

SYSTEMATIC POSITION OF *FERONIA COGNATA* DEJEAN, 1831
(Coleoptera, Carabidae)

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HISTORICAL NOTES

In 1831 Dejean described *Feronia cognata* Dejean, 1831 (Dejean 1831: 765) as belonging to *Feronia* Latreille, 1816 (currently junior synonym of *Poecilus* Bonelli, 1810; Bousquet 2003). Seven years after, Chaudoir (1838) described *Pseudosteropus* Chaudoir, 1838 based on the type species “*Steropus? Schmidtii*” without to provide proper description for the latter. In 1847 Rosenhauer described *Pterostichus placidus* (Rosenhauer 1847: 8-9) from “Baldogebirg in Südtyrol”. He noted that the species has single dorsal setiferous puncture on stria 2 situated after the middle of elytra, comparing the new taxon with *Pterostichus illigeri* (Panzer, 1803). In the same paper, Rosenhauer noted that he possesses a beetle from “Krain” that belongs to very close to *Pt. placidus* species, citing it as “*Pt. Schmidtii* Kze.” (ibid: 9). In 1858 Schaum gave a description of *Pt. cognatus* Dejean and like the previous author used *Pt. illigeri* to complete the description (Schaum 1858: 484-485). This author notes that “his” *Pt. cognatus* has two dorsal setiferous punctures on elytra (ibid.). Also, Schaum states that *Pt. placidus* Rosenhauer and *Steropus schmidtii* Kunze i. l. are identical putting both in synonymy with *Pt. cognatus* Dejean (ibid.). Apparently, Schaum took this decision without to possess type material of first two species (cfr. Chaudoir 1868: 246). Six years after, Schaum changed his opinion, concluding that *Feronia cognatus* Dejean is male of *Feronia extensa* (currently valid as *Tapinopterus extensus* Dejean, 1831) (Schaum 1864: 143).

Thirty years after the description of *Pseudosteropus*, Chaudoir

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treated *Feronia cognata* and *F. schmidtii* Kunze as separate species and members of another his subgenus - *Haptoderus* Chaudoir, 1838 (Chaudoir 1868: 244-245). The author pointed out three differences between the two species and put the first one among the species with single dorsal setiferous pore on elytra, and the second one - among the species with two dorsal setiferous pores (ibid.). Also Chaudoir (ibid: 244-245) first noted that Dejean (1831) made mistake in the description of *Feronia cognata*, having in mind the number of the dorsal punctures on interval 3 of elytra. Judging from the Chaudoir's text, we suppose that the author made comparison between the types of *Feronia cognata* and *Steropus schmidtii*. On the other hand, Chaudoir has placed *Pterostichus placidus* Rosenhauer in synonymy with *F. cognata*, supposing that the type of Dejean did not come from "Hongrie" (type locality of *F. cognata*).

By all appearances, Chaudoir did not study type material of *Pterostichus placidus* and hence made incorrect conclusion. In 1876 Chaudoir reported that Frivadszky was sent him material from the Balkan Mt. [= Stara Planina Mt.] classified by the latter as *Haptoderus balcanicus* i. lit. (Chaudoir 1876: 345). Chaudoir discerned in that material *Feronia cognata* and once again stated that it is a good species and the Dejean's type locality "Ungarn" is "unrichtiges Vaterland" (ibid.). This time, however, basing on an unknown to us article of Kraatz published in 1870, Chaudoir concluded that *Feronia schmidtii* and *Pterostichus placidus* are probably separate species, again without to study the type of the latter (Chaudoir 1876: 345-346.). In 1885 Habelmann (1885) proposed the subgenus *Crisimus* Habelmann, 1885 for *Pterostichus placidus* and stated that this species and *Pt. schmidtii* are distinct species.

