

**PHILOGENIA IQUITA SPEC. NOV., A NEW DAMSELFLY FROM PERU  
(ZYGOPTERA: MEGAPODAGRIONIDAE)**

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*P. iquita* sp. n. (holotype ♂; International Odonata Research Institute (IORI) collection, Gainesville, Florida, USA) is described from 39 ♂, 3 ♀ collected near Iquitos, Loreto Department, Peru. Males of *P. iquita* have cerci similar to those of male *P. macuma* Dunkle and *P. minteri* Dunkle, but each paraproct of *P. iquita* bears a triangular dorsal blade which is lacking in the other 2 spp.

INTRODUCTION

BICK & BICK (1988) reviewed the males of the entirely Neotropical genus *Philogenia*. They treated 27 species, but excluded 2 species known only from females, and *P. leonora* Westfall & Cumming which was thought to be a synonym of *P. championi* Calvert. MAY (1989) restored *P. leonora* to specific status. COOK (1989) and DONNELLY (1989) recently added *redunca* and *strigilis*, respectively, to the genus. To these 32 species another is added below, and certainly others await discovery. The larva of only one species, *P. cassandra* Hagen *in Selys*, has been described (DE MARMELS, 1982).

**PHILOGENIA IQUITA SPEC. NOV.**

Figures 1-4

Material. — **Holotype** ♂: Peru, Loreto Department, Explorama Lodge, 80 km NE Iquitos at junction of Amazon and Yanamono Rivers (3.00 S, 72.80 W), 28 Aug. 1989, coll. S.W. Dunkle. Deposited in International Odonata Research Institute (IORI) collection Gainesville, Florida, USA. — **First ♀ (allotype)**: same data, deposited IORI. — **Other paratypes**: 3 ♂ same data. — Remainder same data except: 1 ♀, 13 Aug. 1989; — 2 ♂, 17 Aug. 1989; — 7 ♂, 23 Aug. 1989; — 4 ♂, 24 Aug. 1989; — 16 ♂, 1 ♀, 29 Aug. 1989; — 1 ♂, 30 Aug. 1989; — 1 ♂, 1 Sept. 1989; — 1 ♂ Explornapo Camp at junction of Napo and Sucusari Rivers at Llachapa (3.16 S, 72.54 W), 27 Aug. 1989; — 1 ♂,

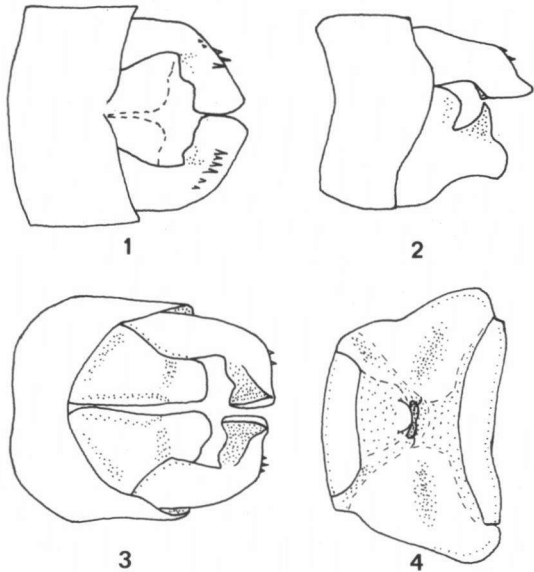
Explorama Inn, 40 km NE Iquitos on Amazon River (3.20 S, 73.00 W), 18 Aug. 1989; — 1 ♂, latter locale, 20 Aug. 1989; — 1 ♂, latter locale coll., 17-21 July 1989, by G.B. Edwards. — Total 39 ♂, 3 ♀, all preserved by acetone treatment and stored dry in transparent envelopes, most paratypes in the S.W. Dunkle collection, some to be distributed to the United States National Museum, C. Cook, J.J. Daigle, T.W. Donnelly, R.W. Garrison, and other collections.

