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Homoptera-Psyллоidea

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(Mit 32 Textfiguren)

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Psyllids collected by Zoological Expedition to Sudan in 1962 served the material for the present paper. Prof. MAX BEIER, the Director of the Zoological Department of the Museum of Natural History in Vienna, who headed the expedition, suggested me to treat the material collected. Collections are not large (only 4 species). Nevertheless it is the first information on the fauna of psyllids from Sudan. 3 species and one genus described here are new.

We know about 90 species of Psylloidea recorded in Africa, none has been mentioned for Sudan.

The types and paratypes of species described are preserved in Vienna, paratypes (2—3 specimens of each species described) are kept in Zoological Institute of the Academy of Sciences in Leningrad. In all cases male was taken for holotype. Measurements are given in millimetres. Figures are made by the author.

I am very happy to express my sincere gratitude to Prof. BEIER who gave me the opportunity of studying the material.

Family Aphalaridae

Genus *Pachyparia* LOGINOVA, gen. nov.

Body smooth, naked. Head narrower than thorax, evenly convex above. Vertex somewhat over $\frac{1}{2}$ as long as wide, narrowed into rounded lobes anteriorly, cut up into obtuse angulated area in middle, impar ocellus clearly visible from above. Lateral margins of vertex and suture parallel. Genae before vertex extended in a shape of very short ridges thus clutching frons. Antennal

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pits behind ridges. Eyes slightly bulgy, their external margins (from above) nearly straight, ocular ridges very narrow. Antennae as long as width of head, segments 5 and 7 narrower and shorter than neighbouring ones, rhinaria on 4th, 6th, 8th and 9th segments. Pronotum lamellate, slightly bent, about 3.5 as short as vertex. Propleurites divided into half by longitudinal suture, episternal lower dilated portion bent to head. Mesopraescutum shorter than vertex. Coxae of hind legs with well developed merocanti, tibiae longer than femora, smooth basally, somewhat dilated apically, with 6 spines drawn nearer; 1-st tarsal segment with 2 such spines. Fore-wings noticeably beveled towards Cu_1 along apical margin, costal split present, pterostigma long with distinct R , veins Rs and M weakened basally, unfolded externally, venation more or less longitudinally-parallel in apical portion. Male anal tube without horizontal processes, only with a small dilation of posterior edge.

Type of the genus: *Pachyparia dimorpha* LOGINOVA, sp. n.

Genetic relationships of the genus are not yet clear. It is close to *Camartoscena* HAUPT and *Strophingia* ENDERL. (subfam. Pauropsyllinae) by the shape, structure and venation of the fore-wings, by the structure of head and thorax, by the absence of processes on the anal tube. However, by a number of characters (presence of genal ridges, long vertex, costal split on fore-wings, epistern bent to head, the structure of genitalia) *P. dimorpha* sp. n. resembles the members of *Pachypsyllodes* Bergev. (subfam. Pachypsyllinae).

Pachyparia dimorpha LOGINOVA, spec. nov. (figs. 1—11)

