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## ***Aivalykus endroedyoungai* sp. nov. from Ghana**

(Hymenoptera, Braconidae, Doryctinae)

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### **Abstract**

Taxonomic considerations of the genus *Aivalykus* NIXON, 1938. Description of *Aivalykus endroedyoungai* sp. nov. ♀ ♂ from Ghana (Ethiopian region) reared from the scolytid beetle larva *Xyloctonus scolytoides* EICHHOFF. With 17 figures.

### **Zusammenfassung**

Taxonomische Studien über die Gattung *Aivalykus* NIXON, 1938. Beschreibung von *Aivalykus endroedyoungai* sp. nov. ♀ ♂ aus Ghana (Äthiopische Region), gezogen aus der Larve des scolytiden Käfers *Xyloctonus scolytoides* EICHHOFF. Mit 17 Abbildungen.

### **Subfamily Doryctinae: Ephylini and Hecabolini**

NIXON (1938) assigned his new genus to the subfamily Hecabolinae which taxon currently is equivalent with the tribe Hecabolini within the subfamily Doryctinae (FISCHER 1981, TOBIAS 1986). Two tribes, Ephylini and Hecabolini, belonging to this subfamily are characterized by the absence of the second transverse cubital vein (cuqu<sub>2</sub>). The two tribes are distinguished by the following couple of key:

- 1(2) Brachial cell of fore wing short, shorter than length of first discoidal cell, i.e. anal vein joining discoidal vein (d) antefurcal to n. rec. (fig.1: vertical arrow); submedial

- cell (or anal vein and nervellus as well as n. rec.) of hind wing absent (fig.2) .....  
..... Ecphylini HELLÉN, 1957
- 2(1) Brachial cell of fore wing not short, or usual in its length, as long as first discoidal cell, i.e. anal vein not joining discoidal vein (d) antefurcal to n. rec. (fig.4: vertical arrow); submedial cell (or anal vein and nervellus as well as n. rec.) of hind wing present (fig.5) ..... Hecabolini FOERSTER, 1862

Considering this tribal distinction the genus *Aivalykus* NIXON, 1938 should be ranged in the tribe Ecphylini, in this respect see also NIXON's original description of his genus as well as his alar figure (l.c.: fig.1). The two genera, *Aivalykus* and *Ecphylylus* FOERSTER, 1862, represent worldwide the tribe Ecphylini and they are very near to each other, the two taxa may be separated by the following features keyed:

- 1(2) Nervulus of fore wing present, i.e. brachial cell proximally closed (figs 6 and 10: horizontal arrow). First discoidal cell trapezoid, i.e. veins cu1 and d not parallel or n. bas. longer than n. rec. (fig.6). First tergite at least somewhat longer than broad behind, usually more or less evenly broadening posteriorly (figs 7, 14, 17) .....  
..... *Aivalykus* NIXON, 1938
- 2(1) Nervulus of fore wing absent, i.e. brachial cell proximally open (fig.1: horizontal arrow). First discoidal cell of rhombus form, i.e. veins cu1 and d parallel or n. bas. as long as (or indistinctly longer than) n. rec. (fig.1). First tergite not longer than broad behind, beyond spiracles weakly broadening (fig.3) ..... *Ecphylylus* FOERSTER, 1862

### Genus *Aivalykus*

*Aivalykus* NIXON, 1938: Proc. R. ent. Soc. London, Ser. B (Taxon.) 7 (7): 152, type species: *Aivalykus electes* NIXON, 1938.

Four species of the genus *Aivalykus* are known (SHENEFELT & MARSH 1976) and a new one is added here: Among the unnamed braconid wasps of the Zoologische Staatssammlung, München, I found during my visit in November 1991 a series (27 ♀♀ + 6 ♂♂) of an *Aivalykus* species taken in Ghana by the Hungarian coleopterist Dr. S. ENDRÓDY-YOUNGA, which were thoroughly studied and proved to represent a new species to science. Surprisingly, at my visit in September 1992 to the Natural History Museum (London) I dropped upon further two specimens (1 ♀, 1 ♂) of *Aivalykus* species in question belonging to the same reared series housed in München. Subsequently its description is presented. The checklist of the genus *Aivalykus* now contains 5 species:

#### Ethiopian region

- A. endroedyyoungai* sp. nov. - Ghana  
*A. niger* GRANGER, 1949 - Malgasy

#### Nearctic region

- A. nearcticus* MARSH, 1965 - U.S.A.

