

Three new genera of fossil Lycidae from Baltic Amber

(Coleoptera, Lycidae)

By Josef R. WINKLER

Abstract

Palaeoentomology, taxonomy, nomenclature, Baltic amber; *Kolibacium* gen. n., type-species *Kolibacium balticum* sp.n.; *Hiekeolycus* gen. n., type-species *Hiekeolycus berendti* sp. n. („*Lycus elegans*“ nomen nudum); *Pietrzeniukia* gen. n., type-species *Pietrzeniukia kunowi* sp. n., Collections BERENDT, Künöw (Natural History Museum Berlin). Specific name of *Pseudaplatopterus scheelei* KLEINE, 1940 emended, *P. scheelei* emend. n. (= *P. ascheelei* sp. n., new synonym). Key to all hitherto known Baltic amber species of Lycidae. Anagenetic drift discussed.

Introduction

The topic of this communication is the taxonomic evaluation of three inclusions being a part of the large Baltic amber collection deposited in Natural History Museum of Humboldt University, Berlin, GDR, preliminarily assigned to the family Lycidae. (For information see HIEKE & PIETRZENIUK 1984.)

Each of these inclusions harbours a fossil beetle specimen virtually appurtenant to the family Lycidae (Elateriformia, Cantharoidea).

The specimens examined represent three distinct separate new genera of the (recent) tribe Dictyopterini.

These new genera display a set of remarkable peculiar characters enabling their reliable individual distinguishing, but also some common characters separating each of them from any of the known recent Lycid genera. (See e. g. KLEINE 1942, NAKANE 1969, WINKLER 1952 etc.).

Material and methods

All type specimens were examined, measured, pictured and described under stereomicroscope.

The pictures were performed by means of ocular grid.

The large set of black-white microphotographs, besides colour slides, not used within this paper, was obtained by means of direct coupling (without projective) of the stereomicroscope Carl Zeiss GSM and 35 mm camera Beirette vsn, fixed with a simple metal holder. Lighting: 2 bulbs 60 W, distance of each from the object ± 150 mm. Focussing: ∞ . Screen aperture: 2.8. Film: black-white Fomapan 21 F (21 DIN = 100 ASA) or colour reversal film for artificial light Orwochrom UK 17 (17 DIN = 40 ASA). Exposure time (for both films): 25 s. For earning of better contrast the alternation of black and white rests was practised, and in some cases the plastic clay was used for fixing the object in a suitable angle.

Acknowledgements

My sincere thanks are due first of all to Dr. Fritz HIEKE and Dr. Erika PIETRZENIUK, Natural History Museum (Naturhistorisches Museum) of Humboldt University, Berlin, GDR, for encouragement, hospitality and all help and assistance imaginable during my visits in Berlin Museum, to Dipl.-Ing. silv. Jiří KOLIBÁČ (Ostrava, Czechoslovakia) for his friendly offer to picture the drawings used here, to Dr. Roy A. CROWSON (The University, Glasgow, Scotland, Great Britain) for very valuable information and a generous gift of rare and important papers dealing with the major classification of fossil as well as recent Coleoptera, and to Dr. Roland GERSTMEIER, Zoological State Collection (Zoologische Staatssammlung), Munich, FRG, for his friendly cooperation in providing me with important literature accessible only with difficulties, and for his excellent editorial care.

All this needs to be thankfully acknowledged.

Key to hitherto known Baltic amber species¹⁾ of Lycidae

1. Pronotum without areolae, only with raised rib-like swell running obliquely from side margins to the middle, and with a feeble median furrow *Pseudaplatopterus scheelei*²⁾ KLEINE, 1942
- Areolae fully developed 2.
2. Pronotum with seven areolae (one rhombical discoidal, and six side areolae). Elytron between suture and huge humeral costa with six longitudinal rows of reticulate cells and five interstices, between humeral costa and epipleural margin with three longitudinal rows of reticulate cells and two interstices *Kolibacium balticum* gen. n., sp. n.
- Pronotum with five areolae (one rhombical discoidal, and four side areolae) 3.
3. Elytron between suture and huge humeral costa with three longitudinal rows of reticulate cells and two interstices, between humeral costa and epipleural suture with two longitudinal rows of reticulate cells and one interstice *Hiekeolycus berendti* gen. n., sp. n.
- Elytron anteriorly between suture and huge humeral costa with six longitudinal rows of reticulate cells and five interstices, in half of their length with four longitudinal rows of reticulate cells and three interstices, between humeral costa and epipleural margin with three longitudinal rows of reticulate cells and two interstices *Pietrzeniukia kunowi* gen. n., sp. n.

Kolibacium gen.n.

Type-species: *Kolibacium balticum* sp.n.

Derivatio nominis: Named in honour of Dipl.-Ing. silv. Jiří KOLIBÁČ as appreciation of his willing assistance. Neutral in gender. For differential diagnosis see the identification key and Table of basic meristic data.

Description

Tribe Dictyopterini. General bodyform elongated, flattened, with very prominent humeral costa on each elytron.

¹⁾ Unrevised unwarrantedly identified genera without described type-species, i.e. *Calopteron* (Dictyoptera), *Lygiostopterus* and *Lycus*, as cited by SPAHR (1981a) are not included. The latter genus, however (*Lycus elegans* BERENDT, nomen nudum), refers to *Hiekeolycus berendti* gen. n., sp. n.

²⁾ For nomenclature of the specific name see the appended Supplement.

Head prognathous, short and very wide, nearly as wide as pronotum, longest in the middle, with long and narrow median area, without antennal sockets. Antennae 11-segmented, short and relatively thick. Eyes large.

Pronotum wider than long, narrowest anteriorly, lateral margins nearly parallel, in two-thirds of its length widening. Hind corners blunt, robust, oblique, directed backward, basal margin concave in the middle. Seven areolae, a large rhombic discoidal areola touching the basal margin, not reaching to the apical margin, however, and three areolae on each side of the discoidal areola, developed.

Elytra covering fully abdomen, each elytron between suture and huge humeral costa with six longitudinal rows of reticulate cells and five flat, thin, insignificant interstices, epipleura very wide, with three longitudinal rows of reticulate cells and two flat indistinct interstices between humeral costa and epipleural margin.

Forelegs with relatively small tarsi, otherwise without peculiar taxonomic importance.

Kolibacium balticum sp.n.

(Figs 1, 4, 5, 6, 7)

