelionini), and the Platygasterinae, only in 2 (Inostemmini and Platygasterini).

MASNER's proposals didn't have the anticipated echo, and the Platygasteridae and Scelionidae remained grouped under the Proctotrupoidea.

KOZLOV (1970) assorts the Scelionidae in 4 subfamilies: Scelioninae, Teleasinae, Baeinae and Telenominae.

The Scelioninae is considered as composed of the following tribes:

Caloteleini Kozlov — composed of the following genera: *Macroteleia* Westw., *Caloteleia* Westw., *Probaryconus* Kieff., *Anteromorpha* Dodd., *Marshalliella* Kieff., *Leptoteleia* Kieff., *Calliscelio* Ashm., *Oethecoctonus* Ashm., *Chromoteleia* Kieff. and *Oxyteleia* Kieff.;

Baryconini Kozlov — composed of the following genera: *Baryconus* Forst., *Apegus* Forst., and *Parapegus* Kieff.;

Platyscelionini Kozlov — monotypic tribe composed of a single genus, *Platyscelio* Kieff.;

Mantibariini Kozlov — monotypic tribe composed of a single genus, *Mantibaria* Kirby;

Psilanteridini Kozlov — composed of the genera: *Psilanteris* Kieff., *Duta* Nixon, *Paratrimorus* Kieff., *Lapitha* Ashm.;

Embidobiini Kozlov — monotypic tribe composed of *Embidobia* Ashm.;

Pseudanteridini Kozlov — monotypic tribe composed of *Pseudanteris* Fouts;

Gryonini Szabo — composed of the following genera: *Gryon* Halid., *Plesiobaeus* Jieff., *Mirotelenomus* Dodd, *Hungarogryon* Szabo, *Eremioscelio* Priesner, *Sundholmia* Szabo and *Encyrto-scelio* Dodd;

Scelionini Forster — *Scelio* Latr., *Sparasion* Latr., *Amblyscelio* Kieff., *Sceliomorpha* Ashm. and *Discelio* Kieff.

He assort the Teleasinae family in two tribes:

Teleasini Ashm. — composed of the following genera: *Trimorus* Forst., *Teleas* Latr., *Proteleas* Kozlov and *Ceratoteleas* Kozlov;

Xenomerini Kozlov — monotypic tribe composed of a single genus, *Xenomerus* Walk.;

The Telenominae subfamily: composed by 3 tribes:

Aradophagini Kozlov — monotypic tribe composed of a single genus, *Aradophagus* Ashm.;

Tiphodytini Kozlov — monotypic tribe composed of a single genus, *Tiphodytes* Bradley;

Telenomini Thomson — tribe composed of the following genera: *Telenomus* Halid., *Aphorophlebus* Kozlov, *Phlebiaporus* Kozlov, *Eumicrosoma* Gahan, *Platy-telenomus* Dodd, *Phanuropsis* Girault, *Protelenomus* Kieffer, *Narupama* Nixon and *Paratelenomus* Dodd.

In Kozlov's opinion, the Baeinae is divided into 3 tribes:

Thoronini Kozlov — monotypic tribe composed of a single genus, *Thoron* Halid.

Idrini Kozlov — tribe composed of the following genera: *Idris* Forst., *Ceratobaeus* Ashm., *Cyphacolus* Priesner, *Odontacolus* Kieff., *Dissacolus* Kieff., *Psilacolus* Kieff., *Pseudobaeus* Perkins.

Baeini Ashm. — *Baeus* Ashm., *Parabeus* Kieff., *Aneurobaeus* Masner, *Psilobaeus* Kieff., *Angolobaeus* Kozlov.

The Platygastriidae is divided into 3 subfamilies: *Inostemmatinae* Ashm., *Sceliotrachelinae* Brues and *Platygastriinae* Forst.