Oriental region

*A. eclectic* NIXON, 1938 - India, Philippines

*A. sperches* NIXON, 1938 - India.

*Aivalykus endroedyoungai* sp. nov.

(figs 8, 11-16)

Description of the holotype ♀. - Body 3.7 mm long. Head in dorsal view cubic (fig.8), 1.48 times as broad as long, eye almost three times as long as temple, latter rounded and receded, occiput excavated. Ocelli small and elliptic, distance between fore and hind ocelli as long as largest diameter of hind ocellus, POL somewhat longer than OD, OOL 2.6 times as long as POL. Eye in lateral view nearly round, one-sixth higher than wide; temple broadening ventrally, its lower width one-fourth shorter than width of eye. Malar space somewhat shorter than basal width of mandible. Face close below toruli somewhat wider than high, inner margin of eye diverging ventrally. Face uneven, medially above with horizontal striolae, latero-ventrally smooth, shiny. Head above (frons + vertex) transversely strigulate, strigulation on vertex denser. Temple polished. - Antenna somewhat longer than body, with 28 antennomeres. Scape in lateral view as long as broad apically, second flagellomere six times as long as broad and slightly longer than first flagellomere (fig.11), third and further flagellomeres minutely and gradually shortening and attenuating so that penultimate flagellomere 4.5 times as long as broad.

Mesosoma in lateral view twice as long as high. Notauli evenly deep and anteriorly with fine crenulae. Sternauli linearly weakly impressed. Mesonotum coriaceous, dull. Scutellum somewhat less coriaceous, medially almost smooth and subshiny. Mesopleuron polished, epipleuron (below tegula) with horizontal striae. Propodeum polished, medio-longitudinally densely rugulose, behind and around lunule rugulose. - Legs usual in size. Hind femur 4.4 times as long as broad medially. Hind tibia one-sixth longer than hind tarsus, hind basitarsus as long as tarsal segments 2-3 + half of segment 4.

Fore wing shorter than body. Pterostigma four times as long as wide, issuing radial vein somewhat distally from its middle, r1 just shorter than width of pterostigma and perpendicular to its fore margin, r2 arched and reaching tip of wing, cuq1 distinctly twice as long as r1. Second section of submedian vein (2-1A) joining antefurcal, via stub of apical abscissa of subdiscoideus (3-CU1), to n. rec. (m-cu) (cf. fig.6: vertical arrow).

Metasoma somewhat shorter than head and mesosoma together. First tergite (fig.14) slightly longer than broad behind, evenly broadening posteriorly. Pair of converging keels of first tergite reaching middle of tergite. Second tergite almost twice as broad behind as long medially. Tergites 2-3 one-fifth longer than broad. Further tergites more and more transverse. Tergite 1 entirely and basal half of tergite 2 with longitudinal striation, otherwise tergites polished. Hypopygium small and pointed, ovipositor sheath long, almost as long as body (fig.15).

Ground colour of body brownish yellow. Face, cheek, temple, prosoma, fore half of second tergite and legs yellow. Ocellar field black. Scape and pedicel yellow, flagellomeres 1-4 dark yellow to brownish, further flagellomeres brown to dark brown. Wings hyaline, pterostigma brownish yellow, basally pale yellow, veins brownish yellow.

