The **Julodinae Lac.** is a relatively small subfamily [*ca.* 100-150 known species in what seem to be just 2 (although some authors recognize as many as 6) genera – until the validity of, and relationships between, multitude of Palaearctic (esp. Near and Middle East) and Ethiopian nominal taxa are (variously!) guessed rather than reliably established, more exact estimation of the true diversity remains impossible], inhabiting almost all tropical and subtropical continental areas of the Old World. In the Indo-Pacific they are rather poorly represented by 6 unrelated (showing separate Palaearctic affinities) species of *Julodis Esch. (s.l.)* and 8 spp. of the endemic nominotypical subgenus of *Sternocera Esch.* The taxon comprises big or at least medium-sized, often (esp. *Sternocera Esch.*) brightly colourful or (esp. S-African *Julodis Esch. s.str.*) bizarrly pubescent species, many of which are rather common; moreover, larvae feed on roots of trees including those of economic importance, while size and appearance of adults attract the interest of not only buprestid specialists but also "general nature lovers" and even provoke collecting for commercial (jewellery, "souvenirs") purposes. And none the less their taxonomic structure remains poorly understood, available distributional data inexact and frequently erroneous, while knowledge about bionomy and phylogenetic relationships are almost totally lacking.

The present book – taxonomic, biogeographic and evolutionary revision of the S-Asian representatives of the subfamily – is an attempt to fill some of these gaps in our knowledge. The main part **[→CONTENTS]** is devoted to clarify the relationships between the included taxa; phylogenetic reconstruction has been performed for the only monophyletic subtaxon, *Sternocera Esch. s.str.* (using many proximal and remote out-groups), with the "iterative parsimony" program, MICSEQ; the results shown as genealogical tree, detailly described and discussed on the background of simultaneously developed hypothesis on the distributional history of the group.; largely refined and emended classification – with keys, full synonymy, morphological descriptions, geographical distribution (maps) and taxonomic, nomenclatural, distributional *&c.* remarks **[→example pages 18-19]**) – is proposed. One subgenus and one subspecies have been described as new, all species and all but one subspecies shown on 37 colour photographs **[→example tabs. 3-4]**. The introductory part (pp. 6-9) discusses the basic approaches, assumptions and conventions accepted in the book, while in the final chapter (**CONCLUSIONS** – pp. 72-75) some general concepts and hypotheses as applied to **Julodinae Lac.** are critically commented upon **[→example pages 72-73]**). List of quoted literature includes 97 publications.

CONTENTS

those in fifth (marginal) row are usually smaller and in fourth sometimes larger]. Abdomen and pronotum without distinct smooth reliefs (beyond normal reticulate-tuberculate background sculpture). Prescutellar depression shallow but large, usually tetragonal, extending to *ca.* pronotal midlength and often narrowly prolonged to near apical margin ..... ***J. (s. str.) whitehilli (Gray)***

11 (2) Elevated parts of pronotum evenly covered with isolated or but indistinctly confluent coarse punctures ..... [extralimital: Ethiopian]

12 (1) Supraantennal carinae prolonged anteromediad beyond apical margin of epistome and fused at acute angle to form a "wedge" dividing epistome into two parts

13(18) No lateral depressed dfp bands, pronotal sculpture consists of network of fine vermiculations, dense fine punctulation, or combination of both. Elytral costae inconspicuous

14(17) Elytra with 5 longitudinal rows of pulverulent dfp spots not confluent into continuous bands, or without any contrasting ornamentation

15(16) Pronotum with large, well defined, subtetragonal prescutellar depression extending to *ca.* midlength (sometines indefinitely prolonged anterad) ..... ***J. (s. str.) variolaris (Pall.)***

16 (15) Prescutellar fovea small, round, indefinite ..... [extralimital: Palaearctic]

17 (14) Elytra (at least apically) with longitudinal dfp bands ..... [extralimital: Palaearctic]

18 (13) Pronotum with three (along midline and along each side margin) broad longitudinal dfp depressions extending from base to apex; elevated midlateral parts evenly covered with isolated or but indistinctly confluent coarse punctures, and/or elytral costae prominent ..... [extralimital: circum-Saharan]

Julodis (s. str.) balucha Obb.

Julodis balucha Obenberger 1923a: 17

Julodis intricata semenovi Alexeev, Volkovitsh & Kabakov 1990: 63-64

Material examined:

Julodis balucha Obb.