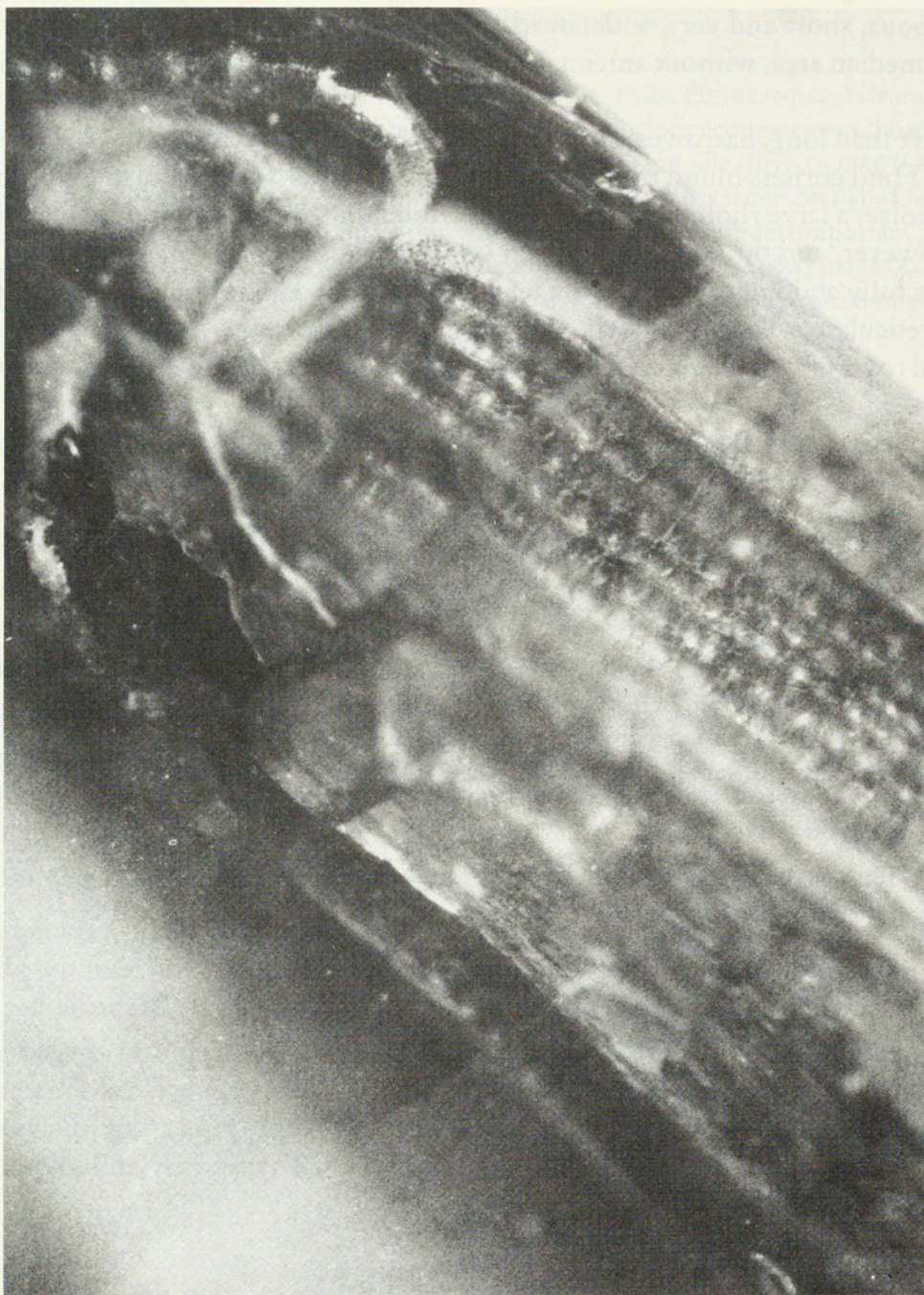
Type material: Holotype (sex undetermined), labelled*) as follows: MB, J. 516 / Lycidae, *Dictyopectera* sp. / det. Hieke 1983 // Slg. Berendt // designated here as holotype (red label:) *Kolibacium* / *balticum* gen.n., sp.n. / HOLOTYPE / J. R. Winkler det., 1987 // [printed, complemented with handwriting.]

Derivation nominis: balticus, -a, -um (Latin) = Baltic, after its geographical range.



Fig. 1: *Kolibacium balticum* gen. n., sp. n. Holotype. Situation of the beetle in edge of the amber inclusion, dorsal view. Plastic clay fixation.

*) The mark / means arrangement of lines on a label, the mark // individual labels, parentheses () serve for detailed characteristics of labels, and square brackets [] for various notices, etc.



4

Fig. 4: *Kolibacium balticum* gen. n., sp. n. Holotype. Dorsal view, pronotum and anterior part of elytra. Plastic clay fixation.

(Photograph by J. R. WINKLER)

Description

Body length: 6.5 mm.

Pronotum darkbrown, colouring of other bodyparts unascertainable (reflexion of amber).

Antenna inserted in the borderline between long and narrow median area and lateral part of cranium, very closely to its anterior margin. Scape longer than wide, somewhat cudgel-shaped, pedicel very short and wide, third, fourth, and fifth segments similar in shape, with increasing lengths and widths, sixth segment straight internally and convex externally, seventh segment nearly triangular, eighth slightly concave externally, ninth and tenth segments trapeziform, of similar shape and length, somewhat shorter than the eighth one, tenth segment conical, relatively short and stout. (For details see Figs 4, 5, 6, 7 and Table of basic meristic data.)

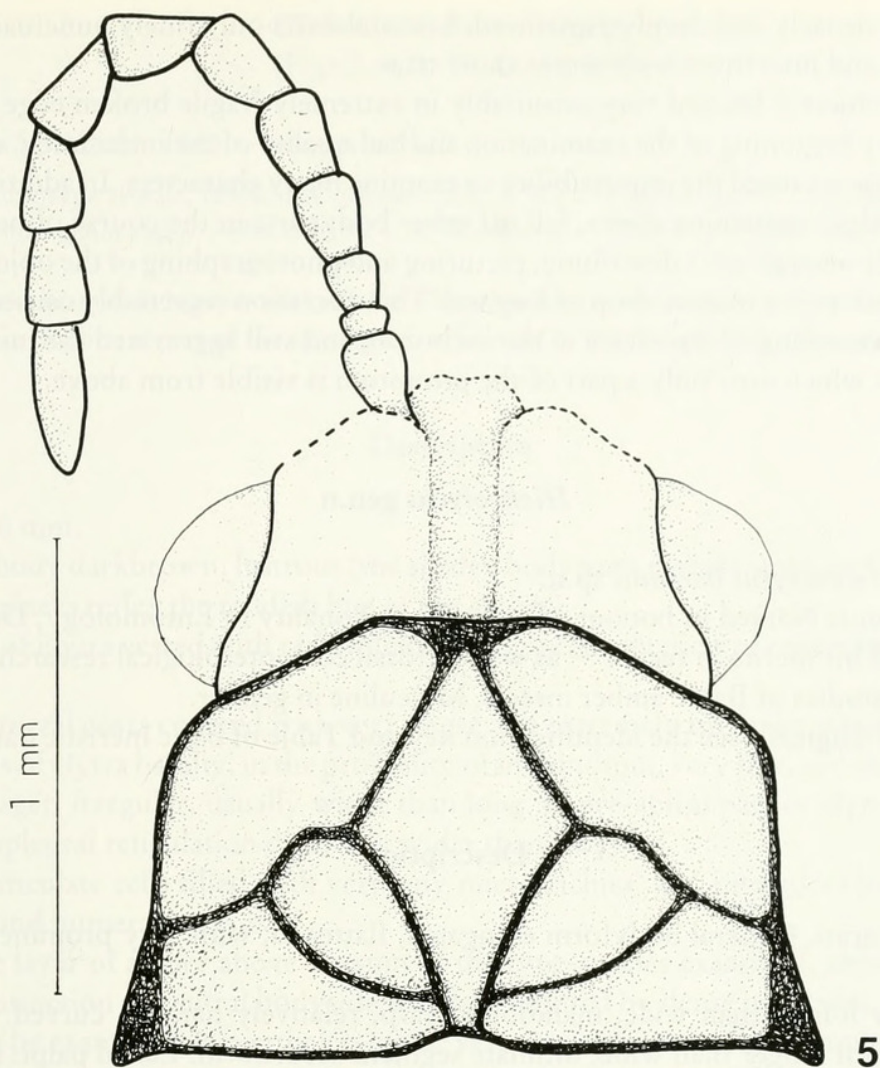


Fig. 5: *Kolibacium balticum* gen. n., sp. n. Holotype. Dorsal view, head and pronotum. Dashed line represents a presumed outline shaded by milkiness.