Description of the female paratypes (27 ♀♀). - Similar to the holotype. Body 2.8 - 3.8 mm long, usually 3.5 - 3.8 mm (2.8: 1♀; 3: 1♀; 3.1: 2♀♀; 3.2: 3♀♀; 3.3: 2♀♀; 3.4: 2♀♀; 3.5: 6♀♀; 3.6: 2♀♀; 3.7: 4♀♀; 3.8: 4♀♀). Head in dorsal view cubic to less transverse, 1.42 - 1.52 times as broad as long (1.42: 3♀♀; 1.45: 3♀♀; 1.46: 2♀♀; 1.47: 9♀♀; 1.48: 4♀♀; 1.5: 5♀♀; 1.52: 1♀); eye 2 - 2.8 times, usually 2.3 - 2.5 times as long as temple (2: 1♀; 2.1: 1♀; 2.25: 1♀; 2.3: 4♀♀; 2.4: 7♀♀; 2.5: 6♀♀; 2.58: 1♀; 2.7: 4♀♀; 2.8: 2♀♀). Antenna with 25-30, usually 28 antennomeres (25: 2♀♀; 27: 2♀♀; 28: 12♀♀; 29: 6♀♀; 30: 5♀♀). Pterostigma 3.3 - 4.5 times, usually four times as long as wide (3.3: 1♀; 3.58: 2♀♀; 3.75: 5♀♀; 3.8: 2♀♀; 3.9: 1♀; 4: 11♀♀; 4.1: 1♀; 4.18: 1♀; 4.23: 1♀; 4.36: 1♀; 4.5: 1♀), issuing radial vein usually somewhat distally from its middle or, less usually, somewhat proximally from its middle as well as from its middle. Ground colour of body brownish yellow, yellow pattern in a few specimens. either more or less extended or restricted.

Description of the male paratypes (7 ♂♂). - Similar to the female disregarding characteristically long metasoma (fig.16). Body 6-7, usually 6.5 mm long (6: 1♂; 6.5: 5♂♂; 7: 1♂). Head in dorsal view cubic, 1.4 - 1.48 times as broad as long (1.4: 1♂; 1.44: 1♂; 1.45: 2♂; 1.46: 2♂♂; 1.48: 1♂), eye 1.86 - 2.3 times as long as temple (1.86: 1♂; 1.9: 1♂; 2.3: 5♂♂). Antenna with 28-35 antennomeres (28: 1♂, 30: 1♂; 31: 1♂; 33: 2♂♂; 34: 1♂; 35: 1♂). Metasoma long, somewhat more than twice as long as head + mesosoma together, from hind half of second segment compressed dorso-ventrally and narrowing so that from segments 4-5 metasoma is about half as broad as second segment. Body dorsally without yellow pattern, three lobes of mesonotum dark brown to blackish with variable extension, propodeum brown.

Host: *Xyloctonus scolytoides* EICHHOFF, (Coleoptera, Scolytidae), host plant of the beetle is a *Butyrospermum parkii*-log (see SCHEDL 1972: 280 and ENDRÓDY-YOUNGA 1970: 41, loc. No. 167). - On my request Dr. S. ENDRÓDY-YOUNGA kindly informed me about the circumstances of collecting the specimens: "At the time of my visit to New Longoro, Ghana, on 12th May 1966 the savanna was in full blaze around the government's guesthouse. A few hours later the dry ground vegetation was burnt and many trunks of *Butyrospermum* around the building still were smouldering and smoking. Two days later I noticed heaps of fresh frass below the black-scorched trunks. One of such trees was cut and transported to Tamale for breeding, to see what has survived the fire. Hundreds of insects emerged, wood borers and their parasites, among them the *Xyloctonus* species (only Scolytidae) in large numbers and also the braconid wasps".

Type material. - Holotype ♀: Ghana, New Longoro, reared from the scolytid host *Xyloctonus scolytoides* EICHHOFF, 12th May - 28th June 1966, leg. et educ. Dr. S. ENDRÓDY-YOUNGA.

Paratypes 27 ♀♀ and 7 ♂♂: Same data as holotype.

Holotype and 20 paratypes (16 ♀♀ and 4 ♂♂) are deposited in the Zoologische Staatssammlung München; 8 paratypes (6 ♀♀ and 2 ♂♂) are in the Hungarian Natural History Museum, Budapest; 2 paratypes (2 ♀♀) are in the Nationaal Natuurhistorisch Museum, Leiden; 2 paratypes (2 ♀♀) are in the Zoological Institut of the Academy of

Science, Sankt Petersburg; 2 paratypes (1♀ + 1♂) are in the Natural History Museum, London.

