Definition of subgenera and a reassessment of species groups of *Torymus* Dalman (Hymenoptera: Torymidae), based on Palaearctic material

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Abstract. Five subgenera, *Callimomus* Thomson, *Lioterphus* Thomson, *Arctorymus* subgen. n., *Aretorymus* subgen. nov., and *Torymus* s. str. are recognized for Palaearctic species of the genus *Torymus* Dalman. Concepts of *Callimomus* and *Lioterphus* are revised and extended against previously adopted concepts of these taxa as separate genera. Several uncertain placements of recently described species in Graham's species groups are corrected. These groups are reassessed and those preserved are provided with updated descriptions. A key is given to subgenera and species groups. One species (*T. drewseni* Zavada) is synonymized.

Samenvatting. Definitie van subgenera en vaststelling van soortengroepen in *Torymus* (Hymenoptera: Torymidae), gebaseerd op Palaearctisch materiaal
In het genus *Torymus* Dalman worden vijf subgenera onderscheiden voor de Palaearctische soorten: *Callimomus* Thomson, *Lioterphus* Thomson, *Arctorymus* subgen. n., *Aretorymus* subgen. nov., en *Torymus* s. str. Opvattingen over *Callimomus* en *Lioterphus* worden herbekeken en uitgebreid tegenover eerder aangekomen concepten van deze taxa als afzonderlijke genera. Verschillende onzekere plaatsingen van recent beschreven soorten in de soortengroepen volgens Graham worden verbeterd. Deze groepen worden opnieuw ingedeeld en de behouden groepen worden herbeschreven. Een determineersleutel wordt gegeven voor de subgenera en de soortengroepen. Eén soort (*T. drewseni* Zavada) wordt gesynonymiseerd.

Résumé. Définition des sous-genres et définition des groupes d'espèces de *Torymus* (Hymenoptera: Torymidae), basé sur du matériel paléarctique
Dans le genre *Torymus* Dalman, cinq sous-genres pour les espèces paléarctiques sont acceptés: *Callimomus* Thomson, *Lioterphus* Thomson, *Arctorymus* subgen. n., *Aretorymus* subgen. nov., et *Torymus* s. str. Les concepts de *Callimomus* et *Lioterphus* sont revisés et changés contre des concepts auparavant acceptés pour ces taxa comme genres séparés. Le placement de plusieurs espèces, mises avec incertitude dans les groupes d'espèces de Graham, est correcté. Ces groupes sont revisés et les groupes préservés sont décrits à nouveau. Une clé de détermination est donnée pour les sous-genres et les groupes d'espèces. Une espèce (*T. drewseni* Zavada) est mise en synonymie.

Keywords: *Torymus* – subgenera – new subgenera – species groups – Palaearctic – key.

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Preface

In the present paper, the species groups as defined (in part) in Graham (1994) and understood in Graham & Gijswijt (1998) are reassessed for the same scope of species, and essential implications of this reassessment are drawn to prepare definitions of subgenera of this large Holarctic genus.

This work does not meet in full the aims suggested by the title, Nearctic one-fourth of the specific diversity of the genus being inaccessible to me, nor is it concerned with aspects of specific biology, host-relationship, and distribution. Although the characters selected, so far as the reading of Grissell's (1976) revision afforded, have been checked for consistency against Nearctic species groups, an extension of subgeneric concepts proposed here could not be

confidently made so as to include Nearctic fauna. However, Palearctic material does provide enough distinct species to establish several subgenera. Two of them retain generic names of former allied genera, *i.e.*, *Callimomus* and *Lioterphus*, of which neither has purely Nearctic species.

The genus *Torymus* Dalman is recognized as the single Palearctic genus in the tribe Torymini, following Grissell's (1995) definition of the tribe as having sinuate metapleural suture, this character being the single autapomorphy of the genus.

Previous attempts at subgeneric classification of *Torymus*

Graham & Gijswijt (1998) have proposed 13 species groups and 5 species solae in their revision of Palearctic species of *Torymus* Dalman. This revision came as the result of a more than thirty-year-long study and, apart from the final achievement of nomenclatural order (as many as 67 names have been synonymized in addition to almost as many introduced by Eady (1959)) and the long-anticipated synonymy of *Diomorus* with *Torymus*, it was the first time that a new subdivision of the Palearctic species of the genus had been attempted.

Graham and Gijswijt, nevertheless, did not find it necessary to recognize former genera as subgenera, which in part was justified by the deficiency of current concepts for some of them (notably for *Syntomaspis*). By that time, also, several new species have been described (*e.g. T. austriacus* Graham) whose morphologies required a revised character set to be used in definitions of whatever subgenera there may be. A cautious view on subgeneric limits was only proper at that stage.

Many chalcidologists have been content with unsettled subgeneric classification of *Torymus*. The names of four former genera have been readily referred to as provisional substitution names of subgenera, when a need should arise, or, alternatively, the names of Graham's species groups have been used, for example, to identify the relationship of a newly described species.

Papers dealing with *Torymus* are reviewed in detail in Graham & Gijswijt (1998). A brief discussion of some recent publications, with special regard to the genus *Diomorus* Walker, follows.

Graham (1992) was the last publication where *Diomorus* is recognized as a separate genus; the author gave a key to distinguish the two genera, but he had already been at a loss for a single, principal character that all species of *Diomorus* possessed and none species of *Torymus* did. He had to recourse to characters of sculpture (such as rugosity on vertex and punctures along intersternal suture) to preserve *Diomorus*, and it was clear that a good generic conception for *Diomorus* cannot rest on differences in sculpture. Graham also split the three species of *Diomorus* in two species groups.

Bouček published (1996) an important paper with the descriptions of (only) two species of *Torymus*. One of them, *T. pulcher* Bouček, has a conspicuous, though small, tooth on hind femur, although it runs to *Torymus* in Graham's key. Zerova & Seryogina (1991) had earlier described (in Russian) this species under

a different name (*kononovae*), but that paper apparently remained unknown to Bouček. Their synonymy followed up in Zerova, Seryogina, Zavada (2000).

Grissell (1995) did not alter taxonomic status of *Diomorus*, stating that *Diomorus* is close to *Torymus* and that *Lioterphus* and *Syntomaspis* have long been regarded as subgenera by the European authors (Bouček & Graham, 1978a, b). Identification labels of Graham's and Gijswijt's suggest the same.

Geographic coverage

The material studied includes about 2,000 specimens of 102 species (of 168 known) from Western Europe, European part of Russia, Ukraine, Caucasus, Central Asia, and Far East of Russia.

Under the titles of each subgenus or species group below, I have listed the materials examined. The depositories are stated except where they are not certainly known to me on the date of the present paper's submission (their label data are transcribed from my earlier notes).

Glimpses of material from Central Asia suggest an endemic fauna with peculiar forms that do not fit into species groups established on European material. Further studies of Mongolian material (available in European museums, so far as I know, from the Hungarian Natural History Museum, Budapest) as well as material from other localities extralimital to Europe may help produce clearer concepts of the subgenera and of the genus itself.

Depositories

NNML Nationaal Natuurhistorisch Museum Leiden, The Netherlands
SIZK Schmalhausen Institute of Zoology of National Academy of Sciences of Ukraine, Kiev, Ukraine
ZMAN Zoölogisch Museum Amsterdam, afdeling Entomologie, The Netherlands
ZMUC Zoological Museum, University of Copenhagen, Denmark

Key to subgenera and species groups of *Torymus* Dalman, based on Palaearctic material

The text in brackets is additional characters, not necessarily exclusive to the taxon referred. These characters are included to aid recognition only, and are not matched in the corresponding alternative part of couplet.

1. Scutellum with concentric costulae that spread continuously onto distinctly delimited frenum. Stigma small and sessile (fig. 11): PM is distinctly narrower than M near juncture of ST. Metepisternal callus smooth, not differing in sculpture from propodeum. [Venation pale; disc very sparsely pilose. All legs except tips of tibiae and tarsi, with metallic sheen, concolorous with the body.] .....subgenus ***Arctorymus*** subgen. n.
– Scutellum without such concentric costulae. Stigma petiolate: M and PM subequal in breadth near juncture of ST. Metepisternal callus rough, or more rough than propodeum. [Frenum delimited or not.].....**2**

2. Mandibles with 2 teeth (figs. 4–5). Anterior margin of hind coxa angulate in lateral view (figs. 1–3). Propodeum forms a low angle (30–40°) to longitudinal axis of body, coriaceous to

finely reticulate. Base of scutellum pointed. Ocelli smaller: OOL more than 1.3 times OD. Hind femur with lower outer margin carinate and more or less conspicuously deviating outward in distal 0.6–0.9 of its length and edentate (fig. 6). [Hind basitarsus about or more than 2.5 times shorter than hind tibia. ST oblique, expanding. Mesepimeron as high as broad.]. .... **3** (subgenus ***Callimomus*** Thomson)

– Mandibles with 3 teeth. Anterior margin of hind coxa straight or very slightly angulate or evenly curved in profile. Propodeum more steep. If sculpture of propodeum as strong as above (*T. fastuosus* Boheman) then frenal line distinct. Base of scutellum narrowly to broadly truncate. If ocelli as small and close as above (*T. iacchos* Zavada) then base of scutellum not pointed and mesepimeron almost twice as high as broad and pointed apically. If hind femur swollen then it bears a strong tooth. **4**

3. Scutellum with sculpture obsolescent toward apex. F1 elongate, at least 1.5 times as long as broad. Anterior margin of mesepimeron not straight. .....***austriacus*-group**
– Scutellum with distinct sculpture throughout. F1 shorter than above. Anterior margin of mesepimeron straight, converging with its posterior margin. .....***laetus*-group**

4. Hind femur with a weak to strong tooth on lower outer margin in distal part. [Pedicellus very short, subquadrate. Sensilla very short and dense.].....**5**
– Hind femur edentate.....**8**

5. M less than half the length of costal cell. Propodeum with robust, roughly symmetrical, areolate-rugose sculpture. .....subgenus ***Aretorymus*** subgen. n.
– M subequal in length to costal cell. Propodeum not with strong raised sculpture, either finely reticulate or smooth; in latter case, with or without longitudinal striae and submedian lines. **6**

6. Propodeum with submedian carinae. ..... ***T. armatus*** Boheman (species sola)
– Propodeum without submedian carinae.....**7**

7. Propodeum smooth. .....***T. kononovae*** (Zerova & Seryogina) (species sola)
– Propodeum finely reticulate. ..... ***T. fastuosus*** Boheman (species sola)

8. Shorter hind tibial spur reduced, about half the length of longer spur with the latter not more than apical breadth of tibia, or absent. Hind coxa slender (figs. 9–10): more than 3.5 times as long as broad, with posterior margin virtually straight and parallel to anterior margin. [Occipital carina barely discernible on postgenae. Sculpture on scutellum obsolescent at apex. Frenal line not traceable.] ..... subgenus ***Lioterphus*** Thomson
– Shorter spur present; if about 1/2 the length of longer spur, then (*T. lampros* Graham, *T. pulchellus* Boheman and *T. microcerus* (Walker) of *chloromerus*-group) hind coxa about twice as long as broad, or (*T. flavipes* (Walker) and *T. longicalcar* Graham of *chloromerus*-group) longer spur about or more than twice apical breadth of hind tibia. Hind coxa stouter; its posterior margin curved. **9**

9. Propodeal foramen high (fig. 12). [Frenal line distinct.].....***varians*-group**
– Propodeal foramen low. If intermediate (*T. arundinis* (Walker) of *chloromerus*-group), then scutellum without frenal line. **10**

10. Posterior margin of gastral tergite 4 entire. Submedian propodeal carinae distinct. ***cyaneus*-group**
– Posterior margin of gastral tergite 4 incised. Propodeum without traceable submedian carinae. **11**

11. Ocelli small: in ♀♀ POL 1.3–1.6 times OOL, OOL 1.3–1.5 times OD, in ♂♂ POL 0.8–0.9 times OOL, OOL 2.1–2.2 times OD. Mesepimeron pointed apically. [Sculpture on vertex extremely fine.] .....***iacchos*-group**[1]
– Ocelli larger and more distanced from each other than above. Mesepimeron with apex truncate. **12**

[1] Mongolian *T. anularius* Szelényi, 1973 most probably belongs together with *T. iacchos* Zavada. Due to the inadequately brief description of Szelényi's species, a comprehensive diagnosis could not be drawn for the *iacchos*-group. The condition of the ocelli of *anularius*, in particular, is unknown to me; therefore, this character as it appears in the key may need to be replaced.

12. Propodeum with fine reticulation under which longitudinal striation is invisible. [Body with strong coppery sheen.]. ..... *T. fastuosus* Boheman (species sola)
– Propodeum without reticulation, smooth or weakly striate longitudinally. **13**

13. Frenal line distinct, though weak. Propodeum weakly striate. ..... ***affinis*-group**
– Frenal line not traceable. Propodeum without striae, occasionally (and at most) alutaceous medially. **14**

14. F1 elongate: more than 1.5 times as long as broad. Hind coxa more than 2.5 times as long as broad. [Temples not more than 0.2 times apparent length of eye.] ..... ***hederae*-group**
– F1 shorter. Hind coxa shorter. ..... ***chloromerus*-group**

Characters selected for definitions of subgenera

Many characters that clearly admit of gradation, although found to show no intermediate states in the 102 species studied, are used intentionally. Among these the least reliable are characters expressed by ratios (*e.g.*, short M in relation to breadth of wing, high propodeal foramen). However, the arrangement proposed here, supplemented by auxiliary characters such as coloration and host preferences, appears more coherent than if I had chosen to discard ratios completely.