The Inostemmatinae is divided into 7 tribes:

Metacliseini Kozlov — monotypic tribe composed of *Metaclisis* Forst.;

Inostemmatini Ashm. — composed of the following genera: *Inocerota* Szelenyi, *Inostemma* Halid., *Acerotella* Masner, *Isostasius* Forst. and *Platyllostropa* Szelenyi;

Platystasiini Kozlov — composed of a single genus, *Platystasius* Nixon;

Aphanomerini Kozlov — a reduced tribe, composed only of 2 genera: *Aphanomerus* Perkins and *Aphanomerella* Dodd.;

Pseudophanomerini Kozlov — tribe formed from the following genera: *Pseudophanomerus* Szelenyi and *Tetrabaeus* Kieff.

Allotropini Kozlov — monotypic tribe composed of *Allotropia* Forst.;

Iphitrachelini Masner — monotypic tribe composed of *Iphitrachelus* Walk.;

Fidiobiini Kozlov — monotypic tribe composed of *Fidiobia* Ashm.;

Sceliotrachelini Brues — composed of the genera: *Amitus* Haldeman, *Isolia* Forst., *Sceliotrachelus* Brues, *Platygastoides* Dodd.

The Platygastriinae subfamily is divided into three tribes:

Platygastriini Forst. — composed of the following genera: *Metanopedias* Brues, *Trichacis* Forst., *Isocybus* Forst., *Triplatygaster* Kieff., *Platygaster* Latr., *Anirama* Kozlov, *Urocyclops* Maneval, *Prosactogaster* Kieff., *Euxestonotus* Fouts and *Eritrissomerus* Ashm.;

Synopeadini Kozlov — composed of the following genera: *Synopeas* Forst., *Leptacis* Forst., *Amblyaspis* Forst. and *Pyrgaspis* Kozlov;

Coelopeltini Kozlov — monotypic tribe composed of *Coelopelta* Ashm.

In 1976, in *Revisionary Notes and Keys to World Genera of Scelionidae (Hymenoptera, Proctotrupoidea)*, MASNER elevates the Telenomini, Teleasini and Scelionini tribes at the rank of subfamilies. In this paper, the Scelionidae family is divided as one can see into only three subfamilies. The Baeinae subfamily, which appeared in the classification system elaborated by KOZLOV (1970), is missing here.

In MASNER's work, which is the first on the group to include more than just external characters, the Scelioninae subfamily is presented as being composed of the following tribes, undertaken from KOZLOV's classification system: Baryconini, Psilanteridini, Aradophagini, Mantibariini, Platyscelionini, Gryonini, Embidobiini, Thoronini, Idrini, Baeini, Scelionini, alongside of which he gives a series of new tribes: Nixonini Masner, Sparasionini Masner, Calliscelionini Masner, Cremastobaeini and Doddiellini Masner.

Nixonini — tribe composed of a single genus, *Nixonia* Masner;

Sparasionini — composed of the following genera: *Archaeoteleia* Masner, *Sceliomorpha* Ashm., *Sparasion* Latr.;

Calliscelionini — it superposes itself over the Caloteini KOZLOV (1970), from which takes over the following genera: *Macroteleia* Westw., *Probaryconus* Kieff., *Anteromorpha* Dodd, *Marshalliella* Kieff., *Calliscelio* Ashm., *Oethecoctonus* Ashm., and *Oxyteleia* Kieff., alongside which are grouped the following genera: *Habroteleia* Kieff., *Phaedroteleia* Kieff., *Triteleia* Kieff., *Romilius* Walk., *Alloteleia* Kieff., *Amblyscelio* Kieff., *Dichoteleas* Kieff., *Phoenoteleia* Kieff., *Monoteleia* Kieff., *Paridris* Kieff., *Holoteleia* Kieff. and *Palpoteleia* Kieff.