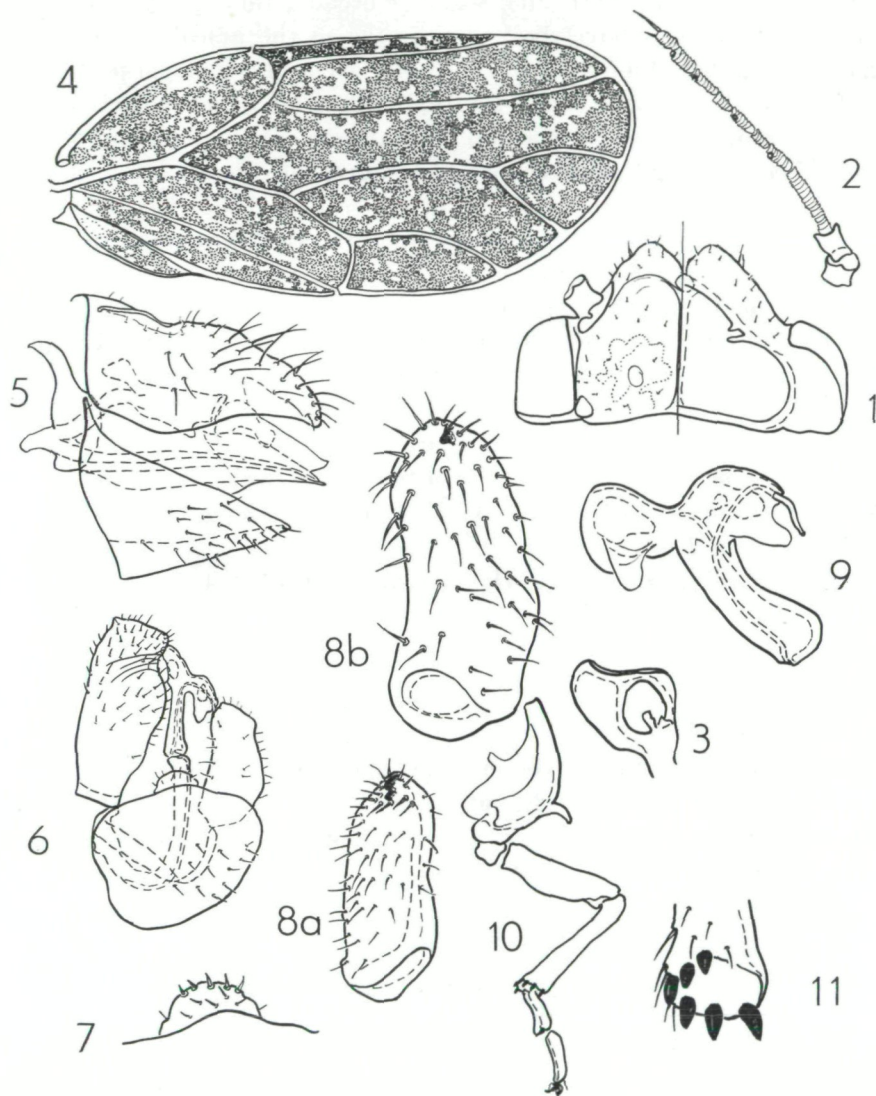
Sexual dimorphism is well expressed in the coloration of individuals. Females red, general color straw-yellow, body covered with reddish-orange or orange spots and bands. Vertex with diffused spots which occupy the area of pits and lateral margins. Mesopraescutum with 2 anterior-medial tongue-like spots and with 3 smaller posterior spots: star-shaped median and rectangular postero-lateral. Mesoscutum with 4 longitudinal wide and 2 lateral narrower bands. Orange spots stretched to the sternites of thorax, but thorax and abdomen brown from below. Antennae dirty-yellow, eyes brown, ocelli red. Femora of legs orange, tibiae and tarsi yellow. Fore-wings compact, opaque, whitish, covered with dense coral-branchy brownish pattern. At apex the pattern yellow, pterostigma darker than the general color. Veins orange-brown, raised, slightly convex. Abdominal sternites brownish-red, membranous parts reddish, genitalia dirty-yellow.

Males dark brown. The general colour orange-yellow, rises as dim individual spots and bands between the spots and bands of the general pattern on the head and thorax.

Antennae orange-yellow, two first and tenth segments brown, legs dark brown as well as thorax and abdomen from below, membranous parts red.

Fore-wings as in females, with denser dark-brown pattern, with the same veins and pterostigma.

Head continues gently sloping arch of dorsum (side view) bent down, vertex smooth, with obtuse-angular cut posteriorly, foveae of vertex faintly



Figs. 1–11. *Pachyparia dimorpha* LOGINOVA, spec. nov.

1. head, from above and below — 2. antenna — 3. clypeus — 4. forewing — 5. genitalia of female, lateral view — 6. genitalia of male, lateral view — 7. process over upper margin of genital segment — 8a.- 8b. parameres from inside (different enlargement), — 9. second segment of penis, lateral view — 10. hind leg — 11. apex of tibia of hind legs.

pressed in. Genal ridges broadly rounded apically, do not reach antennal pits, the border between pits and vertex indistinct. Antennae shorter than the width of head, 3-d segment 2.5 as long as 4-th, 4-th, 6-th, 8-th, and 9-th seg-

ments of the same length, longer than 5-th, 7-th, and 10-th segments; one of terminal setae longer than 10-th segment, 2-nd seta very short.

Female. Genitalia short, anal segment broader than genital, of the same length, swollen from above, bears long setae in the apical portion. Genital segment triangular (side-view), bears shorter setae in the apical portion.