For each of selected characters in the list below the state indicated as 'normal' (or that given first) is assumed to be plesiomorphic as that in which the character is represented in the "chloromerine" morphological type. The evidence that species group of *chloromerus* is a primitive one is given in the Comments section under its title below.

A special attention and weight have been given to characters of sculpture. Comparative studies reveal strong stability of certain types of sculpture within groups whose common derivation is supported by other characters (for example, apical obsolescence of sculpture in species of subgenus *Lioterphus*).

However, several other sculptural patterns, as large and deep piliferous punctures, reappear in obviously distant groups, and therefore are excluded from the main list.

As not all of these supplementary characters are mentioned in the following discussion, the reader will have to consult the papers mentioned above, and is generally supposed to have some knowledge of the species morphology prior to estimating the weight of each character.

Number of teeth on mandibles (mt): three teeth/two teeth (figs. 4–5).

Stigma (st): petiolate if M and PM are equal in breadth at the juncture of petiolus with M and PM ▪ sessile if M is broader than PM and the length of ST cannot be measured (fig. 11). An extreme state typifying "petiolate" is shown in fig. 13.

Scutellum: concentric costulae (scc): absent ▪ present. The concentric costulae extending over the distinctly delimited frenum are observed in *Arctorymus* subgen. n. and in Nearctic *T. koebelei* (Huber) and related species. Note that in this pattern, the direction of lineations is longitudinal, thus being different from the transversely running striation sometimes observed in other

subgenera, and that costulae in *Arctorymus* form a loop anteriorly, approximately in the middle of scutellum.

Fore wing: **M** (M): normal if length of M is subequal to breadth of wing and more than half the length of costal cell ▪ short if it is about to, or less than, half the breadth of wing and less than 1/3 the length of costal cell.

Fore wing: **PM** (PM): normal if PM is 1/4 or less times as long as distance from ST to apex of wing ▪ long if it reaches (approximately) a point midway between ST and apex of wing.

Metepisternal callus (c): rough if differing in sculpture (that is, more coarsely sculptured) from propodeum and bearing numerous hairs ▪ smooth if hairs are few and the sculpture is as weak as that on propodeum.

Parastigma[2] (pst): normal if equal in breadth with SC ▪ swollen if distinctly broader than (and often darker than) it (fig. 7). This measurement must be done accurately. In some species (notably in *T. fagineus* Graham) the parastigma, if the wing is observed in dorso-posterior view, appears swollen. This is due to an inflection of SC at its juncture with cubital vein, proximally to which SC is, from this angle of view, turned aslant to the eye, and thus not showing its true breadth.

Shorter hind tibial spur (shts): present or reduced ▪ absent. I have not completely overcome doubts if the shorter spur is indeed absent in *nitidulus* (Walker) and *fuscicornis* (Walker): in these species the shorter spur may be just as short as apical setae on hind tibia. But that it is reduced is beyond doubt.

Hind coxa (hc): normal if less than 3.3 times as long as broad (usually 2–2.5 times) ▪ elongate if more than 3.5 times longer than broad and the dorsal and ventral margins of the coxa run in parallel for more than half its length.

4th gastral tergite: posterior margin (gs4): emarginate (or incised) ▪ entire, on female gaster.

Propodeal foramen (pf): low if the ratio of the length of propodeum measured in the middle to that measured half way laterad to the propodeal spiracle is 0.8–1.0 ▪ high if this ratio is 0.6 or less (fig. 12). This character in the modified state is accompanied by the angle of propodeum being 60–65º.

Propodeum: submedian carinae (psmc): absent ▪ present. Represented as straight and parallel grooves. This character is best expressed in *T. armatus* Boheman and in species of *cyaneus*-group.

Propodeum: median carina (pmc): absent ▪ present. Found, quite weakly expressed, only in *T. fastuosus* Boheman. However, quite few characters in *Torymus* are expressed stronger.

Anterior margin of hind coxa (ham): not angulate (straight or evenly curved) ▪ angulate (figs. 1–3). Although based and relying largely on the observer's perception, this character fitly complements the isolated position of the subgenus *Callimomus* Thomson.

[2] Two terms of similar spelling, pr(a)estigma and parastigma, have been concurrently used to refer to the same structure. Fortunately, these terms are fully interchangeable.

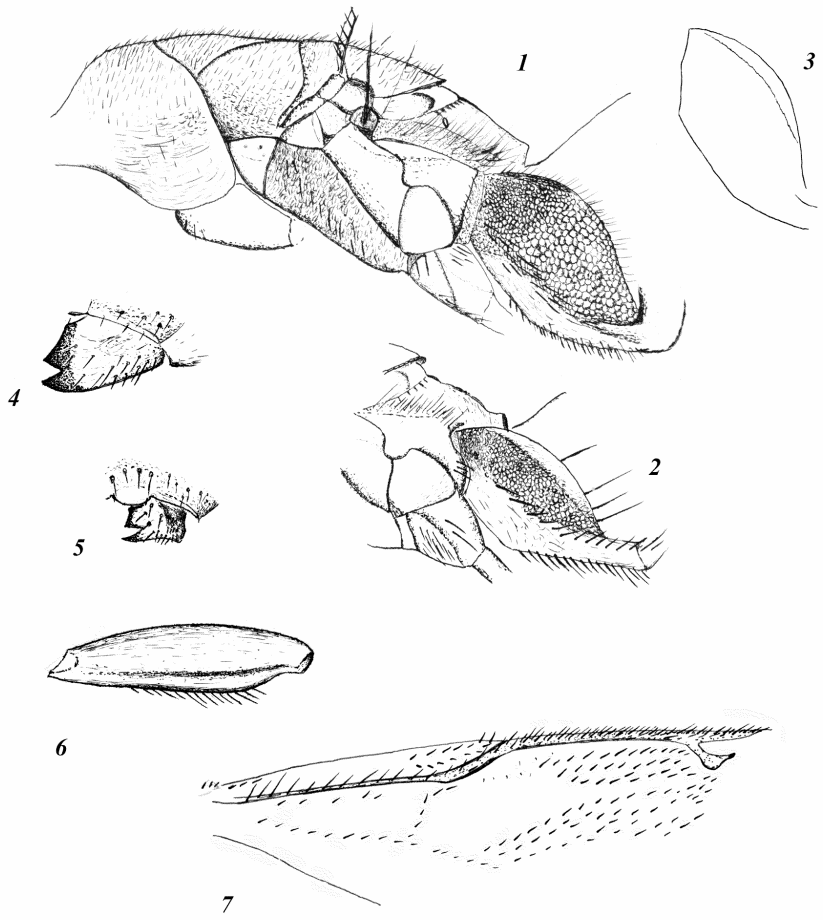

Fig. **1**.– *T. igniceps* Mayr ♀, mesosoma in lateral view; fig. **2**.– *T. laetus* (Walker) ♀, posterior part of mesosoma in lateral view showing angulate hind coxa; fig. **3**.– *T. nemorum* Bouček ♀, outline of hind coxa in lateral view; fig. **4**.– *T. igniceps* Mayr ♀, left mandible and lower margin of face in antero-lateral view; fig. **5**.– *T. austriacus* Graham, the same; fig. **6**.– *T. laetus* (Walker) ♂, hind femur from inside, showing deviating lower margin; fig. **7**.– *T. ventralis* (Fonscolombe) ♀, fore wing.

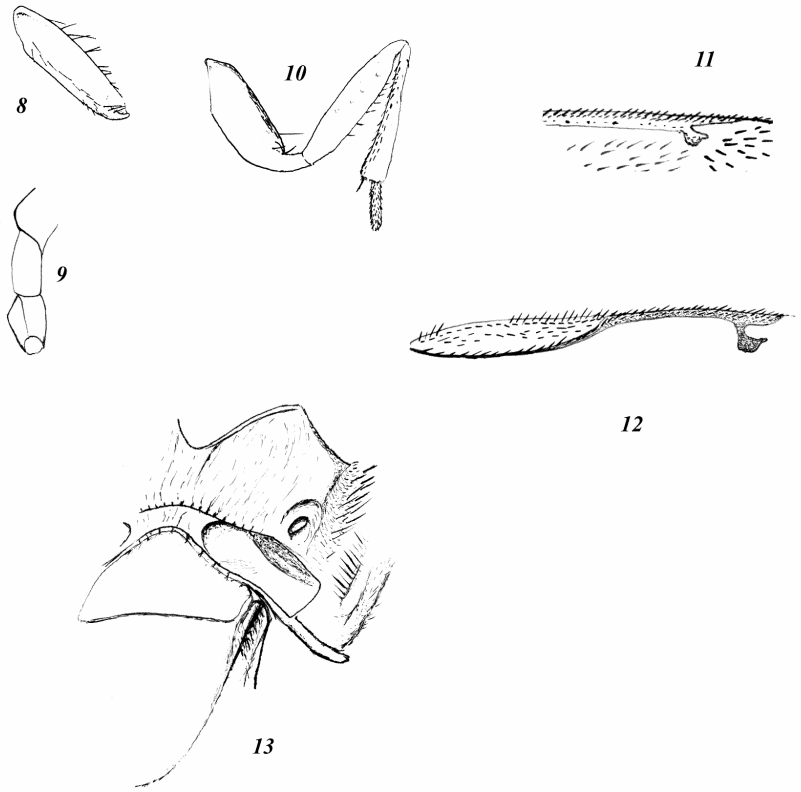

Fig. **8**.– *T. azureus* Boheman ♀, hind coxa; fig. **9**.– *T. azureus* Boheman ♀, mesepimeron; fig. **10**.– *T. nitidulus* (Walker) ♀, hind leg; fig. **11**.– *T. tatianae* Zavada ♀, stigma; fig. **12**.– *T. druparum* Boheman ♀, propodeum in postero-dorso-lateral view; fig. **13**.– *T. notatus* (Walker) ♀, fore wing venation.

Ocelli (o): normal if POL:OOL is 1.7–2.2 and OOL:OD is 0.8–1.3 ▪ small if POL:OOL is less than 1.5 and OOL:OD is more than 1.3. An incomplete, or alternative, state is observed in *nitidulus* (Walker) and *fuscicornis* (Walker), which have ocelli remarkably small, though not so closely set as is here understood by the "smallness" of ocelli. However, this is probably an aberration of ‘normal’ state caused by the small size of these species.

1st funicular segment (F1): normal if F1 not more than 1.2 times as long as F2 and less than 1.5 times as long as broad ▪ elongate if longer than this. This character was used chiefly to preserve *hederae*-group. A ‘reduced’ state, of which the condition of proximal funicular segments in *nitidulus* (Walker) and *fuscicornis* (Walker) is strongly suggestive, is regarded differently from the "normal/elongate" opposition.

Table 1. Species groups and species solae of Graham & Gijswijt (1998)

	mt	st	scc	M	PM	c	pst	shts	hc	gs4	pf	pmc	psmc	ham	o	F1	p	hdc	fl	hft
nitidulus-group	–	–	–	–	–	–	–	+	+	–	–	–	–	–	–	–	–	–	–	–
laetus-group[3]	+	–	–	–	–	–	+	–	–	–	–	–	–	+	i	–	–	–	–	–
T. armatus Boheman (sp. sola)	–	–	–	–	+	–	–	–	–	–	–	–	+	–	–	–	+	–	+	+
cupreus-group	–	–	–	+	–	–	i	–	–	–	–	–	–	–	–	–	+	+	+	+
T. kononovae (Zer. & Ser.) (incertae sedis)	–	–	–	–	+	–	–	–	–	?	–	–	–	–	–	–	+	–	+	+
austriacus-group	+	–	–	–	–	–	–	–	–	–	–	–	–	+	+	+	–	–	–	–
T. azureus Boheman (sp. sola)	–	–	–	–	–	–	–	+	+	–	–	–	–	–	–	–	–	–	–	–
baudysi-group	–	+	+	–	–	+	–	–	–	+	–	–	–	–	–	–	–	?	+	–
cyaneus-group	–	–	–	–	–	–	–	–	–	m	–	m	m	–	–	–	+	+	+	m
varians-group	–	–	–	–	–	–	–	–	–	–	+	–	–	–	–	–	–	–	+	–
erucarum-group	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T. nemorum Bouček (incertae sedis)	–	–	–	–	–	–	+	–	–	–	–	–	–	+	–	–	–	–	–	–
hederae-group	–	–	–	–	–	–	i	–	–	–	–	–	–	–	–	+	–	–	–	–
flavipes-group	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
pulchellus-group	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T. arundinis (Walker) (sp. sola)	–	–	–	–	–	–	–	–	–	–	i	–	–	–	–	–	–	–	–	–
T. favardi Steffan (sp. sola)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
cingulatus-group	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T. apiomyiae Bouček & Mihajlovic (sp. sola)	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?
bedeguaris-group	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Question mark (?) is placed where data are missing.
(i) marks an intermediate state.
(m) indicates that mixed species are included in that group, (i.e., species in the group vary in that character).

[3] Except *T. cyprianus* Graham & Gijswijt.