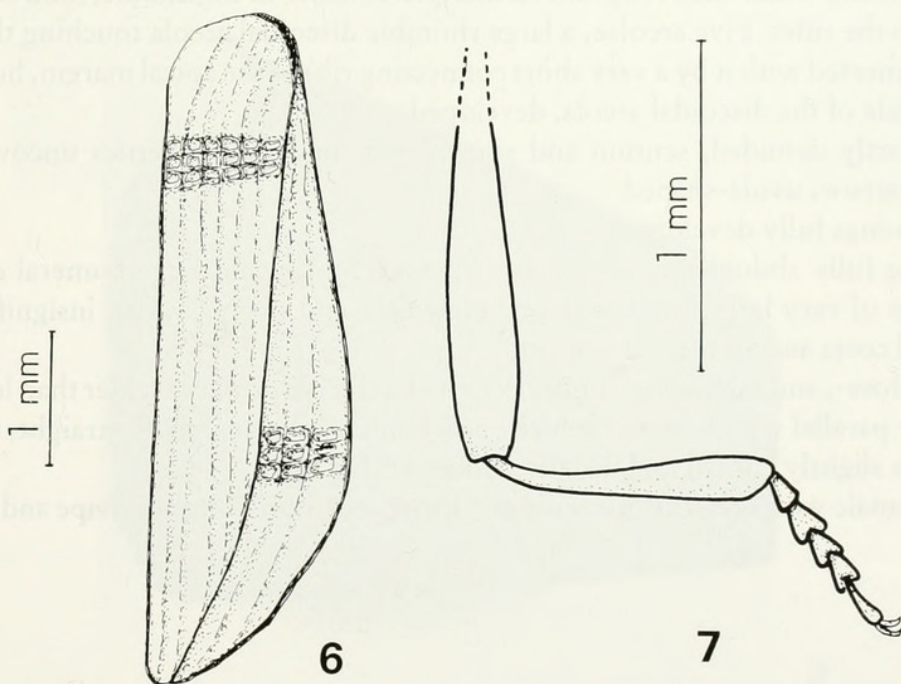


Fig. 6: *Kolibacium balticum* gen. n., sp. n. Holotype. Elytron, structure of elytral reticulation.

Fig. 7: *Kolibacium balticum* gen. n., sp. n. Holotype. Fore leg.

Humeral bulge densely and deeply punctured, humeral costa only finely punctuated or smooth. Reticulate cells and interstices with sparse short setae.

Remarks: The object is located very unsuitably in extremely fragile broken edge of the inclusion. Already at the very beginning of the examination the bad quality of the inclusion, i. e. broken surface jointly with milkiess caused the impossibility to examine many characters. In addition to that, a broken piece of the edge, containing elytra, fell off other bodyparts in the course of necessary manipulations, fortunately enough after describing, picturing and photographing of the object. The inclusion was pieced together with a minute drop of Euparal. This operation regrettably caused a total clearing, i. e. practically a vanishing of the elytra in the inclusion, and still aggravated the initial deterioration of the inclusion in which now only a part of the pronotum is visible from above.

Hiekeolycus gen.n

Type species: *Hiekeolycus berendti* sp.n.

Derivatio nominis: Named in honour of splendid personality in Entomology, Dr. Fritz HIEKE, in appreciation of all his merits in recent – as well as fossil coleopterological research, and encouragement to my own studies of Baltic amber insects. Masculine in gender.

For differential diagnosis see the identification key and Table of basic meristic data.

Description

Tribe Dictyopterini. General bodyform elongated, flattened, with very prominent humeral costa on each elytron.

Head distinctly longer than wide, mandibles sharp, relatively narrow, curved. Maxillary palpi: penultimate segment longer than wide, ultimate segment securiform. Labial palpi: ultimate segment very large, elliptically conical. Eyes relatively small, situated forwards, cranium very slightly narrowing immediately behind them, then widening again.*)

Pronotum distinctly wider than long, lateral margins concave in the middle, hind corners short and blunt, directed to the sides. Five areolae, a large rhombic discoidal areola touching the basal margin, not reaching (connected with it by a very short connecting rib) to the apical margin, however, and two areolae on each side of the discoidal areola, developed.

Mesonotum partly denuded, scutum and some other mesonotal sclerites uncovered, scutellum small, long and narrow, uvula-shaped.

Metathoracic wings fully developed.

Elytra covering fully abdomen, each elytron between suture and huge humeral costa with three longitudinal rows of very large, transverse reticulate cells and two thin, flat, insignificant interstices between humeral costa and epipleural margin.

Legs: coxae of fore-, and middlelegs longer than wide, coxa of hindlegs wider than long, trochanters elongated, nearly parallel with femora. In fore-, and hindlegs femora nearly straight, distally narrowing, in middlelegs slightly curved and distally widening (Fig. 12).

Abdomen in female with seven visible wide and short ventrites. For their shape and proportions see Fig. 13.

*) Antennae as well as ventral parts of head and thorax unobservable (very dense milkiess).

Hiekeolycus berendti sp.n.

(Figs 2, 8, 9, 10, 11, 12, 13)

"*Lycus elegans*" BERENDT, 1845 – nomen nudum.

Type material: holotype female, labelled as follows: MB, J. 517 / "*Lycus elegans*" / Slg. Berendt // (red label:) *Hiekeolycus* / *berendti* gen.n., sp.n. / HOLOTYPE / J. R. Winkler det., 1987 // [printed, complemented with handwriting].

Derivatio nominis: Named in honour of C. G. BERENDT, founder of the well-known collection of Baltic amber insects being now an important part of the aggregative collection in Natural History Museum, Berlin, GDR.

Description

Body length: 6 mm.

Colouring of body darkbrown, lustrous (the shaded bodyparts reveal the darkbrown colouring, the raised glittering places reflex the reddish hue of the amber).

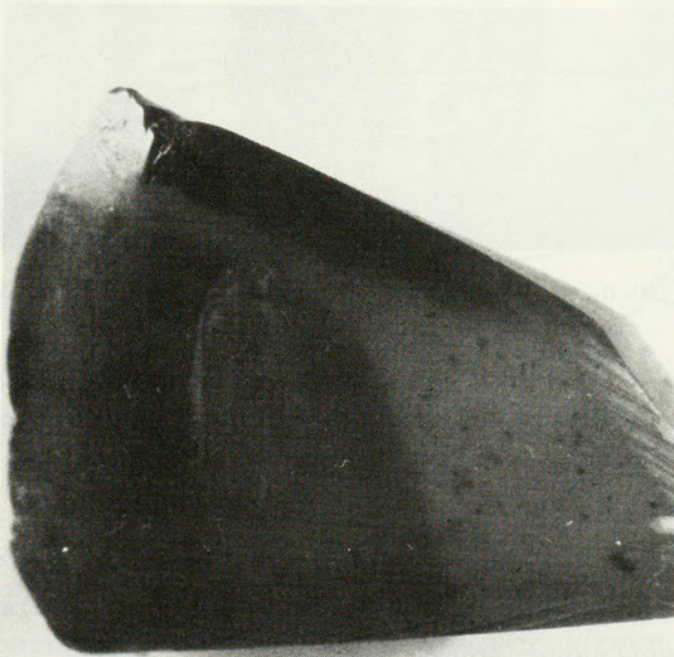
Humeral part of elytra vested with rather dense longer setae, setation of posterior part of elytra less distinct.

