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ODONATA COLLECTED IN ETHIOPIA BY THE  
EXPEDITIONS OF THE  
ACCADEMIA NAZIONALE DEI LINCEI  
II. NEW AND RARE SPECIES OF *NOTOGOMPHUS*  
FROM ETHIOPIA  
(Odonata: Gomphidae)

RIASSUNTO. — I sei esemplari di *Notogomphus* catturati in Etiopia dalla spedizione dell'Accademia Nazionale dei Lincei appartengono a tre specie: *N. ruppeli* (Sélys), *N. coltrivittii* n. sp. e *N. cataractae* n. sp. La prima specie è ridescritta. *N. coltrivittii* ha faccia gialliccia e nera, fasce gialle anteriori dei metepisterni confluenti, e manca di fasce anteo-merali e di spine più lunghe sui femori posteriori. *N. cataractae* ha faccia gialliccia, lunghe spine sui femori posteriori, e disegno dello pterostigma simile a quello della specie precedente.

During the first zoological expedition to Ethiopia, organized by the Accademia Nazionale dei Lincei, 6 specimens of *Notogomphus* were caught, belonging to three species, two of which are new.

**Notogomphus ruppeli** (Sélys)

SIROA, loc. 1, tra Addis Abeba e Holetta, m. 2400 circa, 21-X-1973. C. Consiglio leg., 1 ♂.

ARUSSI, loc. 36, tra Aselle e Bucoggi, m. 2400 circa, 4-XI-1973. C. Consiglio leg., 1 ♂; Mesim Mangistake leg., 1 ♀.

The specimens agree rather well with the descriptions of SÉLYS (1858) and RIS (1969) (sub *Riviphris*), but not with that of the ♀ given by MARTIN (1915) (sub *Riviphris*).

The ♂ from loc. 1 has a greenish face with two transverse pale brown bands, one covering most of the anteclypeus and the other one on the suture between the postclypeus and the frons; in addition two transverse pits on the postclypeus are pale brown. In the two specimens from loc. 36 these pale brown areas are fused, so that the postclypeus is entirely pale brown.

The posterior part of the frons and the vertex are black, with a transverse green lamula behind the ocelli.

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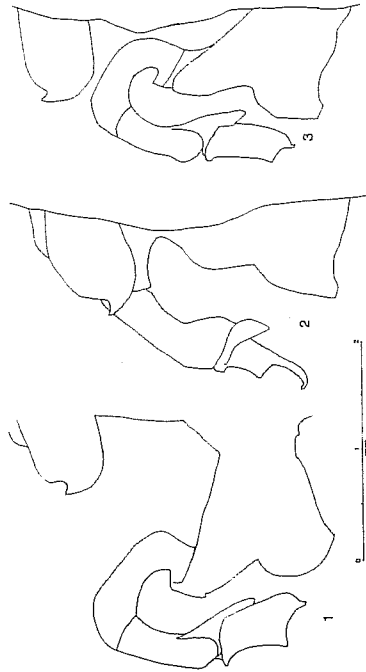
The dorsal part of the occiput in the ♂♂ is green yellow and wide, with the hind margin prominent in the middle and with rather long hairs; in the ♀ it is greenish, very narrow and with very long hairs on the hind border. The prothorax is dark brown, except for its middle region which is yellow.

Pterothorax: Dorsal carina black, yellow at its ventral end, with tooth directed slightly upwards; yellow bands therefore ventrally confluent, slightly contracted before ventral end. Remaining part of the mesepisterna brown, more blackish near the yellow bands in the ♂, with faint greenish antehumeral stripes near the yellow bands in the ♀. Remaining lateral parts of the antehumeral stripes are lacking in the ♀. Remaining lateral parts of the thorax greenish, with a narrow blackish stripe along the humeral suture, leaving a small greenish spot attached to the dorsal part of the humeral suture. Femora fulvous or brown, tibiae and tarsi black. Posterior femora without longer spines. Wings hyaline. Pterostigma brown, very short, only 2 mm long in the ♂, 2½ mm in the ♀.

Abdomen yellow, with two sublateral black longitudinal stripes, enlarging and converging together at the apex of segments I-IX and at the base of segment X. This results in an interrupted yellow median dorsal stripe. In the ♂, superior appendages black and tapering at the apex which is very acute. There is a medial-ventral tooth at 1/3 of their length. Inferior appendage black and deeply bifurcated, with the two arms markedly spread out and with the apices curved upwards.

Penis and hamuli as in figs. 1 and 4.

Length: ♂, 48-50 mm; ♀, 50 mm. Abdomen: ♂, 36-37 mm; ♀, 38 mm. Hindwing: ♂, 27-28 mm; ♀, 31 mm.



Figs. 1-3. - Penis and hamuli, lateral view, of: 1) *Notogomphus ruppelli* (Selys), tra Addis Abeba e Holsteia; 2) *N. cottarellii* n.sp., holotype; 3) *A. eataractar* n.sp., holotype.