Male. Anal tube with small slanting hollow along the posterior edge at the apex, simple with broad margin. Genital segment small, round-oval, with knobby process along the upper margin covered with robust setae. Parameres simple, broad, with a small triangular protuberance on the apex (from above), evenly covered with setae. Penis of peculiar structure, biramous apically, but with one ductus (figs. 6 and 9).

Female body length to tip of folded wings 1.77—1.95; length of forewings 1.35—1.50, their greatest width 0.62—0.67; width of head with eyes 0.45—0.50, width of vertex 0.29—0.32, its length along suture 0.20—0.25; length of genal ridges 0.04—0.05, length of antennae 0.37—0.38; length of anal segment 0.25²). Male body length 1.50—1.70; forewings length 1.15—1.30, width 0.52—0.60; head width 0.42—0.45, vertex width 0.25—0.27, length 0.17—0.20; genal ridges length 0.03—0.04; antennae length 0.35—0.37.

Collected on *Tamarix* spec.

2. Nilkatarakt, O. Ufer, 10. II.; 10 females and 4 males.

Genus *Colposcencia* ENDERL.

Colposcencia aliena (Löw). Faras W.N. from Wadi Halfa, 3. II.; 104 males and females; on *Tamarix* spec. (*nilotica*?).

It is widely distributed over the arid zone of Palaearctic; in North Africa it is recorded from Morocco to Egypt and Sudan; in the USSR it was recorded in the south of the European part, in the Caucasus, in Kazakhstan and in Middle Asia. Collected on *Tamarix* spec. Biology is unknown.

Family Psyllidae

Genus *Acizzia* HESL.-HARR., 1961

It is an abundant genus, widely distributed in Africa, India, Indo-Malaya, New Zealand and Australia.

It has been only recently distinguished as an independent taxonomical unit (HESLOP-HARRISON, 1961), earlier its members were referred to genera *Psylla* GEOFFR. and *Arytaina* FRST. The contents of the genus is not established yet, but even now comprises 15 species, the majority of which live on *Acacia*, also on *Albizzia*, *Hakea*, *Dodonaea* and on other genera of Leguminosae.

In South Africa there are recorded *Acizzia immaculata* HESL.-HARR. and *A. acaciae-baileyanae* (FROGG.). Host-plant of the first species is unknown, the

²) All measurements are of the same type for all species and sexes (below enumeration of measurements is given in brief).

second inhabits *Acacia baileyanae*. Judging by the description and illustrations two PETTEY's species from South Africa must be also referred to the genus *Acizzia*: *Arytaina mopani* PETT. (PETTEY, 1925) living on *Copaifera mopane* and *Arytaina karrooensis* PETT. (PETTEY, 1932) from *Acacia karroo*.

In other regions of Africa species of the genus have not been found. The species described below were collected on long-spined *Acacia seyal* in a narrow oasis coastal line of the Nile.

Acizzia beieri LOGINOVA, spec. nov. (figs. 12—22)

Pale-yellow insects, drawing on dorsum (if present) yellow to orange, represented by 2 spots in the area of vertex's foveae, by 2 pairs of spots on the sides of pronotum, by 2 triangular spots on praescutum and by 4 longitudinal bands on scutum of mesothorax. Antennae pale-yellow, 4-th—9-th segments on apexes, 10-th brown. Eyes brown-crimson, ocelli orange or reddish. Legs greenish-yellow or yellow, as well as abdomen, genital segments with paler colouration. Wings colourless, veins pale.

Emerging individuals green.

Head, thorax from above, and antennae covered with short pale setae. Head as wide as thorax, small, usually pressed to pronotum and slightly bent down, in lateral view together evenly prominent thorax forms gently sloping arch. Vertex bow-shaped from behind, its lateral angles swollen and bear paired ocelli, vertex rounded anteriorly and slightly cut in the middle, anterior ocellus in facial plane seen from above. Genal cones look like short, flattened, not adjoining inside tubercles. Antennae less than 1.5 as long as width of head. Fore-wings membranous, pterostigma denser, sometimes whitish, venation typical of the majority species of psyllids, associated with arboreal Leguminosae, belonging to *Acizzia* and *Psylla*. Cu_1 long, steeply curved, cell cu_1 larger than m_1 . Veins strong, pterostigma wide and long with distinct R , basally as wide as the contiguous area of cell rs or wider, wings rounded or slightly beveled along apical edge. Tibiae of hind legs have a small knee-tubercle basally, apex with four (1+3) spines and crown formed by robust long setae between them; 1-st segment of tarsus with 2 such spines.