**Etymology.** — This species is named after Iquitos, nearest city to the type locality.

**Diagnosis.** — Males distinctive by the truncate, bent-down cerci in combination with the triangular dorsal blade on each paraproct. Female similar to female *P. minteri* except that hind lobe of prothorax bears lateral corners, not lateral projections. Larva unknown.

**MALE holotype** (variation of paratypes in parentheses). — Color pattern like that of most species of genus. In life, face below level of clypeus pale green and compound eyes black above, gray below. Frons, vertex, and antennae black, mottled brown on vertex. Rear of head brown. Labial palps black, prementum black (varies from tan with central dark spot to all black).

Prothorax brown dorsally, black laterally, rear edge evenly convex with slightly raised rim, but without lateral corners. Mesepisterna brown with black carinae (some with faint black antehumeral stripes or even mostly black, which might increase with age). Each side of pterothorax tan with narrow black stripe on humeral suture and wide black separate stripes on mesepimeron, metepisternum, and metepimeron, the latter 3 stripes connecting ventrally around bases of



Figs 1-4. *Philogenia iquita* sp. n., topoparatypes, anterior to left: (1-3) Male abdominal segment 10 and appendages in dorsal, lateral, and posteroventral view respectively. Dotted lines in Fig. 1 show outlines of basal shelves of paraprocts; — (4) Female prothorax in dorsal and slightly posterior view; central dark spot is apophyseal pit.

legs, remainder of underside of thorax tan. Legs tan with black armature, dark flexor surfaces, and dark extensor surfaces on forelegs (sometimes also other legs). Venation as in other *Philogenia* spp. Wings hyaline (dark brown in old individuals) with narrowly brown tips, dark brown veins, and dark brown

pterostigma.

Abdomen black with tan lateral stripe on segments 1-3, tan basal ring-like spots on 4-7, and pruinose white dorsal surfaces on 8-10. Hamules and penis as in other *Philogenia* spp. Cerci bent sharply toward each other and a little downward at mid-length, thus rather forcipate (Fig. 1), tips slightly expanded but truncate, with only a small triangular part of medial flange visible in lateral view (Fig. 2), medial flange more apparent in ventral view (Fig. 3). Paraprocts in lateral view 4/5 as long as cerci, slightly bifid with a large blunt lateroventral apical projection, and a mediodorsal vertical tooth- or blade-like projection (Fig. 2). In dorsal view latter tooth is placed obliquely, lying in an anteromedial/posterolateral plane. Basodorsal 1/3 of paraproct a transverse right-angled shelf, thus forming the space visible in lateral view proximal to dorsal tooth (Fig. 2). Paraprocts slightly divergent in ventral view (Fig. 3).

Measurements (in mm): Total length including cerci 52, abdomen 42, hindwing 33. (Paratypes 47-56, 37-45, 29-38).

**FEMALE allotype** (no significant variation in other paratypes). — Similar to male, but differs in that: Face below level of clypeus grayer, compound eyes gray in life, black mesepimeral stripe suddenly paler dorsal to level of metaspiracle, abdomen with interrupted pale lateral stripe on segments 1-7, abdomen without pruinosity but segment 9 yellow-white dorsally, ovipositor extends slightly beyond tips of cerci. Hind lobe of prothorax evenly convex with lateral corners, anterior edge of central apophyseal pit is a slightly raised lip (Fig. 4).

Measurements (mm): Total length including cerci 46, abdomen 36, hindwing 33. (Other paratypes 47-48, 37-38, 34).

#### COMPARISON WITH OTHER SPECIES

*P. iquita* is most closely related to *P. macuma* Dunkle and *P. minteri* Dunkle. After a direct comparison of the holotype males of these 3 species, the following were the only significant or consistent differences. The male cerci of *macuma* are somewhat forcipate, very like those of *iquita* (DUNKLE, 1986, fig. 8), but the cerci of *minteri* are more down-turned (DUNKLE, 1986, fig. 1). The male paraprocts show the greatest differences and are each diagnostic (see Key). Abdominal segments 8-10 are pruinose in *iquita*, but only 9-10 are pruinose in the other species. The prementum and leg armature are black in *iquita*, the prementum is tan, the armature brown in the other species.