Ganglbauer is the first we know that noted lack of posterolateral seta on the pronotum of *Feronia cognata*, noting that this form comes from the Balkans (Ganglbauer 1889: 51-52). Interestingly but three years later, he put *Feronia cognata* in the genus *Pterostichus* Bonelli, 1810 (as only species of *Pseudosteropus*), but not in the genus *Tapinopterus* Schaum, 1858 to which it would belong according to the aforementioned peculiar character (Ganglbauer 1891: 279). In fact the "latter" Ganglbauer followed (ibid.) the earlier view of Schaum (1858: 484-485) for identity of *Feronia cognata* and *Steropus schmidtii*. In a third article discussing the same theme, Ganglbauer made the most detailed investigation on the status of *F. cognata* (Ganglbauer 1896:

465-466). Again he confirmed his later view for identity of *F. cognata* and *Steropus schmidtii*, and stated: "Aus demselben Grunde könnte auch *Feronia cognata* Dej. nicht auf *Tapinopterus Kaufmanni* m. bezogen werden. Ich bleibe daher bei der ursprüngl. Deutung der *Feronia cognata* Dej. und beziehe dieselbe auf *Feronia (Haptoderus) Schmidtii* Chaud."

In the XX century, Schatzmayr, the greatest specialist on the Western Palaearctic Pterostichini of that time, initially accepted the view of Ganglbauer (Schatzmayr 1929). Csiki (1930: 645) has also treated *Pterostichus cognatus* as only species of *Pseudosteropus*. In 1933 Müller expressed doubts about the identity of the form described by Dejean and the taxon cited as *Pterostichus cognatus* by the authors and suggested using of the name "*Schmidtii* Chaud." as for certain (Müller 1933: 209). In his well-known monograph on the genera *Pterostichus* and *Tapinopterus*, Schatzmayr has treated *Pterostichus schmidtii* as valid species and put *Pt. cognatus* in synonymy with it, noting that as questionable (Schatzmayr 1942: 79).

At present *Feronia cognata* is treating as senior synonym of *Pterostichus schmidtii* and is placed in subgenus *Pseudosteropus* of the huge Holarctic genus *Pterostichus* Bonelli, 1810 (Bousquet 2003; Vigna Taglianti 2004).

MATERIAL. Material from the following institutions has been examined: Muséum National d'Historie Naturelle, Paris, France (MNHN); National Museum of Natural History, Bulgarian Academy of Sciences, Sofia, Bulgaria (NMNHS); Zoological Institute, Russian Academy of Science, St. Petersburg, Russia (ZISP). m. = male specimen/s; f. = female specimen/s.

SYSTEMATIC PART

***Tapinopterus (Tapinopterus) cognatus* (Dejean, 1831), comb. nov.**

Feronia cognata: Dejean, 1831: 765

Pterostichus cognatus: Schaum, 1858: 484

Feronia cognata: Schaum, 1864: 143

Feronia (Haptoderus) cognata: Chaudoir, 1868: 244

Feronia (Haptoderus) cognata: Chaudoir, 1876: 345

Feronia (Haptoderus) cognata: Ganglbauer, 1889: 51

Pterostichus (Pseudosteropus) cognatus: Ganglbauer, 1891: 279

Pterostichus cognatus: Ganglbauer, 1896: 465

TYPE MATERIAL. Male holotype labelled: "*cognata* Dejean Hongrie Coll. Dejean." [handwritten label pinned on the bottom of the box]; specimen bears also two additional pinned labels: "*cognata* m. in Hungaria" / "D. Gén "; (MNHN, "Collection Chaudoir", box no 216 "*Argutor*"); see fig. 1.

REMARKS. The holotype has been compared with four syntypes (male lectotype and three female paralectotypes by present designation) of *Steropus schmidtii* Chaudoir, 1838 and was found that both taxa are not conspecific but belong to separate genera, *Tapinopterus* and *Pterostichus*, respectively. What is more, the study that the genitalia of the lectotype of *Feronia cognata* (figs 2-5) are identical with these of *Tapinopterus kaufmanni* Ganglbauer, 1896. The further studies of material from the whole species' range could add new data about the exact (subspecific) assignation of the holotype of *Feronia cognata*!