Table 2. Subgenera and species groups with characters: resulting concepts

	mt	st	scc	M	PM	c	pst	shts	hc	gs4	pf	pmc	psmc	ham	o	F1	p	hdc	fl	hft
subgenus *Arctorymus*	–	+	+	–	–	+	–	–	–	+	–	–	–	–	–	–	–	?	+	–
subgenus *Callimomus*:																				
austriacus-group	+	–	–	–	–	–	–	–	–	+	–	–	–	+	+	+	–	–	–	–
laetus-group	+	–	–	–	–	–	+[a]	–	–	–	–	–	–	+	i	–	–	–	–	–
subgenus *Lioterphus*	–	–	–	–	–	–	–	+	+	–	–	–	–	–	–	–	–	–	–	–
subgenus *Aretorymus*	–	–	–	+	–	–	–[a]	–	–	–	–	–	–	–	–	–	+	+	+	+
subgenus *Torymus* s. str.:																				
Boheman	–	–	–	–	+	–	–	–	–	–	–	–	+	–	–	–	+	–	+	+
T. kononovae (Zerova & Seryogina)	–	–	–	–	+	–	–	–	–	?	–	–	–	–	–	–	+	–	+	+
T. fastuosus Boheman	–	–	–	–	–	–	–	–	–	–	–	+	–	–	–	–	+	–	+	–[c]
cyaneus-group	–	–	–	–	–	–	–	–	–	+	–	–	+	–	–	–	+	+	+	–
varians-group	–	–	–	–	–	–	–	–	–	–	+	–	–	–	–	–	–	–	+	–
affinis-group	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	+	–
iacchos-group	–	–	–	–	–	–	–	–	–	–	–	–	–	–	+	–	–	–	–	–
hederae-group	–	–	–	–	–	–	–[a]	–	–	–	–	–	–	–	–	+	–	–	–	–
chloromerus-group	–	–	–	–	–	–	–	–	–	–	–[b]	–	–	–	–	–	–	–	–	–

(a) Intermediate; the final interpretation of the character's state is not decisive.
(b) Intermediate in *T. arundinis* (Walker).
Question mark (?) is placed where data are missing.
(i) marks an intermediate state.
T. apiomyiae Bouček & Mihajlovič (sp. sola) is excluded as unknown to me.

Pedicellus (p): short if subquadrate and distinctly shorter than F1 ▪ normal if longer than this.

Hind coxa: dorsal carina (hdc): absent ▪ present, sometimes displaced on lateral surface of coxa.

Frenal line (fl): present ▪ absent. This is evidently a highly homoplastic character, being a synapomorphy of several species groups.

Hind femur: tooth (hft): absent ▪ present. As the condition of this traditionally important character in *fastuosus* Boheman can hardly be determined, I included it the last, and regard it nearly a species character, if not unusable at all at a higher level for its homoplasticity.

Discussion

In table 1 Graham's species groups are each tested with the set of characters listed above. Species placed putatively in groups in Graham & Gijswijt (1998) are listed here separately and marked as *incertae sedis*.

Represented in table 2 are "natural" groups that include species with unvarying characters, and those species which stand apart from any such group.

Names of these groups are those of Graham & Gijswijt (1998), except that *chloromerus*- is used as an alias for *bedeguaris*-group. The following entities of the cited paper are included in *chloromerus*-group: *flavipes*-group, *pulchellus*-group, *erucarum*-group, *cingulatus*-group, and *T. arundinis* (Walker) and *T. favardi* Steffan (species solae in that paper). For these entities established by Graham I could not find any structural characters, as identical rows of zeros in Table 1 above show, in which they should differ from *chloromerus*-group.

T. azureus Boheman (also species sola in that revision) is here included together with *nitidulus*-group in the subgenus *Lioterphus*.

Definition of subgenera and species groups

In this section, the subgenera are provided with diagnoses and type-species; preserved species groups are only described and discussed.

Subgenus *Arctorymus* subgen. n.

Type-species: *Torymus baudysi* Bouček.

Diagnosis.— Stigma sessile; scutellum with concentric costulae; metepisternal callus smooth [as indicated in Grissell (1976)].

Description.— Mandible with three teeth; stigma sessile; scutellum with concentric costulae; M and PM normal; metepisternal callus smooth; parastigma not swollen; shorter hind tibial spur present and not reduced; hind coxa not elongate; posterior margin of 4th gastral tergite entire; propodeal foramen low; median and submedian carinae not traceable on propodeum; anterior margin of hind coxa straight; ocelli normal; F1 not elongate; pedicellus normal; frenal line distinct; hind femur without tooth.

Venation pale, parastigma concolorous with proximal abscissa of SC; disc of fore wing very sparsely pilose.

Biology.— Parasitic on Eurytomidae in grasses.

Comments.— The principal defining character of this subgenus is concentric costulae on scutellum which spread onto the distinctly delimited frenal area without weakening (a good SEM picture of scutellum representing this character, in *T. koebelei* (Huber), is plate 4b in Grissell (1976)). Notwithstanding its superficial location, the absence of this pattern of sculpture in any other Palearctic species of *Torymus* is a conclusive evidence of the monophyly of the species included in this subgenus. Further, supporting characters, the sessile stigma and smooth metepisternal callus, are as well unique in the genus.

Composition.— *baudysi* Bouček, *tatianae* Zavada. Some (not all) species from Nearctic *tubicola*-group of Grissell (1976) belong in this subgenus (*koebelei* (Huber) and related species).

Materials Examined.— *T. baudysi* Bouček: 1♀, RUSSIA, Leningrad, Pargolovo, *Calamagrostis epigeios* coll. 2.iv.1972 em.. v.72 (Zerova); 1♀, RUSSIA, Astrakhansky res., Damchansky area, *Agropyrum repens*, em. 20.v.1976 (Zerova); 1♀, UKRAINE, Danube delta, Isl. Parokhodnaya Kosa, 10.vii.1997 (Kotenko); 1♂, UKRAINE, Dunaiskie Plavni res., Kordon Bystry, 20.vii.1997 (Kotenko); 1♀, UKRAINE, Odessa obl., Dunaiskie Plavni res., Isl. Kubanu, 15.viii.1996 (Simutnik); 1♂, UKRAINE, Kiev, Theophania, ex *Tetramesa eximia* in stalks of *Calamagrostis* coll. and em. v.1966 (NN); 2♀, UKRAINE, Chernomorsky res., Ivano-Rybalchansky area, 20.vi.1970 (Zerova) (all in SIZK).

T. tatianae Zavada: Holotype ♀, UKRAINE, Kherson obl., Chernomorsky Res., Soleno-Ozerny area, oak/birch grove, 6.v.1982 (Kotenko) (SIZK); 1♀ paratype, UKRAINE, Lougansk obl., Streltzovskaya Steppe [Reserve], 10 km S v. Melovoe, 25.v.1979, swept on *Caragana frutex* (Perepechaenko) (ZMAN).

Subgenus *Callimomus* Thomson[4]

Callimomus Thomson. 1876:60, 77. Type-species *Callimomus scaposus* Thomson. Designated by Ashmead 1904: 241.

Diagnosis.— Mandible with two teeth; anterior margin of hind coxa angulate.

Description.— Mandible with two teeth; stigma petiolate; scutellum without concentric costulae; M and PM normal; metepisternal callus rough; parastigma swollen; shorter hind tibial spur present and not reduced; hind coxa not elongate; posterior margin of gastral tergite 4 emarginate; propodeal foramen low; median and submedian carinae not traceable on propodeum; anterior margin of hind coxa angulate; ocelli small or intermediate; F1 elongate or not; pedicellus normal; hind coxa without dorsal carina; frenal line not traceable; hind femur without tooth.

Parastigma darker than SC. Propodeum sloping at a low angle, coriaceous to finely reticulate, occasionally with lines of rather strong rugosity in the form of high arches abutting on posterior margin of propodeum (not identifiable as submedian carinae, the latter being straight and parallel). Base of scutellum pointed; middle part of dorsum of thorax that includes base of mesoscutum and scutellum, with notably low relief across sutures (as compared to species of *chloromerus*-group). Mesepimeron with anterior and posterior margins strongly converging upwards, or with anterior margin converging only in upper part. Hind basitarsus short, more than 2.5 times shorter than hind tibia; (notably hind) femora swollen, hind femur carinate along lower outer margin; the latter deviating outward from even curvature in distal 0.6–0.9. ST strongly oblique.

BIOLOGY.— Parasitic on various Diptera in *Carex* species (Graham & Gijswijt, 1998). Unknown for *austriacus*-group.

COMMENTS.— This subgenus consists of the species of Graham's *laetus*- and *austriacus*-groups. The main character for this subgenus is large, two-toothed mandibles (fig. 4-5); additional supporting character is the angulate anterior

[4] According to Grissell (pers. comm.), *Callimomus* was apparently synonymized by Schmiedeknecht (1914), who was the first to place it under *Torymus*, not stating, however, that it was a new synonym.

margin of hind coxa. Swollen parastigma is quite distinct in the species of *Callimomus*, although several other species (*e.g.*, *T. armatus* Boheman, *T. fagineus* Graham) have been found to present a state somewhat approaching it.

There are two subdivisions inside this subgenus which I distinguish as species groups:

(1) *austriacus*-group: *austriacus* Graham (and possibly *imperatrix* Graham & Gijswijt: I have not seen this species);

(2) *laetus*-group: all the rest.

Graham & Gijswijt (1998) include in their *laetus*-group also *cyprianus* Graham & Gijswijt, *fischeri* Ruschka and *grahami* Bouček, which species I have not had an opportunity to examine. However, the following statement in the description of *cyprianus* (p. 87) is indicative of its improper placement in *laetus*-group: "Scutellum [with] base rounded …", as well as the figure of scutellum. The other two species, according to figures and host records, may be placed in this group with good confidence.

There are good reasons to suppose that *austriacus*-group is derived from *laetus*-group as having: (a) accomplished small ocelli; (b) smoothed frenum; (c) stronger sculpture on lateral surface of hind coxa.

COMPOSITION.— *arcticus* Thomson, *austriacus* Graham, *chrysocephalus* Boheman, *fischeri* Ruschka, *grahami* Bouček, *igniceps* Mayr, *laetus* (Walker), *nemorum* Bouček, *regalis* (Walker), *scaposus* (Thomson), and *ventralis* (Fonscolombe).

The Nearctic genus *Allotorymus* Huber may, in anticipation of its synonymy with *Torymus* Dalman, supply its species to this subgenus (or vice versa), in view of the relevant remark in Graham & Gijswijt (1998: 11):

"The Nearctic genus *Allotorymus* Huber, 1927 comes very near to *Torymus*. Its type-species, *Syntomaspis splendens* Provancher, 1887 differs from *Torymus* species mainly in its long, virtually parallel-sided pronotum. Its mandibles have the form seen in the *laetus*-group of *Torymus*; the ocelli are very small; the forewing has an extremely narrow costal cell; its frenum is more or less offset and the scutellar base is pointed. These characters are partly shared by the *laetus*- and *austriacus*- groups of *Torymus*."

MATERIALS EXAMINED.— *T. arcticus* Thomson: 1♀, RUSSIA Far East, Kunashir Isl., N. part of Yu-Kurilsk, Golovina Bay, 145°51.50' E 40°02.50' N, boggy meadow along Bolotnyi Ck, boggy meadow, 4.ix.1977 (Marusik) (SIZK).

T. austriacus Graham: 2♀, UKRAINE, Kiev, Novoselki, sweeping in grass under oaks, 16.vi.1984 (Kotenko) (SIZK); 2♀, UKRAINE, Kiev, Lysa Hora, 30.v.1995 (Kotenko) (SIZK); 5♀, 2♂, 1 gynandromorph, UKRAINE, Ternopol obl., Gusiatin distr, Medobory res., 27.v.1994 (Siniavskaya) (SIZK); 2♀, UKRAINE, Askania Nova res., 8.viii.1985 (NN) (SIZK); 21♀, RUSSIA, Stavropolsky Krai, Mirny, forest hedge between fields, 14.v.1972 (Zerova) (SIZK); 3♀, 1♂, same data (ZMAN); 1♀, MOLDAVIA, Kishinev, botanical garden, florescent grass along road, 5.vi.1967 (NN) (SIZK).

T. chrysocephalus Boheman: 1♂, UKRAINE, Vinnitsa obl., Trostianets distr., Sobolevsky forest stat., florescent grass, Bug riv., 20.vi.1966 (Zerova) (SIZK); 2♂, Lvov obl., Yavorov distr., Rostochie res., Zalivki, flooded meadows, forest, 21.vii.1996 (Gumovsky) (SIZK); 1♀, Lvov obl., Yavorov distr., Rostochie res., road from greater bay of pond Yanovsky to riv. Stavchanka, 19–21.vii.1996 (Gumovsky) (ZMAN).

T. igniceps Mayr: 1♀, 2♂, UKRAINE, Irpen riv., sweeping in grass, 20.vi.1958 (NN) (SIZK); 1♂, HUNGARY, Apatistvanfalvi, 30.vi.1994 (Fursov) (SIZK); 1♀, NETHERLANDS, 't Harde, 22.x.1977 (van Aartsen) (ZMAN).

T. laetus (Walker): 1♀, UKRAINE, Kiev, Nemeshaevo, ex galls *Biorhiza pallida*[5], 13.vii.1974 (Zerova) (SIZK); 1♀, RUSSIA Far East, Sakhalin, Novoalexandrovsk, 7-27.viii.1986 (Nesterov) (SIZK); 1♀, 1♂, Lvov obl., Yavorov distr., Rostochie res., road from greater bay of pond Yanovsky to riv. Stavchanka, 19–21.vii.1996 (Gumovsky) (ZMAN); 1♀, NETHERLANDS, Kunrade 5.vii.1992 (van Aartsen) (ZMAN); 1♂, FRANCE, Le Muy, 10.x.1985 (Gijswijt) (ZMAN).