Lectotype [hereby designated]: "Beludjistan, Sarawan" "COLLECTIO DR. OBENBERGER, MUS. PRAGENSE" "TYPUS" "*balucha m. Type*, Det. D[r] Obenberger" "Mus. Nat. Pragae, Inv. *19486*" [1 ø EONMP];

Paralectotypes: "Beludjistan, Sarawan" "COLLECTIO DR. OBENBERGER, MUS. PRAGENSE" "TYPUS" "*Julodis balucha m. Type*, Det. D[r] Obenberger" "14" [1 ø EONMP]; "Quetta District, E. Vredenburg" "COLLECTIO DR. OBENBERGER, MUS. PRAGENSE" "TYPUS" "*balucha m. Type*, Det. D[r] Obenberger" "Mus. Nat. Pragae, Inv. *19487*" [1 ø EONMP]

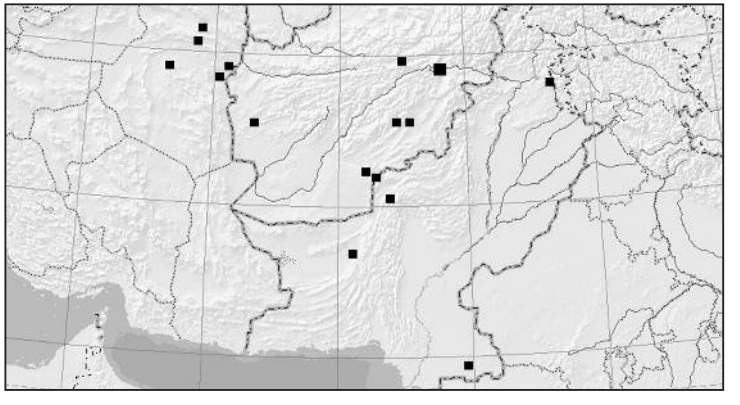
Additional material: 2 ♂, 2 ø

Characters:

Males [2] 19-23 mm., ♂♀ 23-25 mm. (Obenberger 1923a). Body short, robust; colouration dark-green or brown to almost black; dorsal pubescence short, recumbent, rather inconspicuous beyond dfp spots. Epistome undivided; front with conspicuous median relief and sometimes additional two at sides. Pronotum trapezoidal, sides in dorsal aspect nearly straight, anterior margin arcuate, hind margin deeply bisinuate; surface uneven, with broad prescutellar fovea, pair of obliquely transverse depressions at basal third, and very narrow dfp sulcus along each lateral margin; sculpture onsisting of dense punctulation between densely, almost evenly distributed, sharply elevated, small, smooth, irregularly confluent tubercles and seven (two pairs at anterior margin to both sides of each lateral sulcus, third pair before midlength near median line, and rather broad flat median ridge in basal half) larger reliefs. Elytral sides conspicuously, somewhat arcuately divergent to midlength, then broadly rounded to apices; surface finely and very densely punctulate in pubescent foveae (often of irregularly arrowhead-shape), coarsely and sparsely so on spaces ("mirrors") between them in rows, and finely and densely punctulate-tuberculate on remaining surface; each elytron with slightly indicated four paired and one (sutural) single striae between rows of foveae. Metacoxae with distinct mirrors.

Geographical distribution (map 1):

J. balucha Obb. inhabits mountainous areas from northeastern Persia (Khorassan) through Afghanistan to Pakistan (N-Beludjistan, Punjab).



Map. 1. Geographical distribution of *Julodis balucha Obb.*
Here and on other maps: small square [■] – single locality; large square [■] – more than two nearby localities; large circle [○] – general area (exact locality unknown)

lateral dfp patches on abdomen, reversal to simply pointed apex of ovipositor) evidently represents the result of south-eastward expansion of **C** (with subsequent re-conquest of northeastern and northern – S-China – areas).

Separation of southern populations of **K** has led to their transformation into *S. sternicornis (F.)* (with very conspicuous rows of dfp foveolae on somewhat more distinctly pubescent elytra), while in the beetles inhabiting northern parts of the Indian subcontinent foveolae disappeared, elytral sculpture became very fine, legs and (in some varieties) elytra non-metallic brown, resulting in **E**. Transformation of some populations (again difficult to locate on map) into *S. laevigata (F.)* consisted of hardly more than appearance of variants with conspicuous abdominal dfp patches, while fixation of non-metallic elytral colour, wide pale-brown margin on anal sternite, and very fine cuneate abdominal punctulation marked the evolution of **E** into **D**. Development of conspicuous pubescent patches on sides of sternites in subhimalayan regions produced *S. dasypleuros* Koll., whereas increase of size and appearance of black-bodied morph in lowland populations led to *S. chrysis (F.)*, what has finally established the recent relations.

Although *Sternocera* Esch. *(s.str.)* is, as regards morphology, remarkably homogeneous, apparently young group, the taxonomic relationships within the subgenus seem reasonably clear: only the distinction between *S. ruficornis* Snd. and *S. kerremansi* Kerr. may be difficult, otherwise interspecific differences are fine but usually stable and easy to interpret. The more remarkable is that wide internal variability in most species – with full gradation between smoothly continuous gradient of metallic colours or development of elytral foveolae to sharply (intermediates absent or very rare) defined morphs like *S. chrysis (F.) v. chrysidioides C.G.* or *S. laevigata (Ol.) v. basalis C.G.* – shows no apparent geographical pattern (the only significant exceptions being the concentration of *S. chrysis (F.) v. chrysidioides C.G.* at the western, and *S. chrysis (F.) v. nitidicollis C.G.* as well as *S. aequisignata* Snd. *v. multipunctata* Snd. at the eastern margin of their respective species distribution area). The contrast with the situation in palaearctic *Julodis* Esch. is striking: in the latter demarcation of species borders is often ambiguous, but intrapopulational variability is mostly negligible in comparison with geographical – subspecific – differentiation.