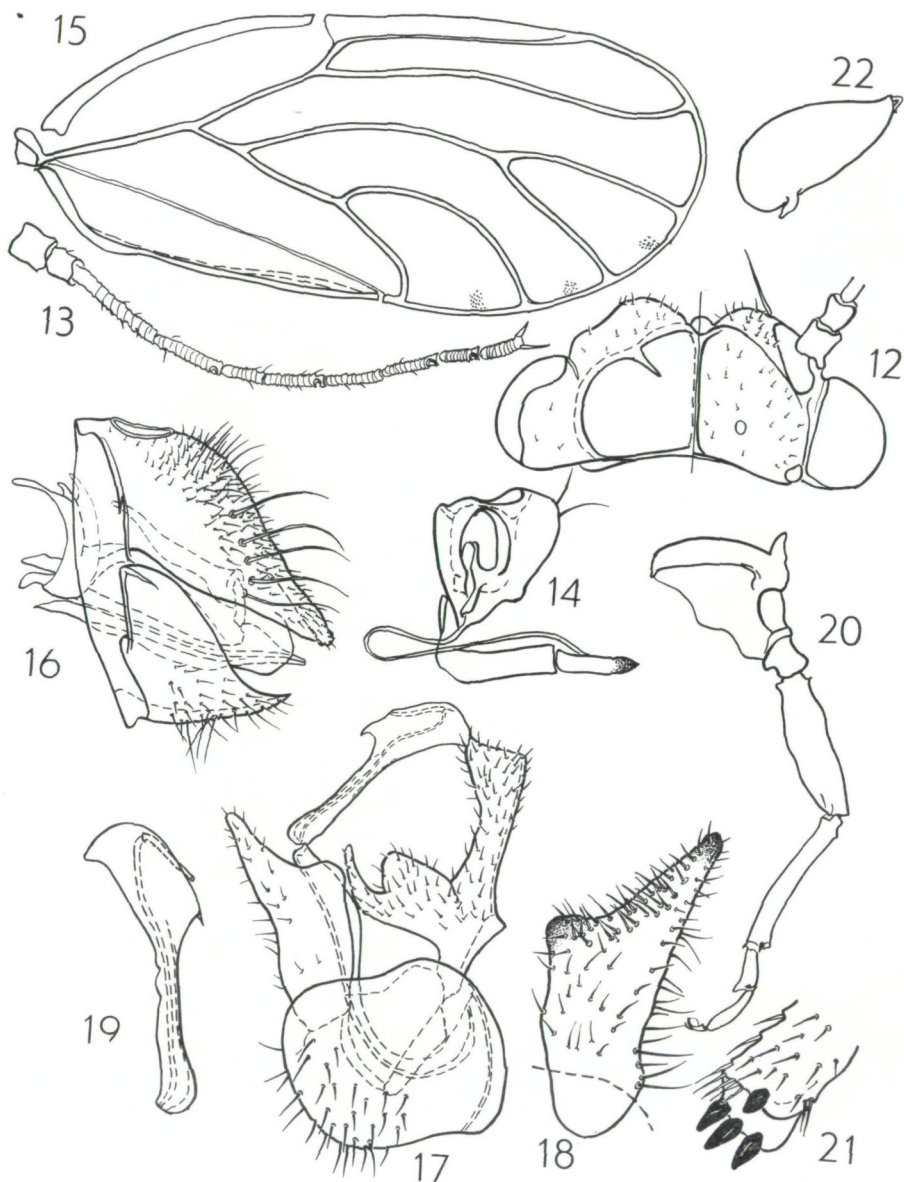
Female. Anal segment short, swollen basally, covered with setae of different length, of which 5 upper pairs the longest. Genital segment somewhat shorter than anal one, closely pressed to it, triangular with acute, curved upwards apical angle, covered with thick setae below.

Male. Anal tube of peculiar shape (fig. 17), covered with thick pale setae, genital segment in lateral view nearly square with the same setae below. Parameres somewhat lower the anal tube, broad, rectangular - lamellate with acute-triangular posterior-apical angle drawn off.