Suture and humeral costa covered with very dense and extremely tiny microtrichies.

Reticulate cells of elytra basally, in the proximity of mesonotum, very fine, not much wider than interstices, then larger, irregular, usually wider than long, in pre-apical part of elytra most of them as long as wide, epipleural reticulation distinctly wider than long.

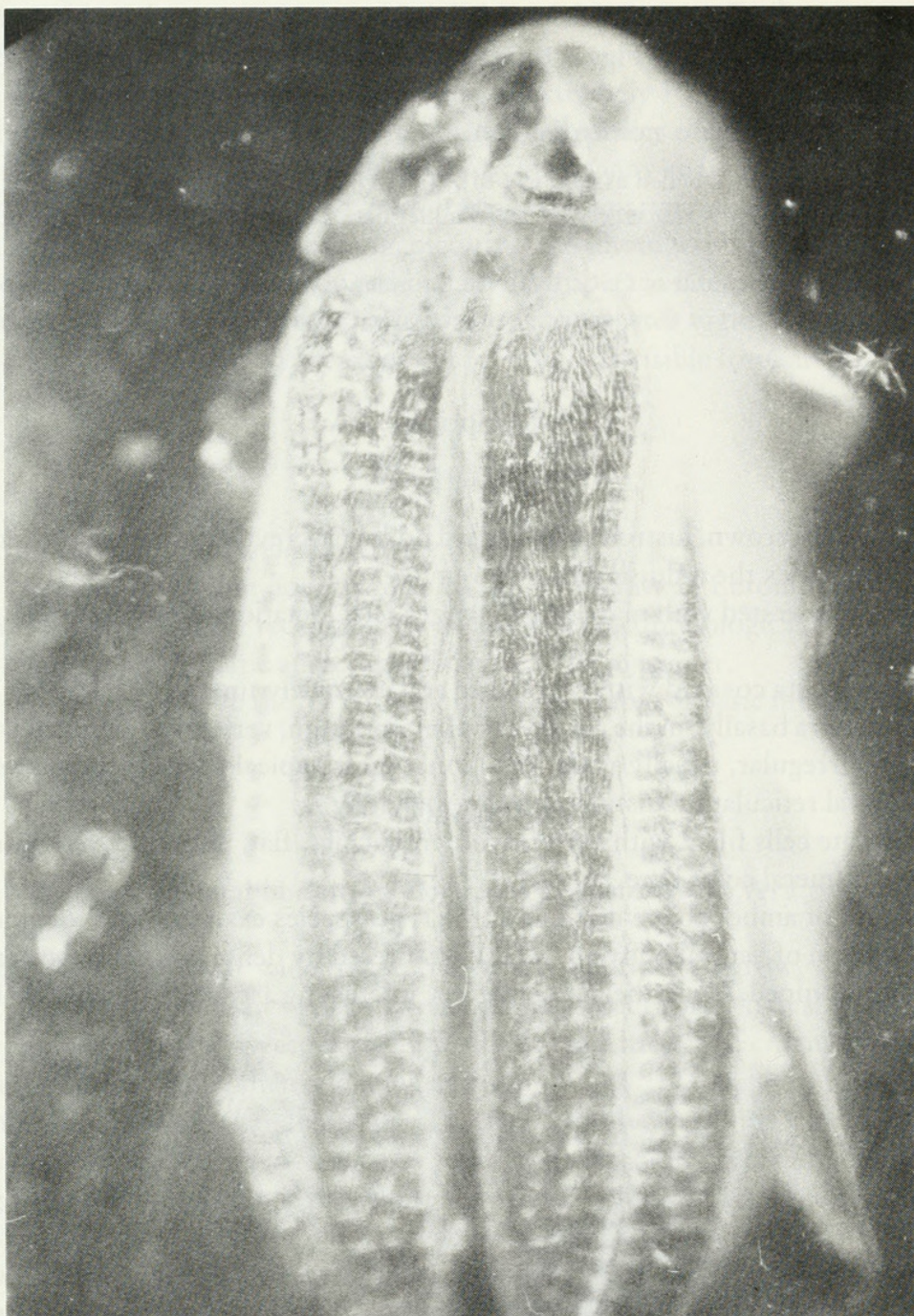
Most of the reticulate cells filled with very tiny microtrichies, flat, interstices in contradistinction of raised suture and humeral costa bare.

Remarks: The layer of amber above dorsum of the type-species examined, although dark, is very clear in contradistinction of ventral bodyside which is suffered by dense milkiness, so that many characters could not be examined. Nevertheless, some very interesting ascertainments could be done, i. e.



2

Fig. 2: *Hiekeolycus berendti* gen. n., sp. n. Holotype. Situation of the beetle in amber inclusion, dorsal view. White rest.



8

Fig. 8: *Hiekeolycus berendti* gen. n., sp. n. Holotype. Dorsal view.

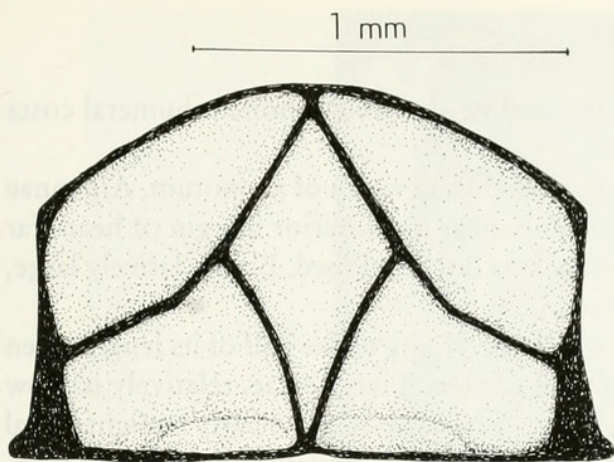
(Photograph by J. R. WINKLER)

the sex determination, the statement that the mesosternum also in this genus is denuded (even when less distinctly than in following new genus) etc. As regards the hidden characters, concretely the articulation of the antennae, the absence of the antennal sockets is presumed.

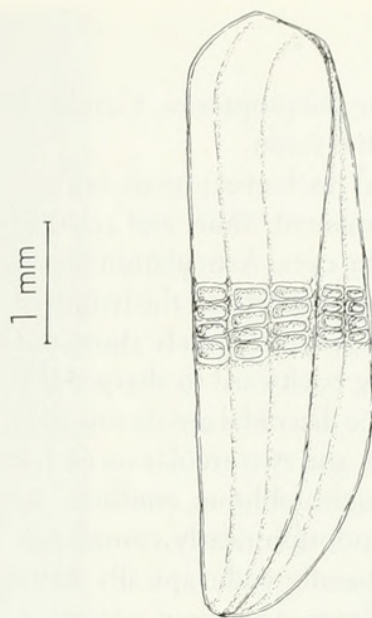
Pietrzeniukia gen.n.

Type-speciess: *Pietrzeniukia kunowi* sp.n.