Caloteleia Westw., *Leptoteleia* Kieff. and *Chromoteleia* Kieff., which, in the classification system elaborated by KOZLOV, were part of the Caloteleini tribe, are not undertaken by MASNER in the Calliscelionini tribe, but are inserted in other tribes: *Caloteleia* and *Leptoteleia* in the Psilanteridini tribe, and *Chromoteleia* in Baryconini tribe. The position of Pseudanteridini tribe is not recognized, and the *Pseudanteris* genus is included by MASNER in the Thoronini tribe.

Cremastobaeini — monotypic tribe composed of *Chremastobaeus* Ashm.;

Doddiellini — monotypic tribe composed of *Doddiella* Kieff..

One can remark that in the classification system proposed by MASNER, the tribes Idrini, Thoronini and Baeini, which, at KOZLOV, embodied the Baeini subfamily, here are inserted in the Scelioninae subfamily.

In the system elaborated by MASNER, the Telasinae subfamily undergoes no transformation, being presented identical to the KOZLOV's system, embodied by 2 tribes: Telasini and Xenomerini.

In MASNER, Telenominae appears as composed of a single tribe: Telenomini. The Aradophagini, component of this subfamily in KOZLOV's case, is brought by MASNER in the Scelioninae. The position of Tiphodytini is reconsidered and is included in Thoronini.

MASNER's 1976 papers led to many advances, apparent from the number of new taxa described in the last quarter of a century: 1196 species and 32 genera, more than 36 % and 19 %, respectively, of the current total (as computed by JOHNSON).

In 1977, RICHARDS published *Hymenoptera, Introduction and Key to Families. Second Edition*, study in which the Proctotrupoidea group is divided as MASNER had suggested in 1956, into three superfamilies: Proctotrupoidea, Scelionoidea and Ceraphronoidea. Scelionoidea, differentiated from the other two superfamilies because of the metasoma shape and of the number of articuli from the embodiment of the

antenna. Within the Scelionoidea, RICHARDS distinguishes two families: Scelionidae and Platygastriidae, differentiated among themselves based on the fore wing venation and the antenna structure.

In 1978, FITTON, GRAHAM, BOUCEK, FERGUSSON, HUDLESTON, QUINLAN and RICHARDS published *A Check List of British Insects. Part 4: Hymenoptera*, a work in which 123 species of Scelionidae and 157 species of Platygastriidae are presented. The authors are taking over the systematics of the Scelionidae from MASNER's paper from 1976, namely they recognize none but the Scelioninae, Telenominae and Teleasinae, the Baeinae subfamily being degraded at the rank of tribe and included in Scelioninae. The systematics of Platygastriidae is assumed from KOZLOV (1970).

A catalogue of the Irish Platygastroidea was published by O'CONNOR, NASH, NOTTON and FERGUSSON in 2004 (Occasional Publication of the Irish Biogeographical Society 7), with reproductions of HALIDAY's original, excellent illustrations.

In 1979, CARL F.W. MUESEBECK published a catalogue entitled: *Hymenoptera in America North of Mexico*. In this paper, from the Proctotrupoidea group, Ceraphronidae and Megaspilidae are detached, and presented as components of Ceraphronoidea. The author presents 275 species from Scelionidae and 191 species from Platygastriidae. The systematics within the families is identical as in FITTON.

RASNITSYN (1980) includes Platygastriidae and Scelionidae families in a new superfamily: Diaprioidea, along with the families: Austroniidae, Diapriidae, Monomachidae, Serphitidae and Mymaridae. In 1988, RASNITSYN placed Platygastroidea as a sister-group to Chalcidoidea, an alternative hypothesis being that of GIBSON (Zoologica Scripta 28, 1999) placing Platygastroidea as a monophyletic group together with Pelecinidae, Proctotrupoidea and Vanhorniidae based on common possession of an annular pronotum and a mesopleural-mesotrochanteral muscle. AUSTIN & FIELD (1997, cf. below) summarize some important characters indicating the monophyly of Platygastroidea as well as the characters supporting the lower groupings.