Egg with short curved process on the anterior pole.

Female body length 1.90—2.10; forewings length 1.50—1.65, width 0.70—0.76; head width 0.52—0.57, vertex width 0.31—0.35, length 0.12—0.15,

genal cones length 0.02; antennae length 0.62—0.80; anal segment length 0.27. Male body length 1.87—1.95, forewings length 1.47—1.52, width 0.67—0.70; head width 0.52—0.55, vertex width 0.32—0.35, length 0.15, genal



Figs. 12—22. *Acizzia beieri* LOGINOVA, spec. nov.

12. head, from above and below — 13. antenna — 14. clypeus — 15. forewing — 16. genitalia of female, lateral view — 17. genitalia of male, lateral view — 18. parameres from inside — 19. second segment of penis — 20. hind leg — 21. apex of tibia of hind legs — 22. egg.

cones length 0.02—0.04; antennae length 0.80; anal tube height 0.22, parameres height 0.20.

On *Acacia seyal*.

Sarra O., N. from Wadi Halfa, 11. II.; 12 females and 5 males.

Acizzia beieri spec. n. is an extremely peculiar species, morphologically similar with a number of species characteristic of New-Zealand fauna, namely with *A. jucunda* TUTH., *A. exquisita* TUTH., etc. We believe it is the most close to *A. dodonaeae* TUTH. (TUTHILL, 1952) by having a similar structure of genitalia in the both sexes. Out of the species known from Africa it is the most close to *A. acaciae-baileyanae* (FROGG.), described from Australia.

Acizzia bona LOGINOVA, spec. nov. (figs. 23—32)

General colour straw-yellow or somewhat brighter, vertex and dorsum of thorax dark brown or brown with numerous scattered whitish, yellowish or even reddish (seldom and only in males) spots of various shape and size; between stripes of general drawing on mesothorax pale bands present. Females are paler than males. In males thorax and abdominal sclerites from below often brown, seldom carminered, in this case genal cones, spots on dorsum, anal tube and genital segment of the same hue while parameres yellow.

Antennae yellow, 3-d—8-th segments on apices, 9-th and 10-th wholly dark brown. Fore-wings semi-transparent, yellow, with apical brown border formed by fusing spots (fig. 25); tips of pterostigma and clavus and of the places with marginal spines darker. Pterostigma denser than membrane, brownish, veins of the same colour or brighter. Hind-wings colourless-glassy.