T. nemorum Bouček: 1♀, MOLDAVIA, Derbetsy v., 9.vi.1974 (Kononova) (SIZK); 1♀, UKRAINE Zaporozhie obl., Melitopol distr., "Kamennaya Mogila", 12.vi.1983 (Kotenko) (SIZK); 1♀, UKRAINE, Lvov obl., Yavorov distr., Rostochie res., road from greater bay of pond Yanovsky to riv. Stavchanka, sweeping in riparian meadow 21.vii.1996 (Gumovsky) (ZMAN).

T. regalis (Walker): ?3♂, UKRAINE, Khmelnitsky obl., Slavut. distr., near lake Sviatoe, boggy forest, 20.vi.1999 (Kotenko) (SIZK); ?1♀, same data (ZMAN); 1♂, UKRAINE, Kiev, Lysaya Gora, 1.vii.1999 (Zavada) (ZMAN).

T. scaposus (Thomson): 1♂, UKRAINE, Volyn obl., Kovel distr., nr. lake Lubche, 6.vi.2000 (Kotenko) (ZMAN).

T. ventralis (Fonscolombe): 1♀, UKRAINE, Lvov obl., Yavorov distr., Rostochie res., border of reserve and Stadchansky forest station, 22.vii.1996 (Gumovsky) (ZMAN); 1♀, HUNGARY, Drávapalkonya, 4.x.1973 (Heller) (SIZK); 1♂, ROMANIA, nr. Tulcha, clearing in forest, 18.v.1996 (Kotenko) (SIZK); 1♀, UKRAINE, Zakarpatskaya obl., Vinogradov distr., nr. v. Hetyna, riparian meadow on riv. Tisa, 4.viii.1999 (Zavada) (SIZK); 1♀, Transcarpathians, Tiachev, plains along Tisa riv., 24.vii.1995 (Kotenko) (SIZK); 1♀, Carpathians, Chernogorie, forest st., 6.viii.1994 (Simutnik) (SIZK); 1♀, 2♂, Vinnitsa obl., Trostianets distr., Sobolevsky forest stat., florescent grass, Bug riv., 20.vi.1966 (NN) (SIZK). 1♀, 1♂, RUSSIA, Moscow obl., Nogin distr., v. Chernogolovka, 6.08.1992 (Kotenko) (SIZK); 1♂, Tsentralny Chernozem Reserve, Yamskoy area, 13.vii.1981 (NN) (SIZK); 1♀, RUSSIA, Dagestan, Karadakh, 4.vi.1972 (Zerova) (SIZK).

Subgenus *Lioterphus* Thomson

Lioterphus Thomson, 1876:60, 99. Type-species: *Torymus pallidicornis* Boheman (now *T. nitidulus* (Walker). Designated by Ashmead 1904:241.

Torymus Dalman (in part); Grissell, 1976 (synonymy).

DIAGNOSIS.— Shorter hind tibial spurs absent or reduced; hind coxa elongate (figs. 8, 10).

DESCRIPTION.— Mandible with three teeth; stigma petiolate; scutellum without concentric costulae; M and PM normal; metepisternal callus rough; parastigma not swollen; shorter hind tibial spur reduced or absent; hind coxa elongate; posterior margin of gastral tergite 4 emarginate; propodeal foramen low; median and submedian carinae not traceable; anterior margin of hind coxa straight; ocelli small[6]; F1 not elongate (see remarks below); pedicellus normal; hind coxa without dorsal carina; frenal line not traceable; hind femur without tooth.

Teguments of the body weakly sclerotized and soft (though dark, not testaceous): mounted specimens often have head collapsed and rest of body distorted. Hind coxa notably slender: more than 3.5 times as long as broad, with weak, coriaceous sculpture on lateral surface which is devoid of punctures.

[5] Apparently wrong.

[6] Although wide apart, which does not allow to identify this state with that designated as "normal" in the character list.

Propodeum sloping at a high angle, with very small and scarcely visible foveolae along anterior margin. Base of scutellum broadly truncate. Mesepimeron about twice as high as broad; scutellum with sculpture obsolescent toward apex. Occipital carina barely discernible laterally.

In *T. nitidulus* (Walker) and *fuscicornis* (Walker), anterior margin of male scape is strongly produced forward, so the scape is strongly oblong in midsection, and proximal antennal segments reduced in size, anelliform.

BIOLOGY.— Parasitic on Diptera Cecidomyiidae in catkins of *Betula* (*nitidulus* (Walker) and *fuscicornis* (Walker)) and in *Picea* cones (*azureus* Boheman).

COMMENTS.— This subgenus unites *T. azureus* Boheman and species of Graham's *nitidulus*-group as sharing the following characters: (1) exceedingly elongate and virtually parallel-sided hind coxa; (2) reduced/absent shorter hind tibial spur; and (3) virtual absence of occipital carina on postgenae. The shorter hind tibial spur in *azureus* Boheman is notably and disproportionately reduced (barely longer than the apical setae on outer side of the tibia), and I regard this condition as nearer to that seen in the other two species than to the plesiomorphic state. An additional argument is in the evidence that the three species have Holarctic distribution, whereas very few species of *Torymus* occur in both regions.

COMPOSITION.— *azureus* Boheman, *fuscicornis* (Walker), and *nitidulus* (Walker).

MATERIALS EXAMINED.— *T. azureus* Boheman: 5♀, UKRAINE, Carpathian res., Kostylevka, 22.vii.1995 (Simutnik) (SIZK); 8♀, 2♂, UKRAINE, Chernigov obl., d/p Trostianets, ex *Picea* cones, coll. 3.iv.1969, em. 18.iv.1970 (Smetanin) (SIZK); 2♀, 1♂, Bot. garden of Acad. Sci., ex *Picea* cones, 25.vi.1965 (Zemkova) (SIZK); 5♀, 6♂, LATVIA, Dundarsky Leskhoz, *Picea* cones, 15.vii.1966 (Saxon) (SIZK); 1♀, same data (ZMAN); 1♀, LITHUANIA, Plunge, ex *Picea* cones, coll. 3.i.1971, em. 10.i.1972 (Milishauskas) (SIZK); 3♀, LITHUANIA, riv. Shilute, ex *Picea* cones, 1972 (Milishauskas) (SIZK); 2♀, 1♂, MOLDAVIA, Kapriany, garden, ex *Picea* cones (*Cydia strobilella*), 12–13.v.1971 (Plugaru) (SIZK); 44♀, 57♂, RUSSIA, Perm obl., v. Nijny Lukh, Ural fir, coll. 12.xi.1966, em. 15.xii.1966–15.i.1967 (Tsybulsky) (SIZK); 1♀, NETHERLANDS, Westervelde (Dr), 20.v.1970, (van Aartsen) (ZMAN); 1♂, NETHERLANDS, VELP (G) 21.v.1991 (Grijpma) (ZMAN).

T. fuscicornis (Walker): 1♀, NETHERLANDS, Hilversum kalkterrein, 3.vi.1971 (Gijswijt) (ZMAN); 1♂, NETHERLANDS, Hilversum kalkterrein, 13.v.1971 (Gijswijt) (ZMAN); 1♀, UKRAINE, Kiev, Hydropark, 4.v.1999 (Gumovsky) (SIZK); 2♀, 2♂, UKRAINE, Kiev, Theophania, iv.1968 (Zerova) (SIZK); 6♀, 13♂, UKRAINE, Kiev, Bot. garden of Acad. Sci. of UkrSSR, ex birch seeds, 1966–1968 (Zerova) (SIZK); 13♀, 1♂, UKRAINE, Chernomorsky Biosphere Reserve, Ivano-Rybalchansky area, 24–25.v.1991 (NN) (SIZK).

T. nitidulus (Walker): 4♀, 6♂, UKRAINE, Kiev obl., Obukhov distr., v. Pluty, 25.iii.1968 (Zerova); 2♀, UKRAINE, Kiev, Theophania, iv.1968 (Zerova); 1♀, 9♂, UKRAINE, Kiev, Bot. garden of Acad. Sci., coll. viii.1967, em. xii.1967–19.iii.1968 (Zerova); 2♀, ibid., birch seeds, 27.x.1973 (Zemkova); 8♀, 2♂, ibid., seeds of *Betula exilis*, coll. 9.x.1966 (Zerova) (all in SIZK).

Subgenus *Aretorymus* subgen. n.

Type-species: *T. calcaratus* Nees.

DIAGNOSIS.— M short; propodeum with robust, nearly symmetrical areolate-rugose sculpture.

DESCRIPTION.— Mandible with three teeth; stigma petiolate; scutellum without concentric costulae; M short; PM normal; metepisternal callus rough; parastigma normal; shorter hind tibial spur present and not reduced; hind coxa not elongate; posterior margin of gastral tergite 4 broadly emarginate; propodeal foramen low; median and submedian carinae not traceable on propodeum (see remarks below); anterior margin of hind coxa not angulate (broadly rounded); ocelli normal; F1 not elongate; pedicellus short; hind coxa carinate dorsally; frenal line distinct; hind femur with a strong tooth.

Body all over in large and close piliferous punctures (such punctures mark, in particular, the intermesepisternal suture); hind femur expanded with lower outer margin carinate, and bearing a strong tooth. Funicular segments with short and very dense sensilla. Propodeum with robust, nearly symmetrical areolate-rugose sculpture (so submedian carinae cannot form themselves as straight narrow grooves over the strongly rugged surface). Lower face with a row of what seems fused punctures running parallel to the lower margin of face at a short distance from it. Mesepimeron high (or rather, narrow): horizontal abscissa of metapleural suture stretches far beyond the point where anterior margin of mesepimeron meets it.

BIOLOGY.— Parasitic on Sphecidae and Apidae in hollow stems of *Rubus*, also in vacated cynipid galls on *Quercus* and, most probably, in other cavities appropriate for host nests.

COMMENTS.— This subgenus comprises two species of *Diomorus* of authors. The invention of a new name to supersede the traditional "Diomorus" was unavoidable because the type-species of *Diomorus* (*Diomorus nobilis* Walker, now *T. armatus* Boheman) falls outside of *Aretorymus* subgen. n., thus preoccupying "Diomorus" for the name of a taxon of its own.

COMPOSITION.— *calcaratus* Nees and *cupreus* (Spinola).

MATERIALS EXAMINED.— *T. calcaratus* Nees: 1♀, UKRAINE, Kiev, gardens, 18.vi.1972 (Marinchenko) (SIZK); 1♀, ARMENIA, pr. Eriwan, Mus. Armen. №11–24 (Schelkovnikow) (SIZK); 1♀, MOLDAVIA, Kishinev, 10.vi.1960 (V. Talitzky) (SIZK); 1♀, FRANCE, Fontaine de Vaucluse, 19.vi.1981, (Tschorsnig) (SIZK); 1♀, NETHERLANDS, St. Pietersberg, 13.vii.1995 (v. Aartsen) (ZMAN); 1♂, FRANCE, Dept. Vaucluse, Malaucene 1.viii.1973 (Gijswijt) (ZMAN).

T. cupreus (Spinola): 1♀, RUSSIA, Rostov obl., Aksaysky distr., v. Rassvet, 2.viii.1979 (Artokhin) (SIZK); 1♂, same data except 13.viii.1979 (SIZK); 1♀, UKRAINE, Donetsk obl., Slaviansky distr., v. Bogorodichnoe, 17.vii.1984 (Kotenko) (SIZK).

Subgenus *Torymus* Dalman s. str.

Callimome Spinola, 1811: 146-148. Type-species: *Ichneumon bedeguaris* Linnaeus. Designated by Curtis, 1835:552.

Misocampe Latreille, 1818: 213. Type-species: *Ichneumon bedeguaris* Linnaeus. Designated by Gahan & Fagan, 1923:91.

Torymus Dalman, 1820: 135; 178. Type-species: *Ichneumon bedeguaris* Linnaeus. Designated by Ashmead, 1904:242.

Misocampus Stephens, 1829: 395 [misspelling].

Syntomaspis Foerster, 1856: 43-44. Type-species: *Torymus eurynotus* Foerster (now *T. cyaneus* (Walker)). Designated by Gahan & Fagan 1923: 139.

T. armatus Boheman (species sola)

DESCRIPTION.— Mandible with three teeth; stigma petiolate; scutellum without concentric costulae; M normal; PM long, tapering to a vanishing point midway from junction of ST to apex of wing; metepisternal callus rough; parastigma intermediate; shorter hind tibial spur present and not reduced; hind coxa not elongate; posterior margin of gastral tergite 4 incised and broadly and shallowly emarginate; propodeal foramen low; median propodeal carina absent, submedian carinae distinct; anterior margin of hind coxa straight; ocelli normal; F1 not elongate; pedicellus short; hind coxa in males not carinate, in females with a weak and short dorsal carina shifted onto lateral surface; frenal line distinct; hind femur with a strong tooth.

Hind femur swollen, ecarinate, bearing a strong tooth. The nitid dorsal area of hind coxa delimited laterally by the dorsal carina (when present, in other species) is spreading a short distance on lateral surface of coxa in females. Funicular segments with short and very dense sensilla. Hind wing with a very weak remnant of cv.

BIOLOGY.— As in subgenus *Aretorymus*.