In 1981, KOZLOV reiterates the problem of Scelionidae systematics. He accepts a series of modifications realized by MASNER within the Scelionidae, but disagrees with the disclaiming of the Baeinae.

Within the Scelioninae he creates other two tribes: Neoscelionini — monotypic tribe comprising only the *Neoscelio* Dodd, and Parascelionini — monotypic tribe composed of *Parascelio* Dodd. He agrees on the establishment of *Thoron* by MASNER in Scelioninae, but excludes Idrini and Baeini from this subfamily and composes with them the Baeinae.

In the embodiment of the Telenominae, are reinserted Aradophagini and Tiphodytini, excluded from this subfamily by MASNER and introduced in Scelioninae.

In the supergeneric classification of Platygastriidae, MASNER & HUGGERT's (1989) landmark study broke with the tradition of separating Platygastriinae and Inostemmatinae on the basis of presence or absence of the submarginal vein, which was shown to be a doubtful character, variable in clearly monophyletic groups. MASNER & HUGGERT showed that part of the old "subfamily" Inostemmatinae was a plesiomorphic part of Platygastriinae, the other part belonged in the subfamily Sceliotrachelinae, differentiated from Platygastriinae by the shape of the female antennal clava and by biology, sceliotrachelines being parasitoids of Coleoptera and Homoptera, platygastriines of Cecidomyiidae (Diptera).

MASNER & HUGGERT treated 41 genera, 20 new to science, and united them in "clusters" of genera in each subfamily as follows: Platygastriinae: *Proplatygaster*-cluster, *Isostasius*-cluster, *Inostemma*-cluster, *Allostemma*-cluster. Sceliotrachelinae: *Fidiobia*-cluster, *Aphanomerus*-cluster, *Isolia*-cluster, *Amitus*-cluster, *Allotropa*-cluster. To these comes the most speciose *Platygaster*- og *Synopeas*-clusters. These generic clusters were all further analysed and described in depth by AUSTIN & FIELD (1997, cf. below). They note, however, that a fundamental phylogenetic division may exist in the *Platygaster*-cluster, indicated by presence or absence of the latero-ventral apodemes supporting the muscles to the ovipositor.

In 1993, MASNER reiterates the systematics of Proctotrupoidea superfamily, which he divides into 3 superfamilies: Proctotrupoidea, Platygastroidea and Ceraphronoidea. Today, these superfamilies are accepted and adopted by the majority of the systematicians.

The most important attribute of the Platygastroidea superfamily, as MASNER claims, is the unique structure of the metasoma and the particular operating mechanism of the ovipositor. This one is relatively slightly sclerotic and, when not used, is kept

totally retracted inside the metasoma. Here it is kept into a tube consisting of soft tissue. This tube appears to be a homolog of the intersegmentary and may be folded.

Another major attribute of the typefiers of Platygastridae is the presence of some base-conic sensillae on the clavomera of the female antenna.

Timely, systematic and faunistic studies are performed on the Platygastridae superfamily.

In Ukraine, by S.V. KONONOVA, who in 1992 published a monograph with the Scelionidae from Ukraine's fauna. In addition, she publishes, in collaboration with PETROV (1997), a resurvey of the Palaearctic species pertaining of the *Ceratobaeus*, and in collaboration with FURSOV, a resurvey of the Palaearctic species pertaining of the *Baeus*. Another important resurvey is published again in collaboration with PETROV (2002) and she has as object of study the Palearctic species pertaining of the *Gryon* and the species pertaining of *Exon*. In 2001, in collaboration with Kozlov, she published a monograph of the Palearctic Teleasinae and Baeinae.