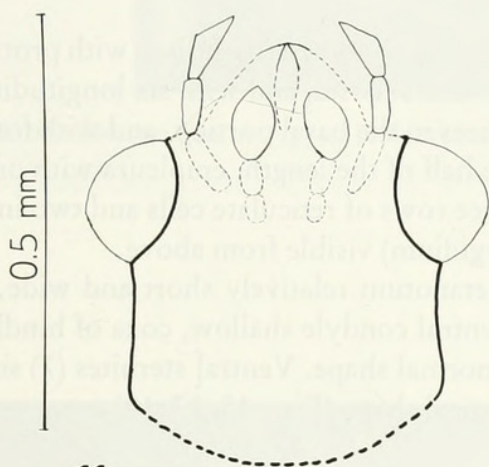
Derivatio nominis: Named in honour of Dr. Erika PIETRZENIUK, Palaeontologist and Curator of the Baltic amber collection in Natural History Museum, Berlin, GDR, for her generous hospitality and many-sided support of my study of Baltic amber Coleoptera. Feminine in gender. For differential diagnosis see the identification key and Table of basic meristic data.



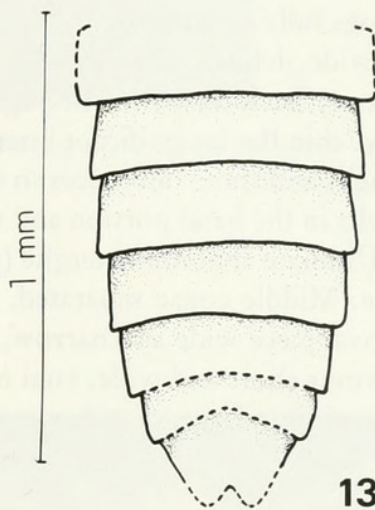
9



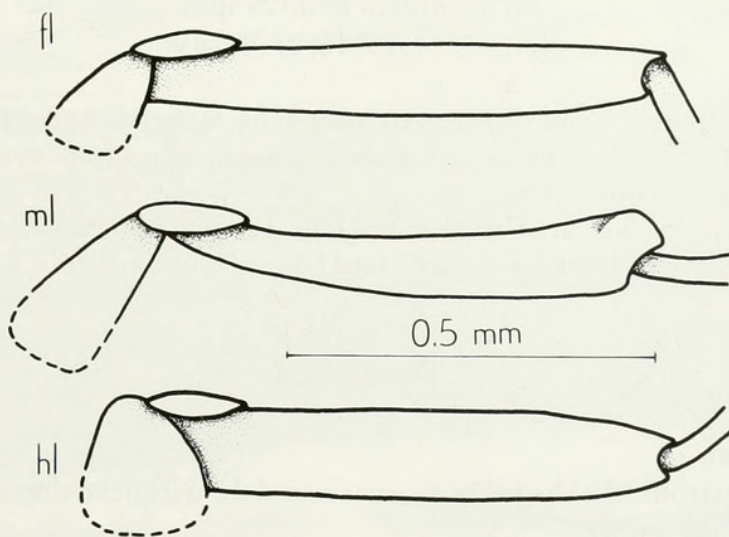
10



11



13



12

Figs 9–13: 9 *Hiekeolycus berendti* gen. n., sp. n. Holotype. Pronotum; 10: *Hiekeolycus berendti* gen. n., sp. n. Holotype. Elytron, structure of elytral reticulation; 11 *Hiekeolycus berendti* gen. n., sp. n. Holotype. Head, ventral view. Dashed line represents a presumed outline shaded by milkiness; 12 *Hiekeolycus berendti* gen. n., sp. n. Holotype. Legs, fl-fore leg, ml-middle leg, hl-hind leg; 13 *Hiekeolycus berendti* gen. n., sp. n. Holotype. Visible ventrites. Number of ventrites reveals the female sex of the specimen. Dashed line represents a presumed outline shaded by milkiness.

Description

Tribe Dictyopterini. General bodyform elongated, flattened, with very prominent humeral costa on each elytron.

Head (incl. eyes) small, twice wider than long, much narrower than width of pronotum. Antennae 11-segmented, short and relatively thin, articulating medianly near the anterior margin of head, far from the eyes. Articulation place small and flat, antennal sockets not developed. Eyes relatively large, occupying nearly all the length of the lateral margins of cranium.

Pronotum extremely short and wide, lateral margins widely diverging to the half of its length, then running backward to sharp and thin backward directed hind corners. Five areolae, relatively narrow rhombic discoidal areola touching in the middle slightly concave basal, as well as nearly straight apical margin, and two areolae on each side of the discoidal areola, developed. Rib dividing both lateral areolae straight, oblique, confluent with lateral margin above hind corners.

Mesonotum nearly completely denuded, displaying scutum composed of two sclerites, scutellum large, basally wide, apically narrowing. Also some other mesonotal sclerites uncovered. No substantial difference between sclerotization and pigmentation of scutum and scutellum developed.

Metathoracic wings fully developed.

Elytra relatively wide, dehiscent^{*)}, not fully covering abdomen (pygidium with protrusive ovipositor visible from above), each elytron with huge humeral costa, and with six longitudinal rows of reticulate cells and five thin flat insignificant interstices in the basal portion, and with four longitudinal rows of reticulate cells and three interstices in the half of the length, epipleura with one longitudinal row of reticulate cells in the basal portion and three rows of reticulate cells and two interstices in the half of the length. Ultimate abdominal tergite (pygidium) visible from above.

Ventral bodyside: Middle coxae separated, metanotum relatively short and wide, smooth, with sparse setae, antecoxal piece wide and narrow, ventral condyle shallow, coxa of hindlegs small, trochanter elongate, femur short and wide, tarsi of normal shape. Ventral sternites (7) similar in shape, wide and narrow, pygidium large, of a characteristic shape (Figs. 15, 17, 19).

Pietrzeniukia kunowi sp.n.

(Figs 3, 14, 15, 16, 17, 18, 19)

Type material: holotype female, labelled as follows: Coll. Künow M.B., J. 519 / det. Hieke 1983 / 1 Expl. // Col. Lycidae / det. Hieke 1983 // (red label:) *Pietrzeniukia / kunowi* gen.n., sp.n. / HOLOTYPE / J. R. Winkler det., 1987 // [printed, complemented with handwriting].

Derivatio nominis: Named in honour of above named founder of the Baltic amber collection being now a part of the aggregative collection of insect inclusions in Natural History Museum, Berlin, GDR.

Description

Body length: 6.5 mm.

Body darkbrown, lustrous (the shaded bodyparts reveal the darkness, the raised glittering places reflex the reddish hue of the amber).

Antennae slender and relatively long, reaching beyond humeral part of elytra, very densely vested with tiny microtrichies. Scape large, bent, cudgel-shaped, pedicel small, longer than wide, third,

^{*)} A natural condition? See the short thickened elytral margins, double number of longitudinal rows of reticulate cells and very wide epipleura (Fig. 18)



Fig. 3: *Pietrzeniukia kunowi* gen. n., sp. n. Holotype. Situation of the beetle in amber inclusion, dorsal view.
Black rest. (Photographs by J. R. WINKLER)