MATERIALS EXAMINED.— *T. armatus* Boheman: 1♀, UKRAINE, Carpathians, Chernogory, forest. stat., 6.viii.1994 (Simutnik) (SIZK); 1♀, UKRAINE, Volyn obl., road in forest N to v. Nevir, 17.viii.1998 (Kotenko) (SIZK); 1♀, UKRAINE, Kiev, Novoselki, 6.ix.1984 (Kotenko) (SIZK); 2♀, UKRAINE, Donetsk obl., Slaviansky distr., v. Bogorodichnoe, 17.vii.1984 (Kotenko) (SIZK); 1♀, UKRAINE, Odessa obl., Dunaiskie Plavni res., 14.viii.1996 (Kotenko) (SIZK); 2♀, RUSSIA Far East, Primorie, v. Kievka, ex cocoons *Osmia taurus*, 15.iv.1982 (Romankova) (SIZK); 1♀, 1♂, RUSSIA Far East, Primorie, v. Sokolovka, 25.iii.1982 (Romankova) (SIZK); 4♀, 2♂, RUSSIA Far East, Primorie, v. Benevskoe, 20.vi.1981 (Romankova) (SIZK); 1♀, 1♂, RUSSIA Far East, Yuzhnosakhalinsk, nr v. Lugovoe, 20.iii.1986 (Nesterov) (SIZK); 3♀, 1♂, RUSSIA Far East, Sakhalin Isl., nr v. Novoalexandrovsk, nest of *Crossocerus* sp. in stem of *Rubus* ex larvae, iii.1974 (Nesterov) (SIZK); 2♀, ibid., 20.iii.1986 (Nesterov) (SIZK); 1♀, ibid., 2.vii.1975 (Nesterov) (SIZK); 1♀, 1♂, ibid., 19.vii.1987 (Nesterov) (SIZK); 1♀, 1♂, ibid., 27.viii.1986 (Nesterov) (SIZK); 1♀, NETHERLANDS, Pietersberg, 21.vi.1990 (van Aartsen) (ZMAN); 1♂, NETHERLANDS, Nunspeet, 22.vi.1975 (van Aartsen) (ZMAN).

***T. kononovae* (Zerova & Seryogina)** (species sola)

DESCRIPTION.— Mandible with three teeth; stigma petiolate; scutellum without concentric costulae; M normal; PM intermediate, tapering to a vanishing point at about 1/3 the distance from junction of ST to apex of wing; metepisternal callus rough; parastigma normal; shorter hind tibial spur present and not reduced; hind coxa not elongate; propodeal foramen low; propodeum without median or submedian carinae; anterior margin of hind coxa straight; ocelli normal; F1 not elongate; pedicellus short; hind coxa not carinate dorsally; frenal line distinct; hind femur with a moderate tooth.

Hind coxa nitid dorsally in basal part, much like the state seen in *T. armatus* Boheman. Funicular segments with short and very dense sensilla. Disc of fore wing with infumate area expanding from stigma posterad.

BIOLOGY unknown. Associated with calcareous grounds. Site records are: Czech Republic, Bohemia Velky Vrestov (type locality of *T. pulcher* Bouček, a junior synonym of *T. kononovae* (Zerova & Seryogina)), Southern and Eastern Ukraine (steppe zone), and Kazakhstan (type locality).

COMMENTS.— This species might be united with *T. armatus* Boheman in one species group, both having the long and tapering PM and similarly sculptured hind coxa. However, *T. kononovae* (Zerova & Seryogina) has propodeum smooth and devoid of grooves or longitudinal striation, which prevents this grouping.

MATERIALS EXAMINED.— *T. kononovae* (Zerova & Seryogina): Holotype ♀, KAZAKHSTAN, nr Kokchetav, steppe with calcareous denudations, 21.vii.1987 (Kononova) (SIZK); 1♀, UKRAINE, Lougansk obl., Streltsovskaya Steppe res., 27.vi.1983 (Kotenko) (SIZK); 1♀, UKRAINE, Donetsk obl., Kamennye Mogily res., 14.vi.1983 (Kotenko) (SIZK).

***T. fastuosus* Boheman** (species sola)

DESCRIPTION.— Mandibles with three teeth; stigma petiolate, scutellum without concentric costulae; M and PM normal; metepisternal callus rough; parastigma not swollen; shorter hind tibial spur not reduced; hind coxa not elongate; posterior margin of gastral tergite 4 narrowly incised; propodeal foramen low; median propodeal carina traceable as raised line; submedian carinae not traceable; anterior margin of hind coxa straight; ocelli normal; F1 not elongate; pedicellus short; hind coxa without dorsal carina; frenal line distinct; hind femur occasionally with a very small tooth.

Propodeum finely reticulate. Sensilla on funicular segments extremely dense and short; flagellum notably stout, in males broadest at F2-F3.

BIOLOGY.— Parasitic on Cynipidae in *Quercus*.

MATERIALS EXAMINED.— *T. fastuosus* Boheman: 6♀, GEORGIA, Khodjori, coll. 2.ix.1974, em. 28.vii.1975 ex *Quercus* (Khodjevanishvili) (SIZK); 2♀, 1♂, same data (ZMAN).

Species group of *varians*

DESCRIPTION.— Mandible with three teeth; stigma petiolate; scutellum without concentric costulae; M and PM normal; metepisternal callus rough; parastigma normal; shorter hind tibial spur present and not reduced; hind coxa not elongate; posterior margin of gastral tergite 4 emarginate and incised; propodeal foramen high (fig. 12); median and submedian propodeal carinae absent; anterior margin of hind coxa straight; ocelli normal; F1 not elongate; pedicellus normal; hind coxa not carinate dorsally; frenal line distinct; hind femur without tooth.

BIOLOGY.— Phytophagous in seeds of Rosaceae; for some species (Nearctic *T. aea* (Walker) and *T. eurytomae* (Puzanova-Malysheva)) mixed feeding has been shown (Grissell 1976).

COMMENTS.— This species group is defined by the high position of propodeal foramen, additional supporting characters being circular shape of head, protruding parascrobal areas, and prevailing phytophagy.

I examined a series of *T. eurytomae* (Puzanova-Malysheva) in SIZK. They appear like large specimens of *T. druparum* Boheman or *T. varians* (Walker); I could not find any reliable differences between the three species except the host records.

COMPOSITION.— (Palaearctic species only) *aucupariae* (Rodzianko), *druparum* Boheman, *eurytomae* (Puzanova-Malysheva), *gracilior* Graham &

Gijswijt, *terentianus* Zavada, *varians* (Walker). *T. interruptus* Gijswijt may belong here.

MATERIALS EXAMINED.— *T. aucupariae* (Rodzianko): 1♀, UKRAINE, Poltava, ex rowan seeds, 15.vii.1899 (*Rodzianko*) (SIZK).

T. druparum Boheman: 1♀, MOLDAVIA, Kishinev, 30.v.1976 (V. & N. Talitskys) (SIZK); 4♀, 4♂, ibid., apple seeds, autumn 1958, (V. Talitsky) (SIZK); 1♀, ibid., 19.vii.1959 (V. Talitsky) (SIZK); 1♀, ibid., garden, 28.v.1958, (V. Talitsky) (SIZK); 1♂, MOLDAVIA, Rybnitsa, nr v. Belochi, open ravine slopes in deciduous forest, 13.vi.1967 (NN) (SIZK); 1♀, UKRAINE, Kiev, on windowsill, 4.iii.1986 (Zerova) (SIZK); 1♀, UKRAINE, Kiev, Teremki, 9.iv.1974 (Petrenko) (SIZK); 11♀, 3♂, UKRAINE, Kiev, Ukr. inst. for experimental horticulture, ?1959 (Zerova) (SIZK); 1♀, UKRAINE, Kiev, Goloseevo, 26.v.2000 (Zavada) (ZMAN).

T. gracilior Graham: 1♀, RUSSIA Far East, Sakhalin, Novoalexandrovsk, 7–27.viii.1986 (Nesterov) (SIZK); 1♀ paratype, FRANCE, Dépt. Gard, Crespion, langs Doulibre in struiken, 8.vi.1982 (Gijswijt) (ZMAN); 1♀, ITALY – Abr., Prov l'Aquita, Gran Sasso d'Italia, S.E. slope, 1400 m, 17.vi.1993 (Gijswijt) (ZMAN).

T. varians (Walker): 2♀, GERMANY, Schleswig, 18.vii.1961 (NN) (SIZK); 1♀, UKRAINE, Kharkov obl., 2 km down riv. Oskol, right bank of riv. Sev. Donets, forest, 12.vii.1982 (Kotenko) (SIZK); 1♀, UKRAINE Crimea, Luchistoe, pear, 3.vi.1989 (Shvedov & Lazarenko) (SIZK).

T. terentianus Zavada: 9♀ (entire type series), KAZAKHSTAN, Akmolinskaya obl., Shchuchinsk, ex seeds of *Cotoneaster melanocarpa* Lodd., 1997 (Gninenko) (SIZK).

Species group of *cyaneus*

DESCRIPTION.— Mandible with three teeth; stigma petiolate; scutellum without concentric costulae; M and PM normal; metepisternal callus rough; parastigma normal; shorter hind tibial spur present and not reduced; hind coxa not elongate; posterior margin of gastral tergite 4 entire; propodeal foramen low; median propodeal carina absent; submedian carinae distinct; anterior margin of hind coxa straight; ocelli normal; F1 normal; pedicellus short; hind coxa carinate dorsally; frenal line distinct; hind femur without tooth.

Body all over in large and dense piliferous punctures (although less close than in *cupreus*-group and not present at the suture dividing mesepisterna). Funicular segments with short and very dense sensilla. Propodeum with pre-spiracular carinae as shallow grooves.

COMMENTS.— No character may be selected as diagnostic for this group; such character might be the entire posterior margin of gastral tergite 4, but it is also observed in *Arctorymus* subgen. n.

BIOLOGY.— Parasitic on Cynipidae in *Quercus* (Graham & Gijswijt, 1998) and in *Rosa*.

COMPOSITION.— *brevicoxa* Zavada, *cyaneus* Walker, and *macrurus* (Förster). *T. montanus* (Zerova) may belong here (at the time I examined this species, I was not considering the present work).

MATERIALS EXAMINED.— *T. brevicoxa* Zavada: holotype ♀ and paratype ♂, TADJIKISTAN, Kondara, 24.iv.1980, em. 12.v.1980 ex galls of *Diplolepis* sp. on *Rosa* (Pljushch) (ZMAN)[7].

T. cyaneus Walker: 2♀, MOLDAVIA, Kotovsk distr., v. Rezeny, div. 432, 15.vi.1962 (Plugaru) (SIZK); 1♀, 4♂, RUSSIA, Leningrad obl., Tolmachevo, ex *Cynips divisa* on oak, 1.x.1960 (NN) (SIZK); 1♀, 2♂, MOLDAVIA, Kalfa, 26.v.1971 (Plugaru) (SIZK); 1♂, UKRAINE, Puscha Voditsa,

[7] Indication of its depository in Zavada (2001b) is incorrect.

2.?xi.1968 (Logvin) (SIZK); 1♀, 2♂, UKRAINE, Kiev, Darnitsa, ex galls *Cynips quercusfolii*, 24.iv-24.v.1974 (Rayevsky) (SIZK); 21♀, 10♂, RUSSIA, Prioksko-Terrsny res., *Cynips longiventris*, leaves, coll. iv.1982, em. 20–30.v.82 (Zerova) (SIZK); 2♂, UKRAINE, suburbs of Kiev, ex *Cynips quercusfolii* on oak, 4.vi.1955 (Zerova) (SIZK); 1♀, UKRAINE, Rakhov, meadow over gorge, 15.vii.1993 (Simutnik) (ZMAN); 1♀, NETHERLANDS, 's Graveland, gal *Cyn. longiv*., 23.v.1963 (Gijswijt) (ZMAN); 1♀, NETHERLANDS, 's Graveland, galls *Diplolepis divisa*, 26.iii.1957 (Gijswijt) (ZMAN).

T. macrurus (Förster): 1♀, 1♂, MOLDAVIA, Durleshty, garden 859, ex galls *Cynips quercusfolii*, v.1963 (Plugaru) (SIZK); 1♀, UKRAINE, Kiev, Darnitsa forest stat., oak forest, galls *Cynips quercusfolii*, 10.xi.1973 (Rayevsky) (SIZK); 6♀, UKRAINE, Kiev obl., Irpen, coll., 10.v.1974 (Diakonchuk) (SIZK).

Species group of *affinis*

DESCRIPTION.— Mandible with three teeth; stigma petiolate; scutellum without concentric costulae; M and PM normal; metepisternal callus rough; parastigma normal; shorter hind tibial spur present and not reduced; hind coxa not elongate; posterior margin of gastral tergite 4 incised; propodeal foramen low; median propodeal carina absent; submedian carinae indistinguishable amidst weak longitudinal striation on propodeum; anterior margin of hind coxa straight; ocelli normal; F1 not elongate; pedicellus short; hind coxa weakly carinate dorsally; frenal line distinct, though weak; hind femur without tooth.

M and SM broadening towards juncture of ST (fig. 13).

COMMENTS.— This group is close to the preceding one. Its incised gastral tergite 4 prevents merging of the two. I am not quite confident in separating this species group.

BIOLOGY.— As in *cyaneus*-group.

COMPOSITION.— *affinis* (Fonscolombe), *notatus* (Walker), and *cerri* (Mayr).