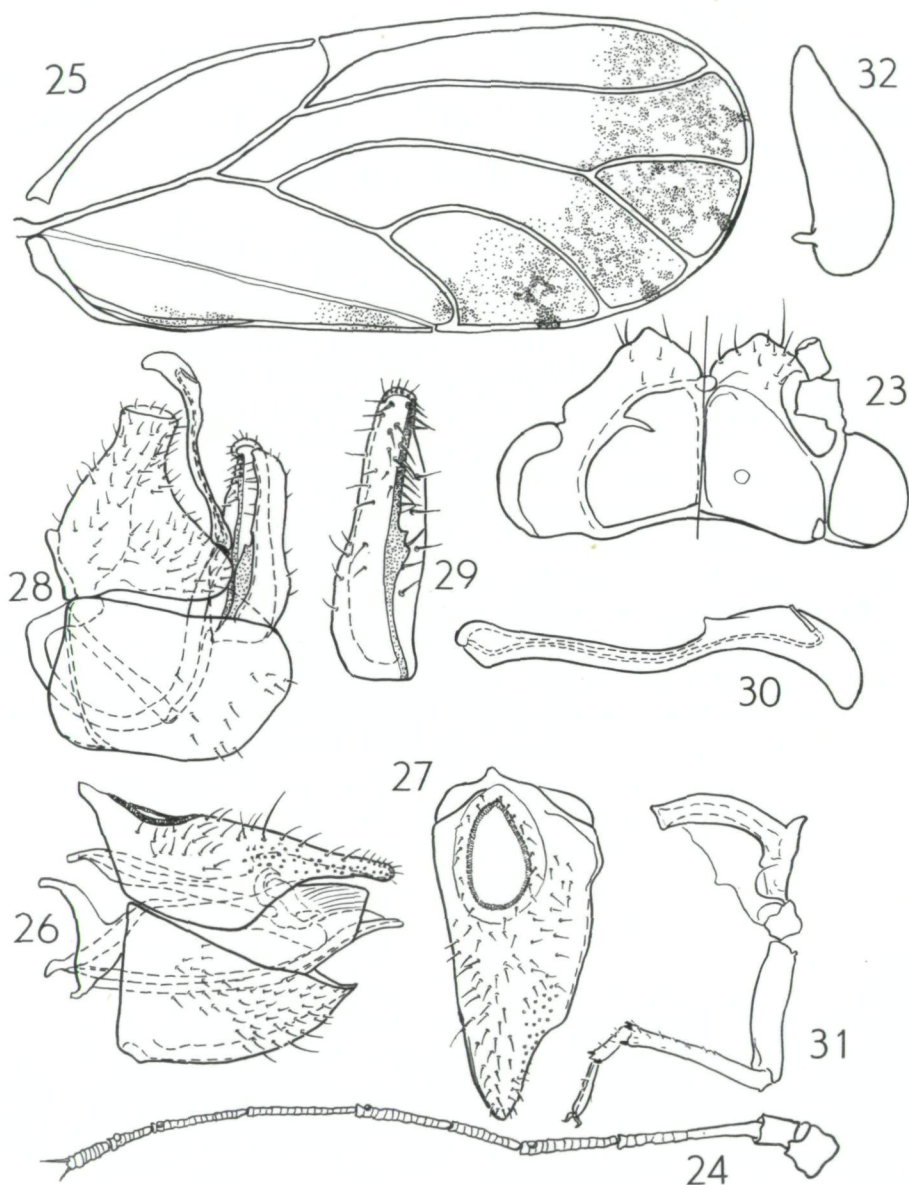
When emerging insects are green and they keep this colour in the colouration of light parts of the body for a long time.

Body naked from above. Head as wide as thorax, slightly bent down, thorax from above gently arched, slightly convex. Vertex swollen along suture and lateral margins, obtuse-angled posteriorly, anteriorly does not hang over, anterior ocellus directed down-forward, hardly seen from above. Genal cones widely conic, not contiguous inside, $\frac{1}{2}$ as long as vertex. Antennae twice as long as width of head. Shape of fore-wings and venation as in *A. beieri* spec. nov., but base of pterostigma wider than adjoining area of cell *r*, stalk *M-Cu* two times shorter than *R-RS*, branches of *M* short and cell *m*₁ much smaller than *cu*₁. Tibiae of hind legs with knee spine and five $\{1 + 2 + (1 + 1) / \text{or } 1 + (2 + 2)\}$ or with four spines.

Female. Genitalia wedge-shaped (fig. 26).

Male. Anal tube with wide fold-like projection along posterior margin, evenly setaceous. Genital segment 1.5 as long as height basally, rounded posteriorly. Parameres somewhat lower than anal tube, of simple lamellate form, tapering to apex, with longitudinal short ridge from inner side and bicuspid process in middle, most robust setae above this process. Tip of penis narrow, elongated, rounded down, ductus straight.

Female body length 2.20—2.70; forewings length 1.75—2.10, width 0.75—0.82; head width 0.60—0.65, vertex width 0.35—0.40, length 0.17—0.20;



Figs. 23—32. *Acizzia bona* LOGINOVA, spec. nov.

23. head, from above and below — 24. antenna — 25. forewing — 26. genitalia of female, lateral view — 27. anal segment, from above — 28. genitalia of male, lateral view — 29. parameres from inside — 30. second segment of penis — 31. hind leg — 32. egg.

genal cones length 0.07—0.08; antennae length 1.05—1.12; anal segment length 0.37—0.40.

Male body length 2.0—2.12; forewings length 1.57—1.65, width 0.62—0.70; head width 0.55—0.60, vertex width 0.32—0.36, length 0.16—0.17; genal cones length 0.05—0.07; antennae length 1.0—1.50; anal tube height 0.17, parameres height 0.15.

On *Acacia seyal*.

2. Nilkatarakt O.-Ufer, 10. II.; 20 females and 5 males.

The species described is similar with New-Zealand *A. conspicua* TUTH., which lives on *Acacia melanoxylon*. Differences are very distinct, especially in the structure of genitalia.

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