Ethymology: The new species is dedicated to its collector Dr. Sebestyén ENDRÓDY-YOUNGA, coleopterist of the Transvaal Museum, Pretoria.

*Aivalykus endroedyyoungai* sp. nov. is nearest to *A. sperches* NIXON, 1938. The distinction of the two species is given:

*A. endroedyyoungai* sp. nov.:

Temple in dorsal view reduced (fig.8). - Second section of submedian vein (2-1A) joining antefurcal, via stub of basal abscissa of subdiscoideus, to n. rec. (m-cu) (cf. fig.6: vertical arrow). - First tergite slightly longer than broad behind (fig.14). - Ground colour of body brownish-yellow with more or less yellow pattern.

*Aivalykus sperches* NIXON, 1938:

Temple in dorsal view rounded (fig.9). - Second section of submedian vein (2-1A) joining interstitial, via stub of basal abscissa of subdiscoideus, to n. rec. (m-cu) (fig.10: vertical arrow). - First tergite 1.4 times as long as broad behind (fig.17). - Ground colour of body black (vertex, mesosoma) and brown (metasoma) with yellow to brownish yellow pattern (head).

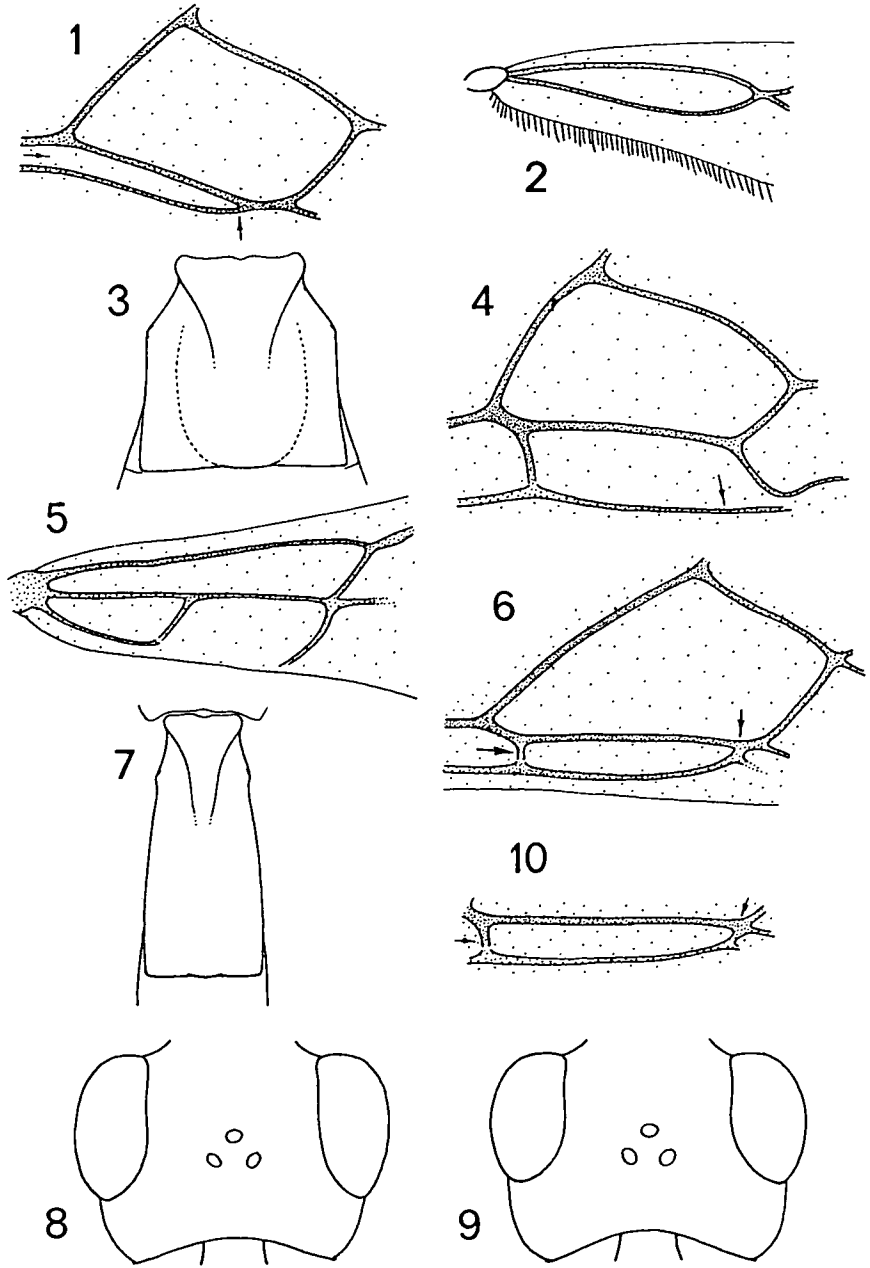
Figs 1-3: *Ecphylus silesiacus* (RATZEBURG). - 1) first discoidal cell and brachial cell; 2) base of hind wing; 3) first tergite.