MATERIALS EXAMINED.— *T. affinis* (Fonscolombe): 1♀, UKRAINE, Uzhgorod (nr airport), coll. 24.x.91. em. iv.1991 ex galls *Biorhiza pallida* on *Q. robur* (Diakonchuk) (SIZK); 9♀, 20♂, UKRAINE, Kiev, Theophania, galls of *Biorhiza pallida*, 19.v.1974 (Zerova) (SIZK); 1♀, UKRAINE, Kiev, Novoselki, 4.v.1984 (Kotenko) (SIZK); 4♀, 2♂, UKRAINE, Kiev, Puscha Voditsa, ex galls of *Biorhiza pallida* coll. 10.vi.1984, em. 17.vi.84 (Zerova) (SIZK); 4♀, 3♂, UKRAINE, Kanev, iv.1954 (Zerova) (SIZK); 5♀, 12♂, ibid., 1.vi.1976 (Zerova) (SIZK); 20♀, 8♂, UKRAINE, Chernomorsky res., Solenoozerny area, *Biorhiza pallida*, em. 5.v.1974 (Zerova) (SIZK); 18♀, 8♂, UKRAINE, Chernomorsky res., Iv.-Rybalchansky area, 21.vi.1970 (Zerova) (SIZK); 1♀, 3♂, MOLDAVIA, Lozovo, garden, *Biorhiza pallida*, v.1972 (Plugaru) (SIZK); 1♀, MOLDAVIA, Golerkany, forest, 25.iv.1968 (Plugaru) (SIZK); 6♀, GEORGIA, Khodjori, oak, em. 28.vii.1975 (Khodjevanishvili) (SIZK); 1♀, AZERBAIJAN, v. Sarybash, 1,700 m, oak, galls of *Biorhiza pallida*, coll. 5.vii.1973, em. iii.1974 (Zerova) (SIZK); 1♀, NETHERLANDS, Vijlen (erbos) Lbg, galls *Bior. pallida* 19.ii.1993 (Gijswijt) (ZMAN); 1♂, NETHERLANDS, Overveen, 15.v.1970 (van Aartsen) (ZMAN).

T. notatus (Walker): 5♀, 3♂, UKRAINE, Kiev, Theophania, galls of *Andricus curvator*, 20.v–17.vi.1974 (Zerova) (SIZK); 2♀, UKRAINE, Kanev, reserve, oak, 1.vii.1976 (Zerova); 1♂, UKRAINE, Kiev, Theophania, ex galls of *Andricus curvator*, 20.v.1974 (Zerova) (SIZK); 1♀, same data (ZMAN).

Species group of *hederae*

DESCRIPTION.— Mandible with three teeth; stigma petiolate, ST strongly oblique; scutellum without concentric costulae; M and PM normal; metepisternal callus rough; parastigma intermediate; shorter hind tibial spur present and not

reduced; hind coxa not elongate (not so much, and not of the shape, as in *Lioterphus* species); posterior margin of gastral tergite 4 minutely incised; propodeal foramen low; median or submedian propodeal carinae not traceable; anterior margin of hind coxa straight; ocelli normal; F1 elongate; pedicellus normal; hind coxa carinate dorsally; frenal line absent; hind femur without tooth.

Base of scutellum very narrowly truncate, but not pointed; base of gaster more or less extensively testaceous; temples (length in dorsal view) extremely short; scape reaching well above anterior ocellus.

COMMENTS.— Although defined by a combination of characters, this group is good and does not have manifest synapomorphies except narrowed base of scutellum, somewhat swollen parastigma, and oblique and expanding ST which it shares with *Callimomus*.

BIOLOGY.— Parasitic on Cecidomyiidae on *Fagus*.

COMPOSITION.— *fagi* (Hoffmeyer)[8], *fagineus* Graham, *hederae* (Walker) and *speciosus* Boheman.

MATERIALS EXAMINED.— *T. fagineus* Graham: 2♀, UKRAINE, Transcarpathians, Carpathian Biosphere res., 1–11.viii.1994 (Simutnik) (ZMAN); 1♀, UKRAINE, Carpathians, Chernogory, forest stat., 6.viii.1994 (Simutnik) (ZMAN); 1♀, 1 {m}, FRANCE, Drôme, Lachau (1,200 m), 8 km E. Séderon, 15.ix.1989 (Gijswijt) (ZMAN).

T. hederae (Walker): 1♀, UKRAINE, Carpathian res., Malaya Ugolka, 27.vii.1995 (Simutnik) (SIZK); 2♀, Carpathians, Maramorosh, 11.viii.1994 (Simutnik) (SIZK); 1♀, Carpathians, Chernogory forest stat., Bily, 9.viii.1994 (Simutnik) (SIZK); 1♀, UKRAINE, Carpathian res., Burkut, nr office, 500–600 m 19.?x.1994 (Simutnik) (ZMAN).

T. speciosus Boheman: 1♀, MOLDAVIA (SIZK).

Species group of *iacchos*

DESCRIPTION.— Mandible with three teeth; stigma petiolate; scutellum without concentric costulae; M and PM normal; metepisternal callus rough; parastigma normal; shorter hind tibial spur present and not reduced; hind coxa not elongate (3–3.2 times as long as broad); posterior margin of gastral tergite 4 emarginate and incised; propodeal foramen low; median or submedian propodeal carinae not traceable; anterior margin of hind coxa straight; ocelli small and close to each other; F1 not elongate; pedicellus normal; hind coxa not carinate dorsally; frenal line not traceable; hind femur without tooth.

Anellus notably elongate and stout, approaching F1 in shape. Mesepimeron pointed apically.

COMMENTS.— This species is distinguished by its small and closely set ocelli.

T. anularius Szelényi, as far as can be inferred from its description, may fall together with *iacchos* Zavada in one species group. The following statements in Szelényi's description suggest their affinity: long anellus, coppery vertex, fine sculpture on face, gaster being (conspicuously) longer than thorax. Szelényi does

[8] According to Graham & Gijswijt's (1998) notes on this species, it may be conspecific with *T. speciosus* Boheman.

not refer to ocelli in *anularius* nor to its mesepimeron. At present I place *T. anularius* Szelényi together with *iacchos* with moderate confidence.

BIOLOGY.— Reared from galls of *Nipporhodites magna* Vyrzhikovskaya (Cynipidae) on *Rosa* sp.

MATERIALS EXAMINED.— *T. iacchos* Zavada: Holotype ♀: south-eastern KAZAKHSTAN, northern Tien Shan, Zailiysky Alatau, Pravy Talgar, 1,500–1,750 m, ex galls of *Nipporhodites magna* Vyrzhikovskaya on *Rosa* sp., 26.iii–19.iv.1973 (Antziferova & Mozolevskaya) (SIZK); 7♀, 2♂ paratypes, same data as holotype (SIZK); 1♀, 1 {m} paratypes, same data as holotype (ZMAN); 9♀ paratypes, locality, date and collector the same as of holotype but ex galls of *Diplolepis rosae* (L.) (SIZK); 4♀ paratypes, same locality but without host specification and 25.iv.1978, em. 25.v-1.vi.1978 (Pljushch) (SIZK); 14♀, 14♂ paratypes, same data except 2,300 m, ex galls of *Diplolepis rosae* (L.), 1973 (Lastochkin) (SIZK); 6♀, 4♂, same data as holotype (SIZK); 25♀, 10♂, same data as holotype but ex galls of *Diplolepis rosae* (L.) (SIZK); 5♀, 1♂, KYRGHYZSTAN, Tien Shan, Kyrghyz Alatau, 1,200 m, ex galls of *Nipporhodites* sp., 7.4.1974 (Ionov) (SIZK); 2♀, TADJIKISTAN, Kondara, ex galls of *Diplolepis* sp. on *Rosa canina* L., coll. 25.iii.1981, em. autumn 1981 (Zerova) (SIZK); 33♀, 19♂, same locality as holotype but 1,700 m, on *Rosa* sp., 8.v.1980 (Ermolenko) (SIZK); 3♀, 6♂, S-E KAZAKHSTAN, Alma-Ata reserve, *Rosa* sp., coll. 1.v.1978, em. 14–16.v.1978 (Pljushch) (SIZK); 4♀, 3♂, same data (ZMAN); 14♀, 20♂, KYRGHYZSTAN, canyon of Alamedin riv., 1,500 m, 13.iv.1980 (Eremchenko) (SIZK).

***T. apiomyiae* Bouček & Mihajlovič** (species sola)

(I have not seen this species.)

Species group of *chloromerus*

DESCRIPTION.— Mandible with three teeth; stigma petiolate; scutellum without concentric costulae; M and PM normal; metepisternal callus rough; parastigma normal; shorter hind tibial spur present and not reduced; hind coxa not elongate; posterior margin of gastral tergite 4 (sometimes deeply) emarginate; propodeal foramen low except for intermediate in *arundinis* (Walker); median or submedian carinae not traceable on propodeum; anterior margin of hind coxa straight; ocelli normal; F1 not elongate, sometimes short, approaching the condition of *Lioterphus* species; pedicellus normal; hind coxa not carinate dorsally; frenal line not traceable; hind femur without tooth.

COMMENTS.— The question whether any direct descendancy from this group may be asserted for any of the preserved groups and subgenera remains largely open. A cladistic analysis attempted on the data presented in Table 2 could not produce satisfactory results (most characters are parsimonially uninformative).

Another question, concerning the plesiomorphy of character states in *chloromerus*-species, finds more convincing answers in the evidences that the 'chloromerine' type is fairly similar to that of *Pseudotorymus* Masi, which genus is regarded as primitive in Torymoidini (see Grissell, 1995, p. 98 *ff.*).

Some species groups and species solae of Graham's are here included together with the 'core' *chloromerus*-species. Their morphological differences have been found to substantiate no consistently different concepts of a rank comparable to the preserved species groups. Reasons for each case are as follows.

arundinis.— The presence of hairs posterad to cv on underside of fore wing correlates well with ample overall pilosity of wing disc. Whatever its weighing,

it is not this that may support *arundinis* as a species sola. This species has fairly elongate hind coxa with weak sculpture, a state of propodeal foramen intermediate between normal and high, and hind tibial spurs (both) shorter than in the majority of *chloromerus*-species. It has also a peculiar host; all morphological differences of *arundinis* appear to be small homoplasies, and therefore this species should better be placed in *chloromerus*-group.

flavipes.— Two species, *flavipes* (Walker) and *longicalcar* Graham, have singularly long hind tibial spur. Apart from this, these species do not share any other character with each other; moreover, they appear quite dissimilar (*longicalcar* might be grouped with *stenus* Graham with as much confidence), which suggests an independent development of the long spurs and that these two species are probably paraphyletic.

nobilis.— Graham's group includes three species, *nobilis* Boheman, *roboris* (Walker), and *erucarum* (Schrank), all sharing the same hosts. The first two have pronounced deep violet tinge on body parts, which is the only remarkable difference they have among 'chloromerine' species. So long as coloration itself is a very unreliable character, this group of Graham's merges with *chloromerus*-group "by default".

pulchellus.— There are many species in *chloromerus*-group which more or less uniformly depart from the chloromerine morphological type in connection with their parasitizing hosts on *Salix*. Some (not all) of the most derived species are: (a) *lampros* Graham, *pulchellus* Thomson; (b) *curticauda* Graham & Gijswijt; (c) *giraudianus* (Hoffmeyer); (d) *impar* Rondani, *narvikensis* Graham & Gijswijt. All these have perceptible differences, between themselves as well as from the rest of *chloromerus*-species, but these differences scarcely yield objective characters. As Graham's *microcerus*-group is not more distinguished than *giraudianus* and allied species, their placement in *chloromerus*-group seems to be a quite satisfactory decision.

cingulatus.— The isolated position of this group is grounded largely on the character of pilosity of hind coxa, which in these species is bare. The instability of that character in several species (*e.g.*, *phillyreae* Ruschka) and within higher groups (as in *igniceps* Mayr and *laetus* (Walker), which have hind coxa, respectively, pilose and bare) suggests that it cannot be safely used at a higher than specific level.

COMPOSITION.— *aceris* Bouček, *amurensis* (Walker), *anastativorus* Fahringer, *angelicae* (Walker), *anthobiae* Ruschka, *arcadius* Graham & Gijswijt, *arcella* Graham & Gijswijt, *argei* Bouček, *artemisiae* Ruschka, *arundinis* (Walker), *auratus* (Müller), *basalis* (Walker), *bedeguaris* (L.), *boops* Graham, *borealis* Thomson, *bouceki* Graham & Gijswijt, *brachyurus* Boheman, *breviscapus* Graham & Gijswijt, *caledonicus* Graham & Gijswijt, *canariensis* Hedqvist, *capitonis* Graham & Gijswijt, *caudatulus* Graham & Gijswijt, *caudatus* Boheman, *centor* Graham & Gijswijt, *chlorocopes* Boheman, *chloromerus* (Walker), *cingulatus* Nees, *confinis* (Walker), *corni* Mayr, *crassiceps* Graham & Gijswijt, *cretaceus* Graham & Gijswijt, *cultratus* Graham & Gijswijt, *cultriventris* Ratzeburg, *cupratus* Boheman, *curticauda* Graham &

Gijswijt, *curtisi* Graham & Gijswijt, *curvatulus* Graham & Gijswijt, *cyprianus* Graham & Gijswijt, *eadyi* Graham & Gijswijt, *eglanteriae* Mayr, *epilobii* Graham & Gijswijt, *erucarum* (Schrank), *favardi* Steffan, *filipendulae* Graham & Gijswijt, *flavipes* (Walker), *flavovariegatus* Gijswijt, *formosus* (Walker), *fractiosus* Graham & Gijswijt, *frater* Thomson, *fuscipes* Boheman, *galeobdolonis* Graham & Gijswijt, *galii* Boheman, *genisticola* Ruschka, *geranii* (Walker), *giraudianus* (Hoffmeyer), *gloriosus* Graham & Gijswijt, *halimi* Graham & Gijswijt, *helveticus* Graham & Gijswijt, *heterobiae* Graham & Gijswijt, *heyeri* Wachtl, *hornigi* Ruschka, *hylesini* Graham, *impar* Rondani, *janetiellae* Graham & Gijswijt, *juniperi* (L.), *lampros* Graham, *lapsanae* (Hoffmeyer), *laricis* Bouček, *lathyri* Graham & Gijswijt, *lini* Mayr, *longicalcar* Graham, *luridus* Zavada, *lythri* Bouček, *microcerus* (Walker), *microstigma* (Walker), *micrurus* Bouček, *millefolii* Ruschka, *monticola* Graham & Gijswijt, *narvikensis* Graham, *nigritarsus* (Walker), *nobilis* Boheman, *novitzkyi* Graham, *orobi* Mayr, *paludum* Graham & Gijswijt, *partitus* Graham & Gijswijt, *pascuorum* Bouček, *pastinacae* Graham & Gijswijt, *persicariae* Mayr, *phillyreae* Ruschka, *poae* (Hoffmeyer), *problematicus* Graham & Gijswijt, *pulchellus* Thomson, *purpureae* Graham & Gijswijt, *putoniellae* Graham & Gijswijt, *pygmaeus* Mayr, *quadriceps* Graham & Gijswijt, *quercinus* Boheman, *ramicola* Ruschka, *rhamni* Bouček, *roboris* (Walker), *rosariae* Graham & Gijswijt, *rubi* (Schrank), *ruschkai* (Hoffmeyer), *salicis* Graham, *scandicus* Graham & Gijswijt, *schizothecae* Ruschka, *scutellaris* (Walker), *seminum* (Hoffmeyer), *silenus* Zavada, *socius* Mayr, *spaici* Bouček, *spherocephalus* Graham & Gijswijt, *spilopterus* Boheman, *stenus* Graham, *tanaceticola* Ruschka, *thymi* Ruschka, *tipulariarum* Zetterstedt, *ulmariae* Ruschka, *valerii* Graham & Gijswijt, *verbasci* Ruschka, *veronicae* Ruschka, *wachtliellae* Graham & Gijswijt.