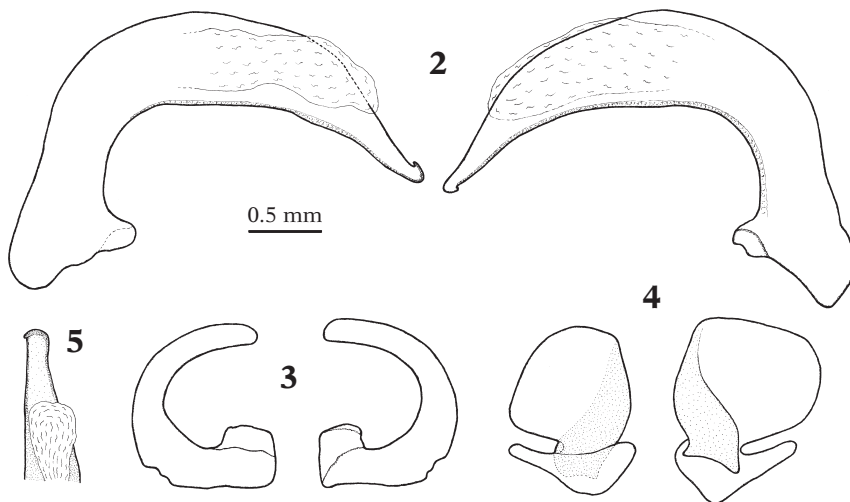
Reading the description of *Feronia cognata*, we found that it poorly fit with the specimen in hand concerning the part about the number and situation of the dorsal setiferous punctures in the interval 3 of the elytra. Dejean (1831: 765) has indicated two setiferous punctures, first one situated a little bit before the middle of elytra and a second one situated at the second third of elytra. In reality, the holotype of *Feronia cognata* has single dorsal puncture on each elytron situated in the first half of the posterior third of elytra. The Dejean's indication cannot be associates even with *Pterostichus schmidtii* (Chaudoir, 1838) since this species has first dorsal setiferous puncture situated far behind the middle of elytra (this peculiarity has already noted by M ller 1933: 209). Additional character which easily distinguishes both taxa in question is the presence / absence of medial setiferous puncture on the hind coxa. This feature presents in the holotype of *Feronia cognata*⁽¹⁾, and absent in *Pterostichus schmidtii*.

Prior to our study the holotype was kept in moderately well condition with available abdomen and genitalia not extracted as only the dorsal surface of pronotum was torn. During the boiling, the pronotum, abdomen and right hind leg disjoined. After the end of the study, three disjoined parts were glued to the specimen, and the genitalia were placed in a plastic vial pinned under the specimen.

⁽¹⁾ This character is typical for the genera *Speluncarius* Reitter, 1886, *Tapinopterus*, and some subgenera of *Pterostichus* close to *Cryobius* Chaudoir, 1838.



Fig. 1 – *Tapinopterus cognatus* (Dejean, 1831), holotype: photos of the Dejean's original labels.



Figs 2-5 – *Tapinopterus cognatus* (Dejean, 1831), holotype: left and right lateral view of median lobe of aedeagus (2); left and right view of right paramere (3); left and right view of left paramere (4); sketch of dorsal view of median lobe of aedeagus (5). Scale bar (for figs 2-4).

DISTRIBUTION. Southwestern Romania, Eastern Serbia, North Bulgaria (Stara Planina Range). The southern border of distribution of *T. cognatus* in Serbia and Bulgaria is not well-known.

