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Pesquisas em Geociências, 10 (1): 77-86, Mai./Ago., 1978.

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Publicado por

Instituto de Geociências

Portal de Periódicos
UFRGS

UNIVERSIDADE FEDERAL
DO RIO GRANDE DO SUL

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Data de publicação - Mai./Ago., 1978.

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A NEW GENUS AND TWO NEW SPECIES OF PLECOPTERAN INSECTS, FROM THE
TRIASSIC OF ARGENTINA

Irajá Damiani Pinto *
Ivone Purper *

SINOPSE

É descrito um novo gênero e duas novas espécies de insetos, Plecopteros: *Gondwanoperlidium argentinorum* Pinto et Purper, gen. et sp. nov. e *G. mendozensis* sp. nov. da Formação Potrerillos (Triassico Superior) de Mendoza, Argentina.

INTRODUCTION

Few years ago the senior author received samples with insects from Argentina to study, including material from Cacheuta, Mendoza Province. From this place one Protorthoptera *Notopamphagopsis bolivari* Cabrera, 1928 was already described. The authors present here the description of two new species and a new genus. They are doing a revision of the other forms that have been found associated to the present species.

Aknowledgments

Thanks are due to Professor Sergio Archangelsky, from the Museo de La Plata, Argentina and to Professor Mario Hünicken from Universidad Nacional de Cordoba for sending respectively the two specimens. To Dr. Edgar F. Riek from the Commonwealth Scientific and Industrial Research Organization, Australia, for discussing and putting at the disposition of the authors new papers, before been published.

To the following Institutions for continuous

ABSTRACT

It is described a new genus and two new species of Plecopteran Insects: *Gondwanoperlidium argentinorum* Pinto et Purper, gen. et sp. nov. and *G. mendozensis* sp. nov. from Potrerillos Formation (Upper Triassic), Mendoza, Argentina.

help to the researches of the authors: Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq), Fundação de Amparo à Pesquisa do Estado do Rio Grande do Sul (FAPERGS) and Câmara Especial de Pesquisa e Pós-Graduação da Universidade Federal do Rio Grande do Sul.

GEOGRAPHICAL AND STRATIGRAPHICAL DATA

The insects described were found at a place called Minas de Petroleo, Cacheuta, 14 km west from the City of Mendoza, Argentina.

The stratigraphy of the area was described by Frenguelli (1948) and a profile of the collecting place done by him (Fig. 35) is reproduced here at text-fig. 1.

The fossil insects were found at places 2, 3 and 4. The first one described probably proceeds from place 4.

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Text-fig. 1. Schematic profile of the southern side of the Cerro de Cacheuta, W of the building of the latter Administration of Yacimientos Petroliferos Fiscales (Y. P. F.) at Cacheuta.

- a) Cacheuta Beds (shales with *Estheria* and *Dicroidium*);
 b) Potrerillos Beds: 1. bed of sandstone with psephitic materials; 2. light-grey tuffs with *Cladophlebis mendozaensis* (left margins of the river Seco de las Minas);
 3. Light-gray tuffs and sandy tuffs with

Neocalamites carrerei, *Thinnfeldia praecordillerae*, *Cladophlebis mesozoica*, *Baiera cuyana*, *Ginkgoites truncata*, etc. 4. Grey and light brownish grey tuffs with *Equisetites fertilis*, *Yabeiella mareyesiacae*, *Xylopteris elongata*, *Cycadocarpidium minus*, *Sphenobaiera argentinae*,

etc.; 5. Light grey sandy tuffs with rare plant remains (*Xylopteris*, *Yabeiella*); 6. Conglomerates and sandstones with slope debris in the base;
 c) keratophyres. (Seg. Frenguelli, 1948).