The following Mongolian species most probably belong to this group: *cuprigaster* Szelényi, *subigneus* Szelényi.

MATERIALS EXAMINED.— *T. aceris* Bouček: 1♀, FRANCE – 13, Jouques, 14.v.1996 (Gijswijt) (ZMAN).

T. arcella Graham & Gijswijt: 1♀, UKRAINE, Danube delta, Isl. Stambulsky, 7.vii.1997 (Kotenko) (SIZK); 5♀, UKRAINE, Chernomorsky res., Ivano-Rybalchansky area, wormwood, 26.iv.1997 (Zerova) (SIZK); 3♀, same data (ZMAN).

T. artemisiae Ruschka: 2♀, TURKMENISTAN, Annau, galls on wormwood, em. 21.iv.1980 (Zerova); 1♀, 4♂, RUSSIA, Astrakhan obl., Elton, galls on wormwood, em. 6.viii.1979 (Zerova); 8♀, UKRAINE, Kiev obl., Obukhov distr., v. Stepki, galls on *Artemisia* sp., coll. 5.v.1979 (Pljushch); 5♀, 3♂, UKRAINE Crimea, Karadag, galls on *Artemisia* sp. (Dolin); 3♀, 3♂, UKRAINE, Chernomorsky res., Ivano-Rybalchansky area, galls on wormwood, 26.iv.1974 (Zerova) (all in SIZK).

T. arundinis (Walker): tens of specimens from Ukraine and Moldavia (SIZK); 1♀, 1♂, NETHERLANDS, Ankeveen, Bergse Pad (Z) 23.v.1971 (Gijswijt) (ZMAN); 1♀, Kyrkslätt, Reuter, 1931, (Hoffmeyer) (destroyed in shipping from ZMUC).

T. auratus (Müller): 249 specimens (119♀, 130♂) from many parts of Ukraine and from Georgia (SIZK).

T. basalis (Walker): 1♀, FRANCE - 84, Mt. Ventoux (Combe Brune), 30.viii.1996 (Gijswijt) (ZMAN).

T. bedeguaris (L.): More than 200 specimens from Ukraine, European USSR, Central Asia, Caucasus, and Russian Far East (SIZK).

T. canariensis Hedqvist: 127♀, UKRAINE Crimea, Karabi Yaila, clearing in beech forest, 4.vi.1961 (Ermolenko) (SIZK); 3♀, same data (ZMAN); 1♀, UKRAINE Crimea, reserve, 6.vi.1976 (Kotenko) (SIZK); 1♀, ARMENIA, Megrinsky distr., v. Lichk, oak forest in mountains, 1,800-1,900 m, 23.vi.1981 (Kotenko); 1♀, SPAIN, prov. Almeria, Carboneras, ex galls *Ptoelidaspidis tavaresiana*, 10.v.1994 (Gijswijt) (ZMAN); 1♂, same place, host unspecified, 21.iv.1990 (Gijswijt) (ZMAN).

T. caudatus Boheman: 1♂, RUSSIA, Perm obl., v. Nizhny Lukh, coll. 12.xi.1966, em. 15.xii.66–15.i.67 (NN) (SIZK); 2♀, LATVIA, Dundarsky leskhoz, 15.vii.1966 (Saxon) (SIZK); 4♀, 2♂, GEORGIA, Mestia (Upper Svanetia), on *Picea orientalis* ex *Kaltenbachiola strobi*, vii.1981 (Tvaradze) (SIZK); 2♀, 1♂, same data (ZMAN).

T. chloromerus (Walker): large series from various parts of Ukraine (SIZK); 1♀, FRANCE, Drôme, Saillans, 2.ix.1987 (Gijswijt) (ZMAN); 1♂, SWITZERLAND, Kiental, galls on *Phyteuma*, viii.1983 (van der Assem) (ZMAN).

T. cingulatus Nees: 1♀, NETHERLANDS, Ankeveen, Bergse Pad (Z), 23.v.1971 (Gijswijt) (ZMAN); 1♂, NETHERLANDS, 's Graveland, 23.v.1965 (Gijswijt) (ZMAN).

T. confinis (Walker): 11♀, 6♂, UKRAINE, Carpathian Biosphere res., Ugolsko-Shirokoluzhansky area, beech forest, coll. 31.vii.1999, em. 15–17.viii.99 ex galls on *Urtica dioica* (Zavada) (SIZK); 4♀, same data (ZMAN); 2♀, LITHUANIA, Vilnius, galls on nettles, coll. 11.x.1979 (Zerova) (SIZK).

T. cultratus Graham & Gijswijt: 1♀, UKRAINE, Chernomorsky res., Ivano-Rybalchansky area, 18.vii.2000 (Zavada) (SIZK); 1♀, UKRAINE] Chernomorsky Res., coast, reed stand, 24.iv.1974 (Zerova) (SIZK); 1♀, UKRAINE, Chernomorsky res., Volyzhin Les area, SW coast of Kinburnskaya Kosa 7.vii.2000 (Zavada) (ZMAN).

T. cultriventris Ratzeburg: 1♀, UKRAINE, nr Lvov, Pogulianka, ex galls *Mikiola fagi*, coll. vi.1952 (Zerova) (SIZK); 1♀, UKRAINE, Rovno obl., Ostrozh distr., 6 km N Shepetovka, Grabovy Bud, 24.vi.1999 (Kotenko) (ZMAN); 1♀, 1♂, NETHERLANDS, 's Graveland, galls *Mikiola fagi* 28.iii.1994 (Gijswijt) (ZMAN).

T. curticauda Graham & Gijswijt: 1♀, UKRAINE, Zakarpatskaya obl., vic. Rakhov, roadside willows along Tisa, 21.vii.1999 (Zavada) (SIZK); 1♀, same data (ZMAN); 1♀, UKRAINE, Zakarpatskaya obl., Carpathian Biosphere res., Chernogorsky area, 26.vii.1999 (SIZK).

T. eadyi Graham & Gijswijt: 3♀, 6♂, UKRAINE, Kiev, Teremki, raspberry, 20.iv.1982 (Kotenko) (SIZK); 3♀, same data (ZMAN); 4♀, 2♂, UKRAINE, Zakarpatskaya obl., Perechin, galls on raspberry, 13.iii.1977 (*Diakonchuk*) (SIZK).

T. erucarum (Schrank): 1♀, UKRAINE, Transcarpathians, Carpathian res., vic. Rakhov, along Tisa, sweeping in willows, 17.vii.1995 (Kotenko) (SIZK); 26♀, 21♂, Transcarpathians, Beregovo distr., Rafailovo, on roots of 1 to 3-yr oak trees, *Andricus testaceipes*, em. 25.iii.1975 (Boganich) (SIZK); 1♂, Transcarpathians, Vari, ex cynipid galls on roots of oaks, em. 17.vii.1976 (Boganich) (SIZK); 1♀, UKRAINE, Kiev, Puscha Voditsa, 29.vi.2000 (Maximovich) (ZMAN); 1♀, PORTUGAL, A. Alentejo, Portalegre, 700 m So S. Mamede, 22.v.1990 (Gijswijt) (ZMAN).

T. favardi Steffan: 1♀, FRANCE, Gard, Crespion, 28.viii.1986 (Gijswijt) (ZMAN).

T. filipendulae Graham & Gijswijt: 1♀, UKRAINE, Kanev, Mariina Gora, 12.vi.1999 (Gumovsky) (ZMAN).

T. flavipes (Walker): Hundred-odd specimens from Ukraine and Azerbaijan (SIZK); 1♀, FRANCE - 84, Mt. Ventoux S slope, 1,200 m, 1.ix.1990 (Gijswijt) (ZMAN); 1♀, NETHERLANDS, Ankeveen 4.vi.1966 (Gijswijt) (ZMAN).

T. flavovariegatus Gijswijt: 1♀, SPAIN, prov. Soria (Gijswijt) (ZMAN).

T. formosus (Walker): 1♀, UKRAINE, Lipetsk obl., Zadonsk distr., Galichia Gora res., 28.viii.2000 (Fursov) (ZMAN); 1♀, UKRAINE, Rakhov, 15.vii.1995 (Simutnik) (ZMAN).

T. fractiosus Graham & Gijswijt: 1♀ paratype, FRANCE, Vaucluse, Col de Perrache, em. 22.vi.1982 ex leaf-esge gall on *Rosa rubiginosa* (de V. Graham) (ZMAN).

T. galii Boheman: 1♀, NETHERLANDS, A. W. cluinen, ex galls *Geocrypta galii*, 1–10.vii.1963 (Gijswijt) (ZMAN); 1♀, UKRAINE, Lvov obl., Yavorov distr., Rostochie res., Zalivki, flooded meadows, forest, 21.vii.1996 (Gumovsky) (ZMAN).

T. geranii (Walker): Large series from Ukraine, European and Far East Russia, and Japan (SIZK); 1♀, 1♂, JAPAN, Ibaraki pref., Tsukuba, Sakuragaoka, em. 3.v.1997 ex galls on *Querqus* spp. (Fursov) (ZMAN); 1♀, RUSSIA Far East, Isl. Sakhalin, Gornozavodsk, 18.vi.1971 (Ermolenko) (ZMAN); 1♀, NETHERLANDS, Tongeren Gld. 8.vii.1992 (van Aartsen) (ZMAN); 1♂, NETHERLANDS, Haamstede, galls *Biorh. pallida*, 25.vi.1984 (Indenbosch) (ZMAN).

T. giraudianus (Hoffmeyer): 2♀, UKRAINE Crimea, Yalta, coll. ix.1986, em. ix.86 (Vasilieva) (ZMAN).

T. heyeri Wachtl: 1♀, UKRAINE, Carpathian res., Maramorosh, Kvasny, road to v. Ivan, young firs, 20.vii.1995 (Simutnik) (SIZK); 1♀, same data (ZMAN); 2♀, 3♂, UKRAINE, Kharkov obl., Krasnokutsk, dendropark, firs, 15.vi.1992 (Kotenko) (SIZK); 1♀, FRANCE Dépt. Drôme, Col de Soubeyrand, 29.vii.1978 (Gijswijt) (ZMAN); 1♀, SPAIN, prov. Madrid, Manzanares, El Real, on *Junip. oxyc.*, 15.vi.1990 (Gijswijt) (ZMAN).

T. impar Rondani: 1♀, UKRAINE, Zakarpatskaya obl., nr v. Hetyna, 20–30.vii.1999, ex cecidomyiid gall on *Salix* sp., em. i.2000 (Zavada) (SIZK); 2♂, same data (SIZK); 1♀, UKRAINE, Khersonskaya obl., nr. v. Vinogradnoye, 5.vii.2000 (Zavada) (SIZK); 1♀, same data (ZMAN); 1♀, ibid., 15.vii.2000 (Zavada) (SIZK) [holotype (first) and paratypes of *T. drewseni* Zavada]; 9♀, 7♂, TURKMENISTAN, Kopet-Dag, v. Nokhur, ex galls of *Asphondylia* sp. on *Astragalus*, coll. 18.v.1975, reared ix.1976 (Diakonchuk) (SIZK); 1♀, same data (ZMAN); 3♀, GEORGIA, Tbilisi, bot. garden of Acad. Sci. of Georgian SSR, ex galls *Astragalus caucasicus*, coll. 5.v.1978 (Khodjevanishvili); 1♀, NETHERLANDS, Otterlo (Gld.) 30.ix.1983 (van Aartsen) (ZMAN).

T. janetiellae Graham & Gijswijt: ?1♀, UKRAINE, Chernomorsky Biosphere res., Solenoozerny area, middle outpost, sweeping in steppe, 25.v.1991 (NN) (ZMAN).