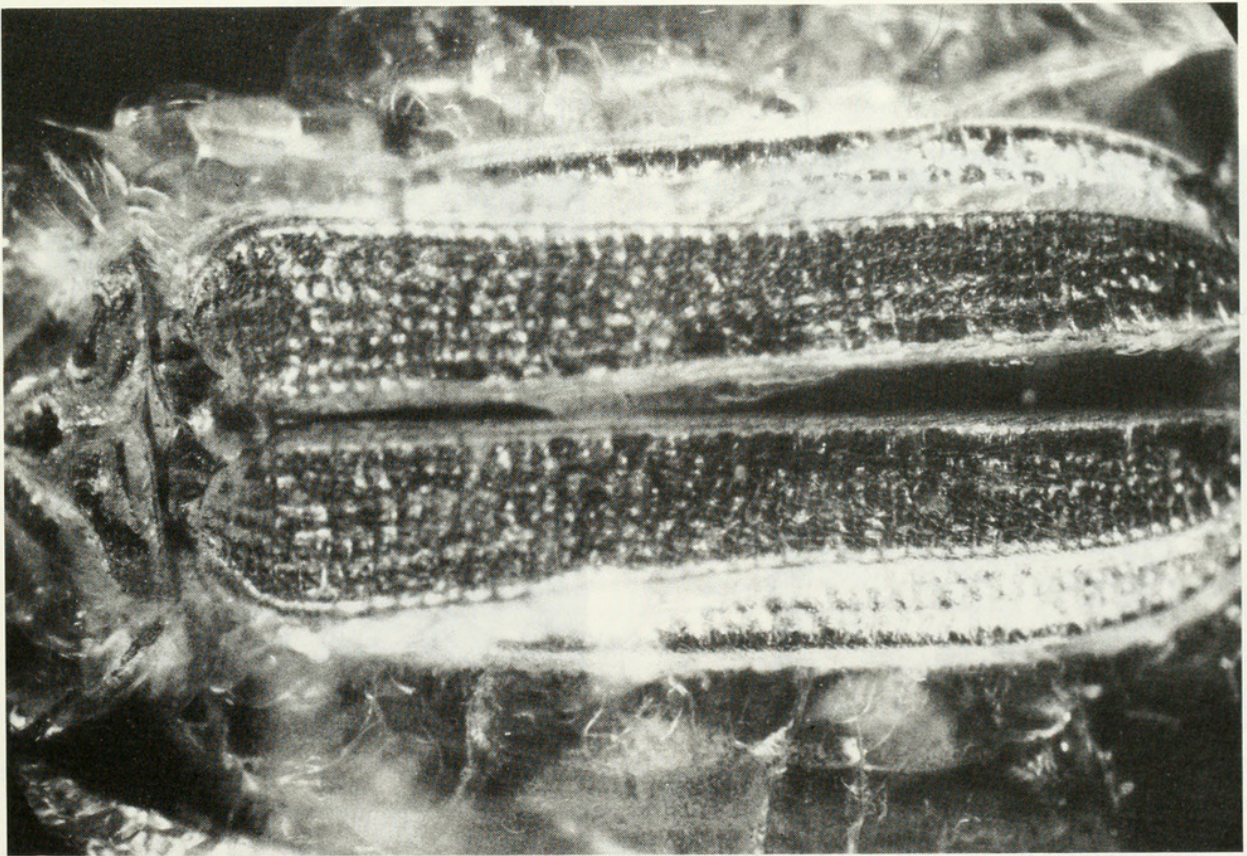


Fig. 14: *Pietrzeniukia kunowi* gen. n., sp. n. Holotype. Dorsal view.



15

Fig. 15: *Pietrzeniukia kunowi* gen. n., sp. n. Holotype. Ventral view.

(Photographs by J. R. WINKLER)



16

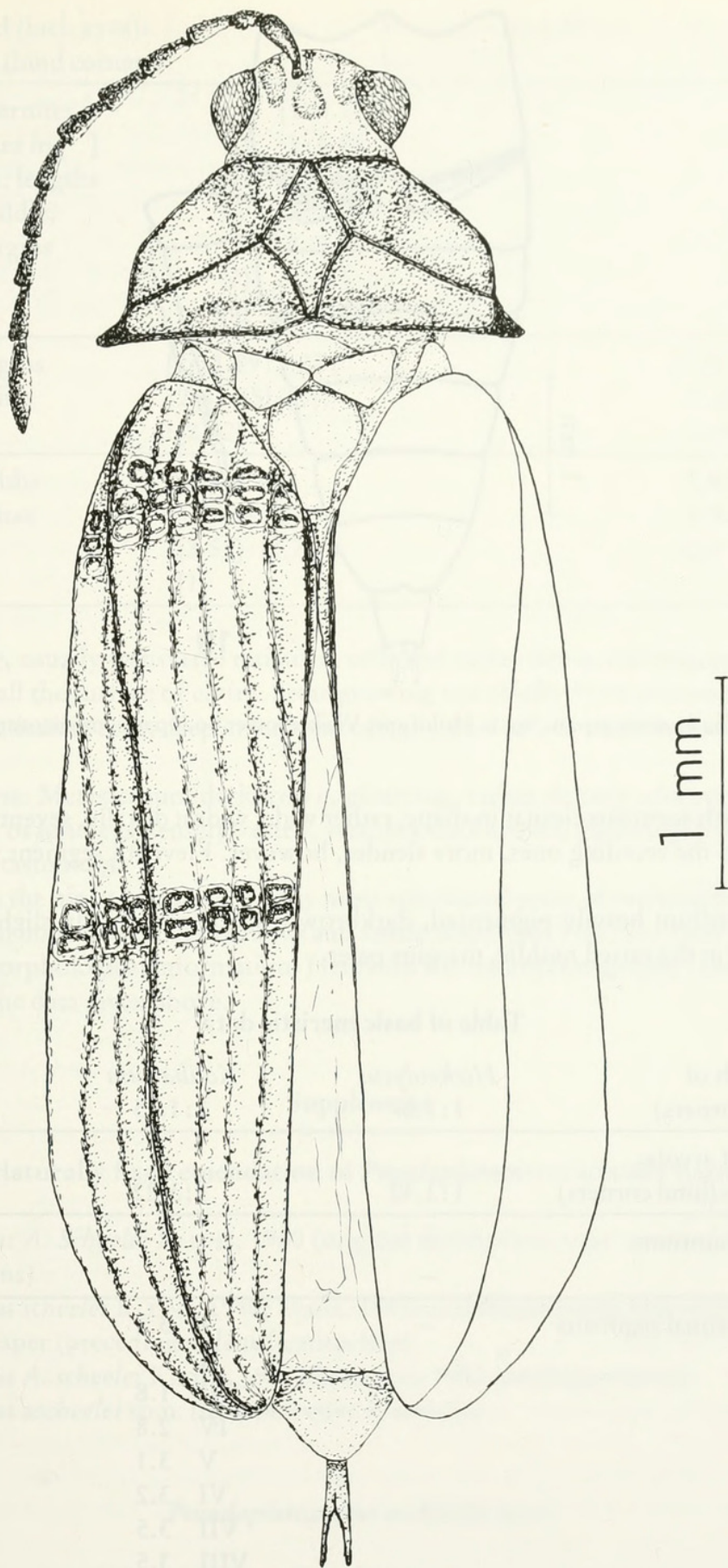


17

Fig. 16: *Pietrzeniukia kunowi* gen. n., sp. n. Holotype. Detail of dorsum showing pronotum and largely denuded mesonotum (completely uncovered scutum and scutellum).

Fig. 17: *Pietrzeniukia kunowi* gen. n., sp. n. Holotype. Detail of venter showing visible ventrites and protrusive apex of ovipositor.

(Photographs by J. R. WINKLER)



18

Fig. 18: *Pietrzeniukia kunowi* gen. n., sp. n. Holotype. Reconstruction of the complete dorsal view.