SYSTEMATICS

Phylum	Arthropoda
Classis	Insecta
Sub-classis	Pterygota
Infra-classis	Neoptera
	Polyneoptera
Super-ordo	Plecopteroidea
Ordo	Plecoptera
Familia	Gripopterygidae

Sub-familia Euxenoperlinae Riek, 1976

Diagnosis

Rs distinctly up-arched after the first inter-radial cross-vein forming a large radial cell distinctly widened in middle, and sometimes secondarily divided with at least three radial cells. The first r-m cross-

vein joins the upper branch of M. The cubital field is distinctive. CuA diverges markedly from CuP at base so that CuA and CuP are widely separated, and subparallel, throughout. The stem of M is distinct to base.

Genus *Gondwanoperlidium* Pinto et Purper, gen. nov.

Diagnosis

Forewing with 27 to 37mm long. Sc ending a little beyond half-way in a short fork connecting with both C and R. Rs arising well before middle of wing, distinctly up-arched after the first inter-radial

cross-vein, forming a large widened radial cell. Typically 4-pectinate branches originating from Rs. Many cross-veins regularly spaced all over the wing.

Type-species *Gondwanoperlidium argentinorum* Pinto et Purper, sp. nov.
Potrerillos Fm., Cacheuta Group, Triassic Mendoza, Argentina

Occurrence

Triassic of Argentina and Australia.

triassicum Riek, 1956 (p.107-109, fig.4) from Denmark Hill, near top of Ipswich Series, Queensland; the paratype of the same (p. 109, fig. 5) from the locality of Dunstan, Queensland, which is much more similar to the new species described below than to the holotype.

Remarks

This genus is quite similar to *Euxenoperla* Riek, 1973. Differs from it by having a large wing, with 4-branches originating from Rs and many open spaced cross-veins throughout the wing. It is included in this genus the holotype of *Stenoperlidium*

Riek, 1973, transferred them to *Euxenoperla*, — but they differ from all other *Euxenoperla* by the size and by having 4-branches originating from Rs.

Pl. I, fig. 3; Pl. II, fig. 1

Derivatio nominis: From Republica Argentina where it comes from, and in honour of the argentinians colleagues.

Holotypus: An incomplete forewing. Museo de La Plata n^o 8908.

Locus typicus: At Cacheuta, 14 km W of Mendoza City, Pcia. of Mendoza, Argentina.

Stratum typicum: Potrerillos Formation, Cacheuta Group, Upper Triassic

Diagnosis

Broad forewing with rounded apex. Length, as preserved 20mm, calculate total length around of 30mm; width: 9mm; branches of Rs, M and Cu linked by cross-veins. M branching just before middle

length, with 5 cells between the branches; CuA with two long up-curved parallel branches, the first branching just before the branching of M.

Description

An incomplete forewing with 20mm of length, lacking most of the basal part. Sc ending at almost 2/3 of the wing length in a short fork, the upper arm not very well seen; the lower arm arching strongly downwards to meet R, and continuing across it in a strong cross-vein (ir) to Rs. R, a strong vein running parallel and close to C and linked to it by two oblique cross-veins. Rs with four branches. It is formed by a strong longitudinal vein that bends downwards at a slight angle until the point where arises its first branch. Here it forms two strong arms, the upper became parallel to R for some distance and deflected upwards to it. Its last branch is linked to R by a short cross-vein. Its branches are

linked, one to the other, by a few cross-veins. Radial space apparently with one cross-vein connecting the pterostigmatic area to middle way between the origin of R₃ and R₄. M with two strong branches having between them four cross-veins, the upper branch curves upward at the place where it is linked to Rs by a long oblique cross-vein. CuA strong vein with 2 long branches parallel and strongly up-curved to M branches. They are connected by cross-veins. CuA is long having a slight sinuosity near the posterior margin. Many cross-veins connect CuA to the posterior margin and to CuP that was destroyed.

Remarks

The present species is quite similar in the disposition of the veins to the specimen put by Riek 1956, as paratype of *Stenoperlidium triassicum* Riek, 1956, p. 109, fig. 5. It differs from the present species only slightly by "ir" been a little more distal than the fork of the Sc. However, as only part of it is known, it is not possible to make a

good comparison with it. Another form quite similar, but also too broken to be sure about is *Stenoperlidium* sp. in Riek 1955 (p. 688, fig. 40). The present species differs from the holotype of *S. triassicum* specially by having CuA dividing before the level of the bifurcation of M.