T. juniperi (L.): 1♀, SPAIN, prov. Soria, 10 km S. Abejar, on *Junip. communis*, 22.vi.1994 (Gijswijt) (ZMAN); 1♂, SPAIN, prov. Madrid, Manzanares, El Real, on *Junip. oxyc.*, 15.vi.1990 (Gijswijt) (ZMAN).

T. lampros Graham: 1♀, UKRAINE, Lvov obl., Yavorov distr., Rostochie res., vic. v. Ivano-Frankovo, 17.vii.1996 (Gumovsky) (SIZK); 1♀, ibid., 23.vii.1996 (Gumovsky) (ZMAN); 1♀, UKRAINE, Odessa obl., Liabashev distr., v. Osychki, 14.vi.1995 (NN) (SIZK).

T. lini Mayr[9]: A series labelled thus, UKRAINE, Khomutovskaya Steppe res., Donetsk obl., *Linum austriacum*, coll. 20.iv.1974, em. v.74 (Gershenson) is in SIZK; of which 3♀ are ZMAN.

T. longicalcar Graham: Four specimens in SIZK and one in ZMAN, from a single series of minutien-pinned specimens stayed on pith block with hand-written illegible label, reasonably in German and indicating a year of 1910.

T. luridus Zavada: Holotype ♀, East. GEORGIA, Khodjori, 2.ix.1974, em. 28.vii.1975 ex *Quercus* (Khodjevanishvili) (ZMAN)[10].

T. microcerus (Walker): ?1♀, UKRAINE, Brovary, lake Rybnoe, ex galls *Rhabdophaga saliciperda* on willow, 13.iv.1973 (Zerova) (ZMAN).

T. microstigma (Walker): 3♀, MOLDAVIA, Kishinev, coll. 18.vi.1979, em. ex *Mas. marsupialis* 24.v (Talitsky) (ZMAN); a number of series of rearings from the same locality with varying dates exist in SIZK.

T. micrurus Bouček: 2♀, 1♂, UKRAINE, Odessa obl., Vilkovo/Zhebriyanskie Plavni, 15.v–5.vi.1996 (Maximovich) (ZMAN); a few more females and males of that series are in SIZK.

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[9] Listed material is presumably this species, which is placed in Species Inquirendae by Graham & Gijswijt (1998).
[10] Depository stated incorrectly in Zavada (2001b).

T. millefolii Ruschka: 1♀, UKRAINE, Chernomorsky res., Ivano-Rybalchansky area, 6.vii.2000 (Zavada) (ZMAN).

T. monticola Graham & Gijswijt: 1♀, UKRAINE, Carpathians, meadows over Tisa, 2.viii.1994 (Simutnik) (ZMAN).

T. narvikensis Graham: 5♀, UKRAINE, Khmelnitsky obl., Gorodotsky distr., v. Zakupnoe, 27.viii.1997 (Gumovsky) (SIZK); 1♀, same data (ZMAN).

T. nobilis Boheman: 1♀, HUNGARY, Drávapalkonya, 4.x.1973 (Heller) (SIZK); 1♀, GERMANY, Markgröningen, MSG Hannelrai, 1.vi.1981 (Bretzendorfer) (SIZK); 1♀, MOLDAVIA, v. Karneshty, 26.vi.1966 (Zerova) (SIZK); 1♀, MOLDAVIA, Kotovskoe, 29.vi.1960 (Talitsky) (SIZK); 1♀, UKRAINE, Carpathian res., 16.viii.1994 (Simutnik) (SIZK); 1♀, UKRAINE, Kiev, Puscha Voditsa, 29.vi.2000 (Maximovich) (ZMAN).

T. partitus Graham & Gijswijt: 1♀ paratype, NETHERLANDS, Langbroek, uit depot 139 *Rhabd. salicis*, coll. 29.ii.1968, em. 24.i.1969 on *Salix* ?*caprea* (Nijveldt) (NNML).

T. pascuorum Bouček: 1♀, UKRAINE, Carpathians, highland plains, 1.viii.1994 (Simutnik) (SIZK); 4♀, UKRAINE, Donetsk obl., Novoazovsk, 12.vi.2000 (Fursov) (SIZK); 1♀, UKRAINE, Lvov obl., Yavorov distr., Rostochie res., vic. v. Ivano-Frankovo, 17.vii.1996 (Gumovsky) (ZMAN).

T. phillyreae Ruschka: 2♀, UKRAINE, Khmelnitsky obl., Neteshin, rt. bank riv. Goryl, 29.vii.1999 (Kotenko) (SIZK); 1♀, ITALY, Portici-(Napoli), Park Agric. Inst., 10.iv.1991 (Fursov) (ZMAN); 1♀, UKRAINE Crimea, Karadag res., 14.vii.2001 (Zavada) (ZMAN).

T. poae (Hoffmeyer): 1♀, UKRAINE, Donetsk obl., Slaviansk distr., v. Bogorodichnoe, forest, 16.vii.1982 (Kotenko) (SIZK).

T. pulchellus Thomson: 1♀, UKRAINE, Zakarpatskaya obl., Tiachev distr., Bushtino, pastureland on Tisa, 17.vii.1999 (Zavada) (SIZK).

T. putoniellae Graham & Gijswijt: 1♀, MOLDAVIA, Kishinev, coll. 3.vii.1973, ex *Mas. marsupialis* em. 24.v (Talitsky) (ZMAN).

T. quadriceps Graham & Gijswijt: 1♀ paratype, FRANCE, Dépt. Drôme, Saou, natte wei, 29.viii.1981 (Gijswijt) (ZMAN); 1♀, HUNGARY -West, Apatistvanfalvi, 30.vi.1994 (Fursov) (SIZK); 1♀, UKRAINE, Carpathians, highland plains, 1.viii.1994 (Simutnik) (SIZK).

T. ramicola Ruschka: 1♀, UKRAINE, Chernomorsky res., Ivano-Rybalchansky area, 19.vii.2000 (Zavada) (ZMAN).

T. rhamni Bouček: 2♀, UKRAINE, Donetsk obl., Khomutovskaya Steppe res., ex fruits *Frangula*, coll. 24.vi.1977, em. 13.iii.1978 (Diakonchuk) (SIZK); 1♀, same data (ZMAN).

T. roboris (Walker): 1♀, MOLDAVIA, Karneshty, 30.vi.1961 (Bouček, Talitski) (SIZK); 1♀, UKRAINE, Kharkov obl., 2 km down riv. Oskol, rt. bank. riv. Sev. Donets, forest, 12.vii.1982 (*Kotenko*); 1♀, UKRAINE, Donetsk obl., Slaviansk distr., v. Bogorodichnoe, forest, 16.vii.1982 (Kotenko) (ZMAN).

T. rosariae Graham & Gijswijt: 2♀ paratypes, GERMANY, Lübeck (Waakenitz Ufer), *Rhabdophaga rosaria* & *heterob.*, i–iv.1981 (Meyer) (NNML); 18♀, 15♂, AZERBAIJAN, Shemakhinsky distr., Pirkuli, ex *Cecitomia rosae* on willow, 23.v.1972 (Zerova) (SIZK); 1♀, UKRAINE, Lvov obl., Yavorov distr., Rostochie res., Zalivki, flooded meadows, forest, 21.vii.1996 (Gumovsky) (ZMAN).

T. rubi (Schrank): Abundant material from Ukraine including Crimea; European and Far East Russia; Azerbaijan; Kirghizia; and the Caucasus.

T. ruschkai (Hoffmeyer): Large series from Russia (Ural), Georgia, Kazakhstan, and Ukraine.

T. silenus Zavada: holotype ♀, TADJIKISTAN, Anzob Pass (3,300 m) 2.vii.2000 (Perepechaenko) (ZMAN)[11].

[11] Depository stated in Zavada (2001b) is incorrect.

T. socius Mayr: 24♀, UKRAINE, Kiev, Theophania, galls on wild carrot, 9.ix.1973 (Zerova) (SIZK); 2♀, UKRAINE, Vinnitsa obl., Trostianets distr., Sobolevskoe forest stat., 20.vi.1966 (Zerova) (SIZK); 1♀, UKRAINE, vic. Kiev, Vorzel, 18.ix.1977 (Diakonchuk) (ZMAN).

T. stenus Graham: 1♀, UKRAINE, Carpathians, 29.vii.1994 (Simutnik) (SIZK); 1♀, UKRAINE, Lvov obl., Rostochie res., sweeping in mixed forest, 21.vii.1996 (Gumovsky) (SIZK); 1♀, UKRAINE, Kiev, Teremki, 18.v.1982 (Pshebelskaya) (SIZK); 6♀, UKRAINE, Kiev, Novoselki, oak wood, 23.vi–4.ix.1984 (Kotenko) (SIZK); 1♀, UKRAINE, Rovno obl., v. Voloskovtsy, 21.vi.1999 (Kotenko) (SIZK); 1♀, RUSSIA Far East, Isl. Kunashir, Tyatino, mixed forest, 7.ix.1978 (Ermolenko) (SIZK); 1♀, UKRAINE, Lvov obl., Rostochie res., vic. v. Ivano-Frankovo; adm. bldg., 23.vii.1996 (Gumovsky) (ZMAN); 1♀, UKRAINE, Babyn Yar vicinity, swept from vegetation consisted [sic] mainly of *Lotus* & *Trifolium* spp., 7.vi.1996 (Gumovsky) (ZMAN).

T. tanaceticola Ruschka: 1♂, UKRAINE, Kherson obl., Chernomorsky res., Ivano-Rybalchansky area, ex galls on flowers on *Tanacetum* sp., coll. 21.vii, em. 6.viii.2000 (Zavada) (SIZK); 1♀, 1♂, same data (ZMAN).

T. verbasci Ruschka: 1♀, 2♂, UKRAINE, Donetsk obl., Krasnolimansky distr., v. Krivaya Luka, 19.vii.1984 (Fursov) (SIZK); 5♀, 1♂, UKRAINE, Cherkassy obl., Kanev, scythian settlement, 11.vii.1982 (Zerova) (SIZK); 7♀, 5♂, ibid., *Verbascum phlomoides*, coll. 29.vii.1982, em. 1.viii.82 (Zerova) (SIZK); 2♀, UKRAINE, Kiev, Lysa Hora, ex *Verbascum thapsiforme* (syncarps), em. 23.i.1991 (Korneyev) (SIZK); 2♀, 2♂, ibid., coll. 31.iii.1982, galls *Verbascum* sp. (Berest) (SIZK); 2♀, 1♂, UKRAINE, Kiev, Theophania, mullein, coll. 2.v.1974 (Zerova) (SIZK); 3♀, 6♂, MOLDAVIA, Pridneprovie, Rybnitsa, coll. 6–10.ix.1997, ex cecidomyiid galls on *Verbascum*, 10.ix.1997 (Gumovsky) (SIZK); 1♀, same data (ZMAN); 3♀, 3♂, AZERBAIJAN, v. Baskal, 1,500 m, ex galls *Asphondylia verbasci* on mullein, coll. 1.vii.1973, выв. 8.vii.73 (Zerova) (SIZK).

T. wachtliellae Graham & Gijswijt: 1♀ paratype, FRANCE, Dépt Gard., Crespion, 22.vi.1982 (Gijswijt) (ZMAN); 1♀ paratype, FRANCE, Vaucluse, 19.ix.1990 (Gijswijt) (ZMAN); 3♀, UKRAINE, Lipetsk obl., Galichia Gora res., Morosova Gora, in folded leaves of dog rose, 28.vii.1980 (Fursov) (SIZK); 1♀, UKRAINE Crimea, Crimean res., nr outpost Asport, 2.vii.1976 (Kotenko) (SIZK); 1♀, 1♂, RUSSIA Far East, Primorsky Krai, 7 km toward Khasan, Golubiny Crag, 28.viii.1986 (Kotenko) (SIZK).

One species of the *chloromerus*-group, *T. drewseni* Zavada, is here synonymized with *T. impar* Rondani.

***Torymus impar* Rondani, 1877**

Torymus impar Rondani, 1877: 201–202; Bouček, 1974: 252–254; Grissell, 1995: 282.
Callimome bakkendorfi Hoffmeyer, 1933:246, ♀; Hellen, 1934: 188.
Torymus sp. near *borealis* Thomson; Graham, 1969: 62.
Torymus drewseni Zavada, 2001a: 85. **Syn. n.**

According to Mr. Gijswijt (pers. comm.), *drewseni* is conspecific with *T. impar* Rondani. As the holotype specimen of *drewseni* was reared from a cecidomyiid gall on *Salix*, the synonymy is evident; its paratypes, though, have apparently a different host (they were collected in Kherson oblast, Southern Ukraine, in a wormwood steppe locality with only shrubs of *Salix viminalis*; no galls could be seen on these in mid-July, when I collected two paratype specimens). In SIZK stands a series of *drewseni* reared from *Asphondylia* sp. (Diptera Cecidomyiidae) on *Astragalus* in Turkmenistan; these specimens are somewhat smaller in size than the holotype, but so is the specimen of *impar* I have received from Theo. As the 5th gastral tergite is more or less emarginate in the specimens of all series and in both *impar* and *drewseni*, I agree with the

opinion of Mr. Gijswijt and confirm the synonymy, stating new host-plant records for *impar*.

Cases like this are a regular source of nomenclatural disorder in *Torymus*, and have been such long since.

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References

Below is a list of some of the papers on the synonymy of the genus *Diomorus* Walker with *Torymus* Dalman, and recent reviews of Palaearctic and Nearctic faunas of *Torymus*. A comprehensive list of references on Palaearctic *Torymus* can be found in Graham & Gijswijt (1998); Grissell (1976, 1995) contain similar for the Nearctic region.

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