Comparing the allotype females of *minteri* and *iquita* showed that the major difference was the presence of lateral projections on the prothoracic hind lobe of *minteri*, but only corners there in *iquita*. The prementum and leg armature differ in color as in the males. The female of *macuma* is unknown.

Two female *Philogenia* collected at the type locality of *iquita* are not included in the type series because they are slightly smaller, exhibit subtle differences in

prothoracic sculpture, and lack tandem scars that male *iquita* might produce. One or both of these females might be the undescribed female of *P. berenice* Higgins (see Biology below).

Males of *iquita* will key to *macuma* or *minteri* in BICK & BICK'S (1988) key to *Philogenia* males. The following emendation adds *iquita* to that key. MAY (1989) added *P. leonora* to the same key at couplet 3.

- 21 Inferior appendages broad and "deformed looking" at apex ..... *minteri*
- 21' Inferior appendages tapering to a pointed dorsal or posterior apex ..... 21A
- 21A Inferior appendage with a posterior chisel-like apex, without a dorsal tooth ..... *macuma*
- 21A' Inferior appendage with a posterior conical apex, and with a large pointed dorsal tooth ..  
..... *iquita*

BIOLOGY

*P. iquita* was always found at or near hillside seepages in lowland tropical rainforest, where they resided whether the sky was sunny or overcast. If not perched over the water, they usually perched near the ground in depressions in the hillsides upslope of the seeps. They perched with wings spread in the undergrowth on stems, lestad-like, or on the tops of leaves, gomphid-like. In the gloomy forest understory these insects are difficult to see at all. A good collecting technique at this windless habitat was to slowly wave a net near a seep, when the slight movement of a leaf would give away the position of a *Philogenia* just landed there. No reproductive activity was seen in *P. iquita*, but all of the 3 type females bear scars on the prothorax just posterolateral to each end of the central apophyseal pit, indicating where the points of the dorsal teeth of the male paraprocts apparently engaged during tandem.

The paratype male from the Explornapo Camp was collected with 2 male *Philogenia berenice*, but no differences in microhabitat or behavior were noted. Other Odonata, all scarce, which appeared to be breeding in the seepages with *P. iquita* were: *Heteragrion* sp., *Polythore beata* (McLachlan), *P. derivata* (McLachlan), *Phasmoneura ephippigera* (Selys), *Psaironeura tenuissima* (Selys), and *Epigomphus occipitalis* Belle.

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REFERENCES

BICK, G.H. & J.C. BICK, 1988. A review of males of the genus *Philogenia*, with descriptions of five new species from South America (Zygoptera: Megapodagrionidae). *Odonatologica* 17: 9-32.

- COOK, C., 1989. *Philogenia reduunca*, a new damselfly from Ecuador (Odonata: Megapodagrionidae). *Fla Ent.* 72: 419-424.
- DE MARMELS, J., 1982. Dos nayades nuevas de la familia Megapodagrionidae (Odonata: Zygoptera). *Boln Ent. venezol.* (N.S.) 2: 89-93.
- DONNELLY, T.W., 1989. A new species of *Philogenia* from Honduras (Odonata: Megapodagrionidae). *Fla Ent.* 72: 425-428.
- DUNKLE, S.W., 1986. Four new species of *Philogenia* damselflies from Ecuador and Colombia (Zygoptera: Megapodagrionidae). *Odonatologica* 15: 43-50.
- MAY, M.L., 1989. Status of *Philogenia leonora* Westfall & Cumming (Zygoptera: Megapodagrionidae). *Odonatologica* 18: 95-97.