In Russia, KOZLOV M. A. (born 1936), publishes numerous resurveys and monographs upon the species pertaining of Platygastridae from the Palaearctic. In 1965, he published the Teleasinae and the Telenominae from the former USSR, followed, two years later, by a resurvey regarding the Palearctic species from *Telenomus*. In collaboration with KONONOVA, he published two important monographs: in 1983, a monograph of the Telenominae from the USSR fauna, followed, in 1990, by another monograph of the USSR Scelioninae. These two monographs and that published in 2001 represent the most exhaustive contemporaneous determinant for the Palaearctic Scelionidae. Within these monographs can be identified determination keys and valuable informations regarding the morphology, biology and ecology of the Scelionidae. However, the suprageneric classifications of KOZLOV are regarded by N.F. JOHNSON as being a superficial effort compared with other modern attempts, relying on a very small number of characters and assuming the monophyly of all the tribes (JOHNSON's homepage at <http://atbi.biosci.ohio-state.edu>).

AUSTIN (1983) and AUSTIN & FIELD (Invertebrate taxonomy 11, 1997: 1-87) investigated the ovipositor system of the Platygastridae, supporting its status as an independent superfamily, but suggesting the surprising hypothesis on the basis of 14 ovipositor characters that the Sparasionini is the sister-group of the family Platygastridae, these two together forming the sister-group of the rest of Scelionidae,

and suggesting that the tribes Baryconini, Sparasionini, Calliscelionini and Psilanteridini (sensu MASNER, 1976) are polyphyletic, in that some genera possess the plesiomorphic "*Ceratobaeus*-type" ovipositor system (extended and retracted by antagonistic muscles) in common with Sparasionini + Platygasteridae, whereas the rest of the genera of the mentioned tribes possess the apomorphic "*Scelio*-type" ovipositor system operated by changes in hydrostatic pressure, in common with the remaining scelionids.

M.W. MACGOWN (e.g. 1972, 1979) described many platygasterids with much biological information and provided an illustrated key to all described species in the United States (available on CD). He has also pointed to new useful taxonomic characters and given a summary chart of the phylogeny of *Platygaster*, pointing to the fact that many of the species form relatively homogeneous morphological groups. On his web page (<http://msrgmicro.tripod.com>) MACGOWN informs about his current investigations on the platygasterid glossa which have a row of 3 (Platygasterinae) or 4 ("Inostemminae" and Sceliotrachelinae) apical sensilla.

In Japan, with the study of the Scelionidae and Platygasteridae are implicated KENZOU YAMAGISHI, TODASHI MIURA and YOSHIRO HIRASHIMA. The results of their studies are published especially in "Esakia" magazine.

In Australia, an important revision from recent years is "Biology, ecology and systematics of Australian Scelio, wasp parasitoids of locust and grasshopper eggs" (CSIRO 2001, 254 pp.) by DANGERFIELD, AUSTIN & BAKER.

In Holland, HENK J. VLUG is implicated in the study of the Platygasteridae. As he states in his 1995 World Catalogue, the study of this family is a very difficult one, because of the existence of some genera from which numerous species were described by different authors in different publications. At this moment, there is no resurvey made upon this family, because of the fact that a resurvey implies the consultation of the type species. This aspect is impossible to achieve because part of the Platygasteridae collections being destroyed during the Second World War, and in the case of a series of species described especially by KIEFFER, the type specimens are lost. From the great collections, until today the following ones are preserved: HALIDAY's, WALKER's, THOMSON's, FORSTER's and ASHMEAD's. The NEES ab ESENBECK collection and KIEFFER collection were destroyed or lost. As a consequence of these discommodities, the study of the Platygasteridae is much impeded to such a degree that

VLUG in 1983 stated that the percentage of reliable species indication in Platygastriidae - as well as in Scelionidae is only 20, i.e. 80 % of a random collection could not be identified to species (Mitt. dtsch. Ges. allg. Ent. 4, p. 169).

VLUG began the study of Platygastriidae from British Museum Collections, publishing in 1984 "The Types of Platygastriidae (Hymenoptera, Scelionidea) Described by Haliday and Walker and preserved in the National Museum of Ireland and in the British Museum (Natural History). 1. Designation of Lectotypes", followed, a year later, by "The Types of the PLatygastriidae (Hymenoptera, Scelionoidea) Described by Haliday and Walker and preserved in the National Museum of Ireland and in the British Museum (Natural History). 2. Keys to Species, Redescriptions, Synonymy."