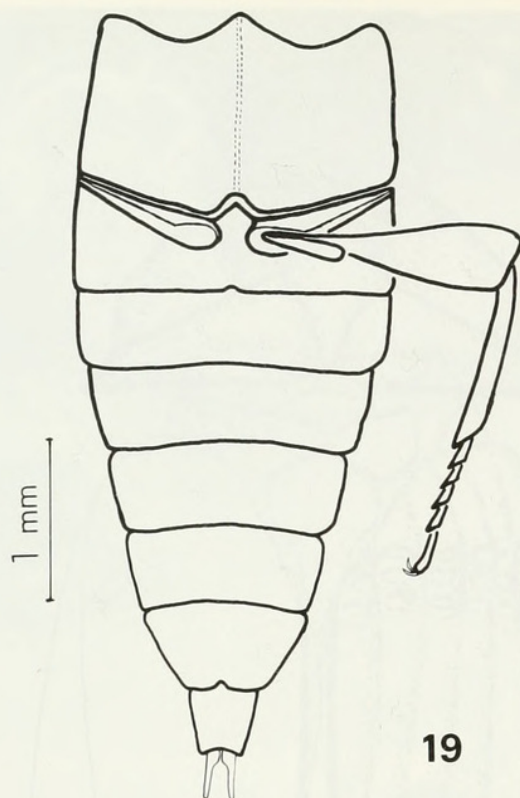


Fig. 19: *Pietrzeniukia kunowi* gen. n., sp. n. Holotype. Visible lower bodyparts: metanotum, hind legs, abdominal ventrites.

fourth, fifth and sixth segments similar in shape, rather wide, widest distally, seventh, eighth and ninth segments similar to the receding ones, more slender, however. Eleventh segment very long, slender, conical.

Scutum and scutellum heavily pigmented, darkbrown, scutellum distally slightly concave, more heavily pigmented in the raised middle, margins paler.

Table of basic meristic data

Ratio height: width of pronotum (hind corners)	<i>Hiekeolycus</i> 1:1.67	<i>Kolibacium</i> 1:1.75	<i>Pietrzeniukia</i> 1:2.71
Ratio width disc of areola: width of pronotum (hind corners)	1:3.42	1:3.22	1:5.42
Ratio length of pronotum: length of scutum	—	—	1:1.21
Ratio length of antennal segments	—	I 3.1 II 1 III 1.8 IV 2.8 V 3.1 VI 3.2 VII 3.5 VIII 3.5 IX 3.2 X 3.2 XI 5.1	I 2.3 II 1 III 2 IV 2.3 V 2 VI 2.3 VII 2 VIII 2 IX 2 X 2.3 XI 4

Ratio width of head (incl. eyes):	–	1:1.17	1:2.13
width of pronotum (hind corners)			
Ratio abdominal sternites,	I [1:4.17]	–	I 1:4
length:width: values in []	II 1:4.06		II 1:4.22
are reconstructions; lengths	III 1:3.25		III 1:3.1
measured in the middle,	IV 1:3.05		IV 1:2.42
widths on hind margins	V 1:3.83		V 1:2.16
	VI [1:3.5]		VI 1:1.05
	VII [1:1.07]		VII 1:0.66
Mutual ratio of lengths	[2]:1.89:2.22:	–	1.25:1.13:
of abdominal sternites	:2:[1.55]:[1]:		:1.31:1.19:
	: [2.22]		:1.25:1
Mutual ratio of widths	[5.4]:4.92:		7.62:7.24:
of abdominal sternites	:4.64:4.92:		:5.9:4.9:3.9:
	: [3.57]:[2.71]:		:2.1
	: [1]		

Elytra with large, usually transverse reticulate cells and rather dense and long paler setae covering in the same length all the surface of elytra. Setae growing out chiefly from interstices and raised margins of individual reticulate cells, deep inner areae of individual cells as a rule bare and strongly glittering.

Ventral bodyparts: Metasternum darkbrown, glittering, rather densely and regularly vested with paler setae, femora of hindlegs densely vested, ventrites darkbrown, glittering, bare or at least much less vested than metasternum.

Remarks: This is the nicest and scientifically most substantial piece of material here examined. The milkiness on ventral bodyside is only tenuous and semitransparent. This very clear inclusion presents a rich content of morphological information. Herewith the microphotographs (chiefly Fig. 15) valuably complement the data given above.

Supplement

Nomenclaturally fixed emendation of *Pseudaplatopterus scheelei* KLEINE, 1940

Pseudaplatopterus A. Scheelei KLEINE, 1940 (original description, type-species), KLEINE 1941 (supplement, illustrations)

Pseudaplatopterus scheelei KLEINE, 1940; SPAHR, 1981a (catalogue name, emended with indication); WINKLER, present paper (preceding indentification key)

Pseudaplatopterus A. scheelei KLEINE, 1940; KEILBACH, 1982 (catalogue name)

Pseudaplatopterus ascheelei sp.n. (new objective synonym)

Pseudaplatopterus ascheelei sp.n.

Description

Body length: 7.5 mm; width (hum.) ca. 2 mm.

Dark, unicoloured. Head and pronotum deeply punctured and sparsely shortly pubescent. No an-

tenal sockets. Antennae densely setate and very finely sculptured. Elytra with 8 costae, basal costa in anterior half strong and sharp, the other costae flat. Ventral bodyside and legs also shortly vested and punctured. (For additional details and pictures see KLEINE 1940, 1941).

Remarks: The description is a choice from the KLEINE's original description as I bear the KLEINE's species *Pseudaplatopterus A. Scheelei* in mind, and that is why I put my "new species" purposefully into synonymy to prevent the availability of the name in this spelling for contingent future use, in accordance with the provisions of Code, Articles 11d, 27, 31i.

Using this practice I fix nomenclaturally the catalogue name *Pseudaplatopterus scheelei* KLEINE, 1940, used first (but not explicitly designated as new emendation) by SPAHR (1981 a) as only valid.

Discussion

Coleoptera of the Tertiary era – as regards their suprageneric categorical level – are practically already congruent with the recent fauna although their generic appurtenance may differ from contemporary surviving genera as correctly perceived by CROWSON (1965).

The results of this treatise are with this fact fully coincident.

The three new taxa dealt here with display an unambiguous appurtenance with the family Lycidae, and the tribe Dictyopterini (the tribe has probably a virtual valende of a subfamily). About that no doubt can raise.

At the generic categorical level, however, some very remarkable ascertainments, on the contrary, were discovered. Very striking anagenetic drift running in the historically short time interval (Lower Oligocene – recent era), sharply separating the Baltic amber fossils described here from the recent genera of the tribe Dictyopterini was found out. This anagenetic drift appears as following morphogenetic phenomena:

In all fossil genera described here (and according to description also in the single hitherto known Lycid *Pseudaplatopterus scheelei*) only one raised, sharp, prominent humeral costa is developed. The primary and (if need there is) secondary costae, developed in the recent representatives of the tribe Dictyopterini are utterly lacking and the spaces among individual longitudinal rows of the reticulate cells may be defined only as flat interstices. A similar evolution in-time, when the elytra are subsequently braced with additional costae and their reticulate structure is changed, is known in Archostemata between Lower-, and Upper Permian formations in descendants of the family Tshekardocoleidae (HIEKE 1983), and evolution of the costae and reticulation as may be seen in recent Cupedidae (NEBOISS 1984) strongly resemble a similar evolutionary progression in Lycidae Dictyopterini running, of course, in shorter and later time interval.