**Notogomphus cottarellii** n.sp.

*Diagnosis.* A large species, with yellowish face except for the anteclypeus and the postclypeus which are black, without longer spines on the hind femora, as in *N. dorsalis* (Selys), *N. lecythus* Campion and *N. ruppelli* (Selys); it differs from these species and from *N. immisericors* Campion, *N. kilmajirizus* (Sjostedt) and *N. serryi* (St. Quentin) (in which this character is not described) in the pattern of the mesothorax, which has dorsally and ventrally confluent yellow anterior bands and no antehumeral stripes.

*Series typica:* Holotype: 1 ♂, KAFFA, loc. 21, tra Donga e Baca, m 1800 circa, 28-X-1973. C. Consiglio leg. Paratype: 1 ♀, same locality and datum as the holotype, V. Cottarelli leg. Preserved in my collection.

*Description of the holotype.* Total length (without apical appendages) 55 mm, abdomen (without apical appendages) 41 mm, hindwing 36 mm, pterostigma (foraging) 3.3 mm.

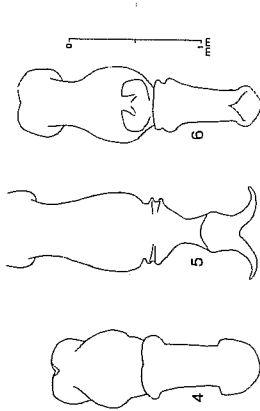
Labrum yellowish, inferiorly and laterally bordered with black; a middle brown spot, connected with a brown basal line. Genae yellowish. Anteclypeus and postclypeus black. Frons yellowish, posteriorly broadly bordered with dark brown. Vertex black. Occiput above yellowish, its posterior border protruded in the middle, with a regular series of long black hairs. Labium brown. Base of the maxillae yellowish. Under surface of the head brown, bordered with yellowish along the eyes.

Pronotum brown with a median yellow stripe. Pterothorax brown to below humeral suture, more blackish near the yellow anterior bands which are confluent dorsally and ventrally (leaving only a small black spot on the tooth of the median carina) and slightly dilated ventrally. The tooth of the median carina is asymmetrical and directed upwards. No antehumeral stripes. A small brown spot on the ventral part of the mesepimera near the first lateral suture and a faint brown stripe on the second lateral suture. Femora brown, the posterior ones with short spines, the longest of which (on the distal part) as long as half the width of the femora; tibiae and tarsi black. Wings yellowish; 13 antenodal veins in the costal field of the anterior wing, of which the 1<sup>st</sup> and the 5<sup>th</sup> are thickened; 13-14 antenodal veins (including the basal one) in the subcostal field, of which the 2<sup>nd</sup> and the 6<sup>th</sup>-7<sup>th</sup> are thickened; 2 crossveins in the anterior wing between the sectors of the arculus before bifurcation; 2½-3 cells in the anal triangle; pterostigma light brown, heavily bordered with black on the anterior side.

Abdominal segment 2 with two brown bands, enclosing a yellow median band which is constricted in the middle and does not reach the posterior end of the segment. Abdominal segments 3-7 brown, leaving two lateral yellow spots at both ends on each side of the segment and a yellow median band which has two constrictions (a sharp anterior one and a weak and gradual posterior one) and which does not reach the posterior end of the segment. Abdominal segments 8-9 with two brown bands enclosing a yellow median

band which does not reach the posterior end of the segment. Abdominal segment 10 black with a small yellow spot near the posterior border. Apical appendages brown, as in fig. 7. Head of the penis with bifurcated processus, as in figs. 2 and 5.

*Description of the paratype.* Total length (without apical appendages) 57 mm, abdomen (without apical appendages) 41 mm, hindwing 39 mm, pterostigma (forewing) 3,5 mm.



Figs. 4-6. — Head of the penis, ventral view, of: 4) *Notogomphus ruppeli* (Selys), tra Audis Abada e Hollett; 5) *N. cottarelli* n.sp., holotype; 6) *N. cataractae* n.sp., holotype.

The ♀ is similar to the ♂; however, the anteclypeus, postclypeus, posterior part of the frons and vertex are brown instead of black or dark brown, the occiput is excavated; the labium has large yellow lateral lobes, covering the bases of the maxillae. There are 15 antenodal veins in the costal field of the anterior wing, of which the 1<sup>st</sup> and 6<sup>th</sup>-7<sup>th</sup> are thickened; 14 antenodal veins in the subcostal field, of which the 2<sup>nd</sup> and 6<sup>th</sup> are thickened; 3 crossveins between the sectors of the arcus before bifurcation in the anterior wing; of course no anal triangle; pterostigma brown. All the abdominal segments have two brown bands, leaving a yellow median band as well as two lateral yellow bands. The same is true for the segment 10, except that the brown bands reach the lateral borders and hence there are no yellow lateral bands. Segment 8 has a ventral black appendage at its posterior border. This is bifurcated and bent rearwards. The apical appendages on segment 10 are brown and pointed.

*Derivatio nominis.* I dedicate this species to my colleague and friend Prof. Vezio Cottarelli who caught the paratype ♀.

*Ecology.* The new species is only known for this station, the ecological features of which are described by BRIGNOLI, CONSIGLIO, COTTARELLI and VIGNA TAGLIANTI in this volume.