***Tapinopterus (Crisimus) placidus* (W. Rosenhauer, 1847)**

- Pterostichus placidus*: Rosenhauer, 1847: 8
- Feronia (Haptoderus) placidus*: Chaudoir, 1876: 345
- Pterostichus placidus*: Ganglbauer, 1889: 51
- Tapinopterus (Crisimus) placidus*: Ganglbauer, 1891: 295
- Tapinopterus placidus*: Ganglbauer, 1896: 466

TYPE MATERIAL. Male holotype: labelled: "Er." [handwritten label] / "*Pterostich.*

placidus Er. Rsh. Tyrol" [handwritten label] (MNHN, ex-collection W. Rosenhauer, included in the former R. Oberthur's collection, box No 6 "*Poecilus...Brosicus*").

OTHER MATERIAL STUDIED. "Ganglbauer Piano della Fugazza", 1 ♂ (ZISP); "Campo grosso 18/VII . 02", 1 ♂ (ZISP); "Holdhaus Campo-grosso", 1 ♀ (ZISP).

REMARKS. The holotype of *Pterostichus placidus* was compared with the holotype of *Feronia cognata*. Both belong to the genus *Tapinopterus*, but are representatives of separate species and subgenera. In the ex-collection of W. Rosenhauer, we have found also three males of *Pterostichus cognatus* labelled: "*Platysma cognata* Dej Carinthia.". They are conspecific with the type series of *Steropus schmidtii* and certainly are identical with the material has cited as "*Pt. Schmidtii* Kze." (Rosenhauer 1847: 9).

DISTRIBUTION. Northeastern Italy.

***Pterostichus (Pseudosteropus) schmidtii* (Chaudoir, 1838),
stat. rest.**

Steropus Schmidtii: Chaudoir, 1838: 9

Pterostichus Schmidtii Kunze i.l.: Rosenhauer, 1847: 9

Steropus Schmidtii Kunze i.l. (as synonym of *cognata*): Schaum, 1858: 484

Feronia Schmidtii Kunze (as synonym of *cognata*): Schaum, 1864: 143

Feronia (Haptoderus) Schmidtii sic! (Kunze): Chaudoir, 1868: 246

Feronia (Haptoderus) Schmidtii sic!: Chaudoir, 1876: 345

Haptoderus Schmidtii sic!: Ganglbauer, 1889: 51

Pterostichus Schmidtii sic! (as synonym of *cognata*): Ganglbauer, 1891: 279

Pterostichus Schmidtii sic! (as synonym of *cognata*): Ganglbauer, 1896: 465

TYPE MATERIAL. Four syntype (male lectotype and three female paralectotypes by present designation) labelled: "*Schmidtii* Chaud. Carynthië" [handwritten label pinned on bottom of box]; (MNHN, "Collection Chaudoir", box no 216 "*Argutor*").

OTHER MATERIAL STUDIED. "Steiner Alp. Car., Schuster", 2 ♂♂, 4 ♀♀ (NMNHS).

REMARKS. In 1838 Chaudoir cited "*Steropus? Schmidtii*" and designated it for type species of the subgenus *Pseudosteropus* Chaudoir, 1838 as the author gave no proper description for this binomen (Chaudoir 1838: 9). Hence the binomen would be referred as "*nomen nudum*" or unavailable name. However, Article 12.2.6. of the International Code of Zoological Nomenclature states that "a combined description or definition of a new nominal genus and a sin-

gle new nominal species, which then provides an indication for each name irrespective of whether the names are stated to be new” is an “indication” (according to Article 12.2.) and all that is in agreement with Article 12.1. stipulating the requirements for the available names published before 1931 (ICZN 1999). In 1868 however, dealing with the same form, Chaudoir gave appropriate description for *Feronia (Haptoderus) schmidtii* (Kunze) (Chaudoir 1868: 246) and noted also that this taxon and *Feronia cognata* are separate species. The labeling of the type series of *Pterostichus schmidtii* is according to one of both localities indicated in that description (ibid: 247).

Not long ago, Bousquet established synonymy of *Plotus* Fischer von Waldheim, 1829 with *Pseudosteropus* Chaudoir, 1838 and stated that the first has precedence over the latter (Bousquet 2002: 178). On the other side, the author has suggested that the prevailing usage has to be maintained (ibid.) according to Article 29.9. (ICZN 1999). We also support that opinion.