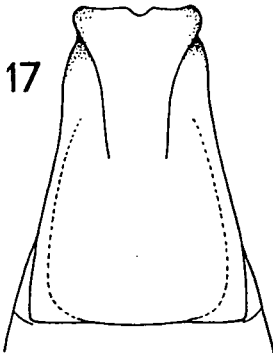
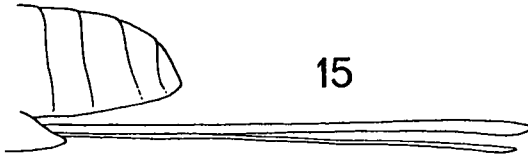
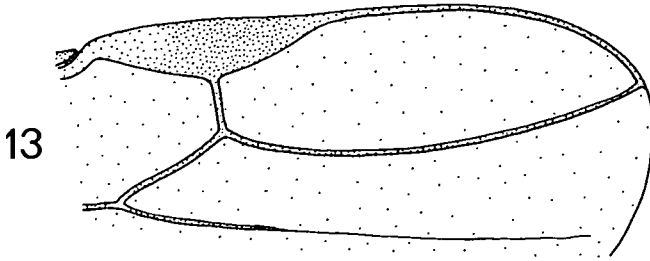
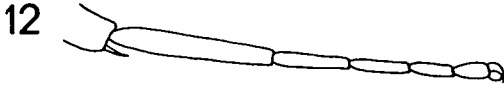
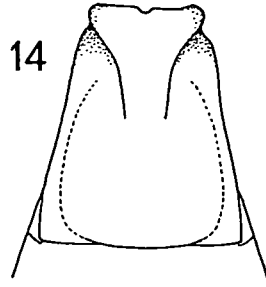
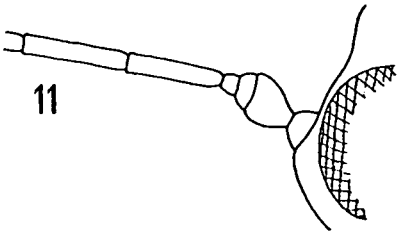
Figs 4-5: *Hecabolus sulcatus* CURTIS - 4) first discoidal cell and brachial cell; 5) base of hind wing.

Figs 6-7: *Aivalykus eclestes* NIXON - 6) first discoidal cell and brachial cell; 7) first tergite.

Figs 8, 11-16: *Aivalykus endroedyyoungai* sp. nov. - 8) head in dorsal view; 11) left antennomeres 1-4 in outer-lateral view; 12) hind tarsus; 13) distal part of fore wing; 14) first tergite of female; 15) hind end of female metasoma; 16) male metasoma.

Figs 9-10, 17: *Aivalykus sperches* NIXON - 9) head in dorsal view; 10) brachial cell; 17) first tergite.





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