CONCLUSIONS

Comprehensive taxonomic, biogeographic and phylogenetic elaboration of a large group of organisms – like *e.g.* my reviews of the Indo-Pacific **Dicercina Gistl** (Hołyński 1998) and **Chrysochroina Cast.** (Hołyński 2009) – often leads to conclusions of general, theoretical and/or methodological relevance [see the introducing (: 11-29) and concluding (: 311-330) chapters of the latter work]; such a homogeneous, species-poor, continental taxon of relatively small area of distribution as *Sternocera* Esch. *s.str.* (to say nothing of the few unrelated south-Asian representatives of the predominantly extralimital *Julodis* Esch.) offers naturally much less opportunities to similar considerations. Nevertheless, some observations made in the course of this work seem also worth mentioning.

One of the important (even if not new) findings discussed in the above-mentioned publications was the relatively poor reliability of genital traits in phylogenetical reconstructions and supraspecific systematics. Providing usually useful diagnostic characters for identification of otherwise similar (especially sympatric) recent species, they become so fashionable "VIC's" that many insect taxonomists seem to become "genitalologists" rather than entomologists, treating the animal body as but an unwelcome complicating appendage to aedoeagi and ovipositors, and unfortunately (though understandably…) the reliance in high value of copulatory organs has been automatically extended to supraspecific classifications and reconstructions of phylogeny (recently similar "career" of "philosopher's stone" or "panacea for all problems" is being made by DNA sequences…). However, a while of thought is enough to realize that features differing between closely related species are – ***just therefore!*** – frequently misleading as markers of genealogical affinity! In the previous publications I focused on male – in (at least buprestid) taxonomy much more frequently used (and abused…) than female – genitalia, but just the **Julodinae Lac.** provide a nice illustration of similarly deceptive "behaviour" of structural details of ovipositor: the most prominent interspecifically variable trait, shape of apical spur of that (in these taxa heavily sclerotized) organ, may in *Julodis* Esch. *s.str.* and *Sternocera* Esch. be either simply pointed, or bifurcated, or trifid without any apparent relation to taxonomic or phylogenetic affinities – indeed, as expected in the case of a "socially selected" (West-Eberhard 1983) trait involved in SMRS (Specific Mate Recognition System), often unrelated species show virtually identical ovipositors while just next of kin sharply differ. So in the case of the pair of siblings *S. aequisignata* Snd. and *S. aurosignata* Ths. the former shows simply pointed apex while in the latter it is deeply bifurcated: apparently an example of Sympatric Character Displacement (SCD) between these otherwise hardly distinguishable species of extensively overlapping distribution.

Tab.3

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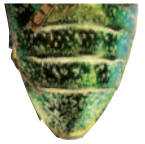
16. *Sternocera (s.str.) chrysis (F.) v. typ.* ♀ BPbfg dors. India: *ad* Nagpur: Gorewada tank
17. *Sternocera (s.str.) chrysis (F.) v. chrysidioides Gy.* lat. India: *ca*. 20 km. S Pune
18. *Sternocera (s.str.) chrysis (F.) v. chrysidioides C.G.* ♂ BPgxd dors. India: Andhra Pr.: Madhavaram
19. *Sternocera (s.str.) chrysis (F.) v. typ.* ♀ BPatf abdomen India: Coimbatore
20. *Sternocera (s.str.) chrysis (F.) v. nitidicollis C.G.* ♂ BPkmq dors. Bengale
21. *Sternocera (s.str.) dasypleuros* Koll. ♂ BPaxn dors.
22. *Sternocera (s.str.) dasypleuros* Koll. ♂ BPaxn lat.
23. *Sternocera (s.str.) laevigata* (Ol.) *v. basalis C.G.* ♀ BPbfm dors. India: *ad* Nagpur: Gorewada tank
24. *Sternocera (s.str.) laevigata* (Ol.) *v. basalis C.G.* ♀ BPbfm abdomen, India: *ad* Nagpur: Gorewada tank

Tab.4

25.



27.

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29.

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25. *Sternocera (s.str.) laevigata* (Ol.) *v. orientalis* (Hbst.) ♀ BPidi dors. India: Goa
26. *Sternocera (s.str.) laevigata* (Ol.) *v. typ.* ♂ BPhqz dors. India: Mysore: Shimoga
27. *Sternocera (s.str.) sternicornis (L.)* ♂ BPate abdomen, India: Coimbatore
28. *Sternocera (s.str.) sternicornis (L.)* ♂ BPate dors. India: Coimbatore
29. *Sternocera (s.str.) aequisignata* Snd. *v. multiguttata* Snd. ♂ BPaxr dors. Annam: Tourane
30. *Sternocera (s.str.) aequisignata* Snd. *v. typ.* ♀ BPfsz dors. Cambodja: distr. Angkor Thom: Preah Neak Pean