Diagnosis

Elongate forewing with rounded apex. Length as preserved 24mm. Calculate total length around

Description

An incomplete forewing with 24mm of length, lacking most of the basal and cubital parts. Sc ending at almost 2/3 of the wing length in a short fork; the upper arm longer, arching upwards to C, the lower arm arching strongly downwards to meet R just before "ir". R, a strong vein, running parallel and close to C and linked to it by four oblique cross-veins. Rs with four simple pectinate branches. Radial cell with a thin cross-vein at the distal end between the origin of R₃ and R₄. M with two

Remarks

It is more close to the anterior new species, but differs from it in: being more elongate (it has the same width: 9mm, but longer, about 37mm);

Derivatio nominis: Mendoza City

Holotype: An incomplete forewing. Universidad Nacional de Cordoba. CORD-PZ 336

Locus typicus: At Cacheuta, 14km W of Mendoza City, Pcia. of Mendoza, Argentina

Stratum typicum: Potrerillos Fm., Cacheuta Group, Upper Triassic

37mm; width 9mm. Branching of M just before middle length, with 9 cells between the branches.

strong branches having between them eight cross-veins, the upper branch not curved upwards at the place where it is linked to Rs. The base is broken and tilted downwards. Apparently Rs has its origin after the bifurcation of M. CuA area is broken and it is possibly to see very well only the long strongly up-curved branch of CuA parallel to M branches. The lower branch is not clearly seen but it seems to be as is represented in the Pl.I, fig. 4. Many cross-veins connect all branches in the wing.

having much more cross-veins between the veins; having the inter-radial cross-vein (ir) a little more distal from the forking of Sc, and from the cross-vein that links M to the tronc of Rs.

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Table I

From the apex to	<i>Stenoperlidium triassicum</i> Holotype	<i>S. triassicum</i> Paratype	<i>Gondwano- perlidium argentinarum</i>	<i>G. mendo- zensis</i>
R	2.1	1.8	3.0	4.3
the limit of the radial cell	3.3	3.6	3.6	5.5
1 ^o branch of Rs	8.0	8.2	9.0	12.8
ir	10.5	9.9	11.0	14.5
the forking of M	15.3	—	16.5	20.5
1 ^o CuA branch	6.2	—	8.0	9.0
forking of CuA	13.8	—	17.5	> 17.0
Length	27.0		30.0*	37.0*
Width	6.2	± 8.0	9.0	9.0

Comparative table between the species attributed to the new genus. Measurements in millimeters.

* inferred.

Plate I

Plate I

- Fig. 1, 2 — *Gondwanoperlidium triassicum* (Riek, 1956) from Denmark Hill, Top of Ipswich Series (Triassic). Queensland. 1-Holotype 2-Paratype
- Fig. 3 *Gondwanoperlidium argentinorum* Pinto et Purper, gen. et sp. nov. from Cacheuta, Potrerillos Fm. (Upper Triassic), Argentina. Drawing of the holotype n^o 8908, Museo de La Plata.
- Fig. 4 *Gondwanoperlidium mendozensis* Pinto et Purper, sp. nov. from Cacheuta, Potrerillos Fm. (Upper Triassic), Argentina. Drawing of the holotype n^o CORD-PZ 336, Universidad Nacional de Cordoba.

Fig. 1 - *Gondwanaperlidium argentinorum* Pinto et Purper, gen.et sp.nov.
Forewing of the holotype n° 8908, Museo de La Plata.
From Potrerillos Fm. (Upper Triassic), Cacheuta, Prov.Mendoza,
Argentina.

Fig. 2 - *Gondwanaperlidium mendozensis* Pinto et Purper, sp.nov.
Forewing of the holotype n° CORD-PZ-336.
From Potrerillos Fm. (Upper Triassic), Cacheuta, Prov.Mendoza,
Argentina.