In this paper determination keys for 97 Palearctic species pertaining of Platygastriinae subfamily are given. These species are part of the following genera: *Platygaster*, *Synopeas*, *Piestopleura*, *Leptacis*, *Trichacis*, *Isocybus* and *Amblyaspis*. In order to facilitate the understanding of the determination keys, the text is accompanied by numerous drawings.

These studies are capital for every person who desires to involve himself/herself in the systematics of the platygastriidae.

In 1995, VLUG publishes the only contemporaneous catalogue of the Platygastriidae from the worldwide fauna. This catalogue is organized in parts. In the first part are presented the present platygastriidae genera and species, the synonymies and the dispersion of these ones, and in the second part the hosts of the platygastriidae are presented. The catalogue presents 72 genera of Platygastriidae. In these 72 genera 949 species are enclosed. For the Palearctic region, only 36 genera are cited.

In Denmark, P.N. BUHL is the specialist involved in the study of the Platygastroidea superfamily. He publishes various new species, engaging himself especially in the study of *Platygaster*, the most difficult genus of this family. He publishes a number of papers of extraordinary relevance for the systematics of Platygastriidae family:

- in 1995, he realizes the study of the type specimens from the ZETTERSTEDT and THOMSON collections; the results of this study are materialized by the apparition of the paper *On Some Types of Platygaster Latreille Described by J.W. Zetterstedt and C.G. Thomson (Insecta: Hymenoptera: Platygastriidae: Platygastriinae)*.

- in 1999 publishes *A Synopsis of the Platygastriidae of Fennoscandia and Denmark*, work in which determination keys for approximately 230 species from the following genera are to be found: *Allotropa*, *Amitus*, *Fidioba*, *Platystasius*, *Acerotella*, *Amblyaspis*, *Anopedias*, *Ceratacis*, *Euxestonotus*, *Inostemma*, *Iphitrachelus*, *Isocybus*, *Isostasius*, *Leptacis*, *Metaclisis*, *Metanopedias*, *Piestopleura* and *Platygaster*. From these 230 species, 8 are described for the first time by the author.

- in 1995 realizes taxonomic studies upon the *Euxestonotus* genus, and three years later publishes a global resurvey of this genus.

Beginning with 1994 and until 2004, this author has published approximately 300 species pertaining of the Platygastroidea superfamily, new to science.

In Italy, a number of researchers are implicated in the study of the Platygastroidea superfamily.

In 1979, MINEO G. published a resurvey of the species of *Gryon* from the Palaearctic area. In the same year he accomplishes a resurvey upon the same genus in Mongolia, and in 1983, a resurvey of the species of *Gryon* in Ethiopia. In 1982 he gave to science a new genus, *Maruzza*, and pursues its distribution worldwide.

VIGGIANI is preoccupied by the systematics of *Amitus*. In 1982, he published determination keys for the species of this genus from Italy.

CALECA implicates himself in the systematics of *Dyscriptobaeus*, but also in the systematics of *Gryon*.

F. BIN publishes species from *Telenomus* and *Trimorus* genera. He has studied in several papers (1981, 1995) the organs on the female antennal clava and shown their unique structure in Scelionoidea, supporting its separate superfamily status.

In Turkey, *Trissolcus* is particularly studied by ERHAN KOCAC, NESET KILINGER and MIKTAT DOGANLAR. These researchers have published the species of *Trissolcus* in Turkey, also realizing the keys for their determination.

MIKTAT DOGANLAR published in 2001 16 species of *Trissolcus* from Turkey's fauna.

ERHAN KOCAC and NESET KILINGER published in 2002 eight species from the *Trissolcus*, obtained from eggs prelevated from *Eurygaster*.