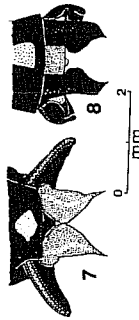
#### **Notogomphus cataractae** n.sp.

*Diagnosis.* A medium-sized species, with yellowish face, longer spines on the hind femora; pterothorax with largely confluent yellow anterior bands and no antehumeral stripes. For the pattern of the pterothorax it is

different from all known species, except *N. cottarelli* Consiglio (from which it is distinguished by the face and the spines on the hind femora) and perhaps *N. immisericors* Campion (distinguished by having an anal loop in the hind wing); the pattern of the pterothorax is not described in *N. levogyi* (Schouteden) (which anyway is distinguished by the face).

*Holotype:* 1 ♂, KAFFA, loc. 23, Uncuri, cascade del Piccolo Ghibiè, m 1650 circa, 20-X-1973, C. Consiglio leg. Preserved in my collection. Female unknown.

*Description of the holotype.* Total length (without apical appendages) 53 mm, abdomen (without apical appendages) 40 mm, hindwing 31 mm, pterostigma (forewing) 2,7 mm.



Figs. 7-8. — Apical appendages, dorsal view, of: 7) *Notogomphus cottarelli* n.sp., holotype; 8) *N. cataractae* n.sp., holotype.

Labrum yellowish, inferiorly bordered by light brown. Genae, anteclypeus and postclypeus yellowish. Frons yellowish, posteriorly bordered with brown. Vertex brown. Occiput yellowish above, its posterior border rather regularly convex, bearing a regular series of rather long hairs. Labium, base of maxillae and under surface of head light brown.

Pronotum brown, with a median yellow stripe. Pterothorax brown to below humeral suture, with yellow anterior bands confluent dorsally and ventrally, leaving only a small black spot on the tooth of the median carina. The confluent anterior bands narrow abruptly between the middle and ventral thirds and become gradually dilated near the ventral border of the mesepisterna. The tooth of the median carina is nearly symmetrical. No antehumeral stripes. A faint brown stripe anterior to the ventral part of the first lateral suture, and another one on the dorsal part of the second lateral suture. Remaining lateral parts of the pterothorax greenish. Femora brown, the hind ones with long spines on their distal half, the longest of which are as long as the width of the femora. Tibiae and tarsi black. Wings yellowish on their proximal half; 12-13 antenodal veins in the costal field of the anterior wing, of which the 1<sup>st</sup> and the 5<sup>th</sup> are thickened; 12-13 antenodal veins (including the basal one) in the subcostal field of the anterior wing, of which the 2<sup>nd</sup> and the 6<sup>th</sup> are thickened; 3 crossveins in the anterior wing between the sectors of the arcus before bifurcation; 3 cells in the anal triangle; pterostigma brown, bordered with black on its anterior side.

Abdominal segment 2 with two brown bands, enclosing a yellowish median band, twice constricted, not reaching the posterior end of the segment. Abdominal segments 3-5 brown, with a lateral anterior light spot on each side, and a yellowish median band, posteriorly constricted, not reaching the posterior end of the segments. Abdominal segment 6 brown, with a lateral anterior light spot on each side, and a yellowish median band, twice constricted, not reaching the posterior end of the segment. Abdominal segment 7 brown, with two lateral light spots on each side at both ends of the segment, and a yellowish median band, with an anterior constriction, tapering posteriorly, not reaching the posterior end of the segment. Abdominal segments 8-9 yellow, with two brown bands enclosing a greenish median stripe, which on the 8th segment does not reach the posterior end of the segment. Abdominal segment 10 black, with a median triangular greenish spot (with the apex directed anteriorly), not reaching the posterior end of the segment. Apical appendages brown, the superior ones with a strong basal greenish tooth, with black apex, directed laterally; the rami of the inferior one flat, directed laterally, with the apex curved upwards (fig. 8).

Head of the penis slender, with the apex slightly inflated (figs. 3 and 6).  
*Description of the colour in life.* Eyes grass green above, light green underneath. Thorax brown and light green. Abdomen black, with median light green stripe, and with the sides of the 8th and 9th tergites yellow. Pterostigma black.

*Derivatio nominis.* The name of the new species refers to the waterfall which is in the collecting locality.

*Ecology.* The new species is only known for this station, the ecological features of which are described by BRIGNOLI, CONSIGLIO, COTTARELLI & VIGNA TAGLIANTI in this volume.

SUMMARY. — The six specimens of *Notogomphus* caught in Ethiopia by the expedition of the Accademia Nazionale dei Lincei belong to the following species: *N. ruffelli* (Selys), *N. cataractii* n. sp. and *N. cataractae* n. sp. The first one is redescribed. *N. cataractii* has a black and yellowish face and there are no longer spines on the hind femora. It has confluent yellow anterior bands on the mesepisterna and no antehumeral stripes. *N. cataractae* has a yellowish face and longer spines on the hind femora; for the pattern of the pterothorax it is similar to the previous species.

#### LITERATURE

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