DISTRIBUTION. Austria, Hungary, Italy, Slovenia, Croatia.

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SUMMARY

The type material of *Feronia cognata* Dejean, 1831, *Steropus schmidtii* Chaudoir, 1838 and *Pterostichus placidus* W. Rosenhauer, 1847 is examined. This action resulted into new combinations, new synonym, and restored status in terms of the genera *Pterostichus* Bonelli, 1810 and *Tapinopterus* Schaum, 1858: *Tapinopterus (Tapinopterus) cognatus* (Dejean, 1831), **comb. nov.** of *Pterostichus (Pseudosteropus) cognatus* (Dejean, 1831); *Tapinopterus (Tapinopterus) kaufmanni* Ganglbauer, 1896, **syn. nov.** of *Tapinopterus (Tapinopterus) cognatus* (Dejean, 1831); *Tapinopterus (Tapinopterus) cognatus transsylvanicus* Mandl, 1936, **comb. nov.** of *Tapinopterus (Tapinopterus) kaufmanni transsylvanicus* Mandl, 1936; *Tapinopterus (Tapinopterus) cognatus kalofirensis* Mařan, 1933, **comb. nov.** of *Tapinopterus (Tapinopterus) kaufmanni kalofirensis* Mařan, 1933; *Tapinopterus (Tapinopterus) cognatus winkleri* Mandl, 1936, **comb. nov.** of *Tapinopterus (Tapinopterus) kaufmanni winkleri* Mandl, 1936; *Steropus schmidtii* Chaudoir, 1838 removed from synonymy with *Feronia cognata* Dejean, 1831 and treated as valid species - *Pterostichus (Pseudosteropus) schmidtii* (Chaudoir, 1838), **stat. rest.** Lectotype and paralectotypes for *Steropus schmidtii* Chaudoir, 1838 are designated.

RIASSUNTO

La posizione sistematica di Feronia cognata Dejean, 1831 (Coleoptera, Carabidae).

Gli autori esaminano il materiale tipico di *Feronia cognata* Dejean, 1831, *Steropus schmidtii* Chaudoir, 1838 e *Pterostichus placidus* W. Rosenhauer, 1847. In seguito a questo esame vengono proposti, all'interno dei generi *Pterostichus* Bonelli, 1810 e *Tapinopterus* Schaum, 1858, i seguenti atti nomenclatoriali: *Tapinopterus (Tapinopterus) cognatus* (Dejean, 1831), **comb. nov.** per *Pterostichus (Pseudosteropus) cognatus* (Dejean, 1831); *Tapinopterus (Tapinopterus) kaufmanni* Ganglbauer, 1896, **syn. nov.** di *Tapinopterus (Tapinopterus) cognatus* (Dejean, 1831); *Tapinopterus (Tapinopterus) cognatus transsylvanicus* Mandl, 1936, **comb. nov.** per *Tapinopterus (Tapinopterus) kaufmanni transsylvanicus* Mandl, 1936; *Tapinopterus (Tapinopterus) cognatus kalofirensis* Mařan, 1933, **comb. nov.** per *Tapinopterus (Tapinopterus) kaufmanni kalofirensis* Mařan, 1933; *Tapinopterus (Tapinopterus) cognatus winkleri* Mandl, 1936, **comb. nov.** per *Tapinopterus (Tapinopterus) kaufmanni winkleri* Mandl, 1936; *Steropus schmidtii* Chaudoir, 1838 viene rimosso dalla sinonimia con *Feronia cognata* Dejean, 1831 e trattato come specie valida: *Pterostichus (Pseudosteropus) schmidtii* (Chaudoir, 1838), **stat. rest.** Vengono inoltre designati il lectotipo e i paralectotipi di *Steropus schmidtii* Chaudoir, 1838.

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