Articulation of the antennae probably in all taxa described here (in the genus *Hiekeolycus* this character is not observable, may be presumed, however) is located far from the eyes, the articulation place is small and flat, without antennal sockets. This variance is very amazing as just in the recent Lycidae the antennal tubercles are exceptionally bulky and protruding. In the description of *Pseudaplatopterus scheelei* no detailed data on this character are given, I presume, however, a similar structure of antennal articulation as probably generally present feature in the Tertiary Lycid-Omalisid line. (The same kind of the antennal articulation was ascertained also in contemporarily described new family Berendtimiidae which I place to the proximity of the predecessors of the family Omalisidae.)

Another interesting phenomenon is a largely denuded mesonotum. This character (which is till now not known in Archostemata) I adopted only after hesitation as the artifact caused by physical factors (membraneous connection stretched out) could not be excluded. But the superreconstruction (calculation, cut-outs of the duplicate drawings arranged in a simulacrum of the direct touch of the basis of pronotum with humera) proved even the touching pronotum and elytra let at least the hind part of the scutum naked. This phenomenon is extraordinarily conspicuous in the genus *Pietrzeniukia*.

The contingent objection of possible teratology of the latter specimen (pronotum extremely short and wide, elytra dehiscent, pygidium visible from above) may be contradicted by the same phenomenon (even when less distinctly) in the genus *Hiekeolycus*. In addition, this phenomenon scarcely exists also in some recent Lycidae. Although in most of the Lycidae only scutellum is visible and all other parts of mesonotum are concealed, I succeeded to prove in some species with large differences between deepened and raised places of the pronotum, where its side margins and basis are elevated perpendicularly upright, the scutum naked as well (e. g. some representatives of *Lycus*; *Metriorrhynchus cribripennis* C. O. WATERHOUSE from tropical SE Asia). These scarce cases are, of course, the examples of peculiar modifications while the fossil examples dealt here with have the pronotum flat, with margins directed to the sides, not upright. That is why the pronotum in fossil Lycidae may be supposed yet as imperfectly developed with subsequent morphogenetic changes leading to the improvement of its protective function.

The characters given and discussed here undoubtedly corroborate the CROWSON's (1972) idea of this Coleopteran group as evolutionally young.

Evolution of characters in new Lycid genera dealt here with display the violent after-effects in the geologically young formations. This evolution, compared with many other Coleopteran groups of the Tertiary, represents delayed changes forming the final facies of the family in geologically young formations not to be found in evolutionally more original Polyphagan groups, e. g. Cleroidea.

Zusammenfassung

In vorliegender Arbeit werden drei neue fossile Lyciden (*Kolibacium* gen.n., typische Art *Kolibacium balticum* sp.n., *Hiekeolycus* gen.n., typische Art *Hiekeolycus berendti* sp.n., und *Pietrzeniukia* gen.n., typische Art *Pietrzeniukia kunowi* sp.n.) aus der berühmten Bernstein-Inklusionensammlung des Museums für Naturkunde der Humboldt-Universität zu Berlin, DDR, beschrieben. Alle bisher bekannten Bernstein-Lyciden werden in einem Bestimmungsschlüssel eingeordnet. In der Diskussion werden die Entwicklungsverhältnisse dieser Taxa und die Nomenklaturberechtigung der bisher einzigen Lycidenart *Pseudaplatopterus scheelei* KLEINE (*Pseudaplatopterus ascheelei* sp.n., syn.n.) besprochen.

Literature

- BERENDT, G. C. 1845: Die organischen Bernstein-Einschlüsse im Allgemeinen. — In GOEPPERT, H. & G. C. BERENDT: Der Bernstein und die in ihm befindlichen Pflanzenreste der Vorwelt. — In: BERENDT, G. C. (Editor): Die im Bernstein befindlichen organischen Reste der Vorwelt. 1. I. Abth.: 40–60, Berlin (Nicolai).
- CROWSON, R. A. 1965: Some thoughts concerning the Insects of the Baltic amber. — Proc. XII Int. Congr. Ent. London 1964, Section 2: Morphology, etc.: 133.
- 1972: A review of the classification of Cantharoidea (Coleoptera), with the definition of two new families, Cneoglossidae and Omethidae. — Revista Univ. Madrid, N. S. 21 (82), 35–77.
- HIEKE, F. 1983: Die historische Entwicklung der Käfer (Coleoptera). — Entomologische Nachrichten und Berichte 27 (3), 105–115; (4), 153–158.
- HIEKE, F., PIETRZENIUK, E. 1984: Die Bernsteinkäfer des Museums für Naturkunde Berlin (Insecta, Coleoptera). — The Amber beetles (Insecta, Coleoptera) of the Museum of Natural History, Berlin. — Mitt. zool. Mus. Berlin 60 (2), 297–326.
- KEILBACH, R. 1982: Bibliographie und Liste der tierischen Einschlüsse in fossilen Harzen sowie ihrer Aufbewahrungsorte. Teil 1. — Dt. Entom. Z., N. F. 29, (1–3), 129–286.
- KLEINE, R. 1940: Eine Lycide aus dem baltischen Bernstein. — Entomologische Blätter 36 (6), 179–180.
- 1941: Nachtrag zu meiner Arbeit: „Eine Lycide aus dem baltischen Bernstein“. — Entomologische Blätter 37 (1), 47.

- 1942: Bestimmungstabelle der Lycidae. — In: Bestimmungs-Tabellen der europäischen Coleopteren, No. 123, 90 pp. E. Reitter, Troppau.
- NAKANE, T. 1969: Fauna Japonica, Lycidae (Insecta, Coleoptera). — Academic Press of Japan, Tokyo, 224 pp. + 8 colour plates.
- NEBOISS, A. 1984: Reclassification of *Cupes* FABRICIUS (s. lat.), with descriptions of new genera and species (Cupedidae: Coleoptera). — Systematic Entomology 9, 443–477.
- SPAHR, U. 1981: Bibliographie der Bernstein- und Kopal-Käfer (Coleoptera). — Bibliography of Coleoptera in amber and copal. — Stuttgarter Beitr. Naturk., ser. B, No. 72, 21 pp.
- 1981 a: Systematischer Katalog der Bernstein- und Kopal-Käfer (Coleoptera). — Systematic catalogue of Coleoptera in amber and copal. — Stuttgarter Beitr. Naturk., ser. B, No. 80, 107 pp.
- WINKLER, J. R. 1952: Doplnkové poznámky ke R. KLEINEOVÝM „Bestimmungstabellen“ s popisy nových druhů východoasijských Lycidů. — Supplementary remarks to R. KLEINES „Bestimmungstabellen“ with descriptions of new species of East Asiatic Lycidae. — Acta ent. Mus. nat. Prague 28, 401–410.
- 1987: Berendtimiridae fam. n., a new family of fossil beetles from Baltic amber (Coleoptera, Cantharoidea). — Mitt. Münch. Ent. Ges. 77, 51–59.

Adress of author
Dr. Josef R. WINKLER
c/o M. Vodička
V Cibulkách 1
15000 Praha 5 – Koš.
Czechoslovakia



1987. "Three new genera of fossil Lycidae from Baltic Amber (Coleoptera, Lycidae)." *Mitteilungen der Münchner Entomologischen Gesellschaft* 77, 61–78.

View This Item Online: <https://www.biodiversitylibrary.org/item/92095>

Permalink: <https://www.biodiversitylibrary.org/partpdf/67744>

Holding Institution

Smithsonian Libraries and Archives

Sponsored by

Smithsonian

Copyright & Reuse

Copyright Status: In copyright. Digitized with the permission of the rights holder.

License: <http://creativecommons.org/licenses/by-nc-sa/3.0/>

Rights: <https://biodiversitylibrary.org/permissions>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.