In Morocco, J. VOEGELE is the researcher implicated in the study of *Trissolcus*. He publishes the species of this genus from Morocco, realizing determination keys for these species. In 1962, he published a paper in which there are given characters for

determination of some of the species from the *Trissolcus* based on the aspect of parasitized egg.

In Hungary, J.B. SZABO preoccupied himself with the study of the typefiers of Scelionidae and Platygastriidae (1956-1981); he published various essays regarding the systematics and faunistics of these species. SZABO had a remarkable activity, being preoccupied not only with the Hungarian fauna, but also with the Palaearctic fauna; he published numerous resurveys of some genera from this area. He has published various new species, today some of them are synonymized, but a great number of them are still valid. In 1957 he published the *Hungaroscelio* as a new genus for the science, today this genus is synonymized with *Tiphodytes* Bradley (KOZLOV, 1978).

In 1966 he published the following genera new to science: *Scutelligryon* and *Niteogryon*. *Scutelligryon* was synonymized with *Trimorus* Forster, 1856 (KOZLOV, 1978), and *Niteogryon* was synonymized with *Xenomerus* Walker, 1836 (HELLEN, 1971).

In 1975, he published four new genera: *Archiphanurus*, *Pseudophanurus*, *Verrucoscicephalia* and *Pseudotelenomoides*. *Archiphanurus* is considered valid genus by the authors from the former USSR and by those from Vietnam, however, JOHNSON (1988) synonymized this genus with *Paratelenomus* Dodd. The next three genera were synonymized with *Telenomus* (KOZLOV & KONONOVA, 1983).

Essential bibliographical references upon the Platygastroidea superfamily

a. There exist only three Global-level catalogues: DALLA TORRE's catalogue, more than 100 years old, then the catalogue published by JOHNSON in 1992 which includes all the species from Proctotrupoidea, except Platygastriidae, and VLUG's catalogue (1995) in which all the species of Platygastriidae are included. (JOHNSON also runs the web-based newsletter *Proctos*).

b. Present-day global-level monographs do not exist. The only global monograph belongs to KIEFFER dated from 1926. Regional-level monographs for the Scelionidae in the Palaearctic region are published by KOZLOV and KONONOVA in 1983 (Telenominae), 1990 (Scelioninae) and 2001 (Teleasinae and Baeinae). A key to world genera is by MASNER (1976).

For Platygastridae, there is no present-day monograph. The only exhaustive determination keys for the genera of this family are by MASNER & HUGGERT (1989), for the species of this family are by KOZLOV (1978), to VLUG (1985) and BUHL (1995, 1996, 1999).

Postscript

Still very much work on Platygastroidea, perhaps the most neglected of all insect superfamilies, is needed before even a guess of their diversity can be made, and much more again before their biology and evolution is well understood. What is obvious in the development of the last 2-3 decades is more basic phylogenetic analysis, world revisions of genera, and ever more sophisticated investigations of anatomy and ultrastructure by new techniques, revealing new characters. A consensus of the higher taxonomy is in sight, though there still is widespread doubt about many of the rootings in the larger phylogenetic tree. On the other hand, on the species level the situation can be sensed by the words of A. POLASZEK with regard to platygastrids (Entomologist's mon. Mag. 133, 1997: 77): *"The family comprises well over 1000 described species representing, however, only a small proportion of the actual number occurring. The British fauna is no exception to this general rule, although a disproportionately large number of species of Platygastridae have been described from Britain, mostly by Francis Walker. Despite recent attempts to characterise and key Walker's type specimens we are still very far from being able to identify some very common and even economically important species occurring in England."* So alpha taxonomy and curatorial work have been more neglected than higher level taxonomy in later years, but lack of resources is an ever present fact. E.g., nothing came of the still very relevant proposal by VLUG (1983) of a "travelling curator", appointed to take care of the collections in the various European museums. With the close network of museums in the united Europe of today such proposals should be considered anew.

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