EXTENTION OF THE CURRENT NORTHERN DISTRIBUTION
RANGE OF FRESHWATER MUSSEL *DIPLODON CHILENSIS*
(GRAY, 1828) (BIVALVIA:HYRIIDAE) IN CHILE

*EXTENSION DEL LIMITE NORTE DE LA DISTRIBUCION
ACTUAL DEL CHORITO DE AGUA DULCE DIPLODON
CHILENSIS (GRAY, 1828) (BIVALVIA:HYRIIDAE) EN CHILE*

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ABSTRACT

The extent of the northern distribution range of *Diplodon chilensis* is reported herein from specimens collected in the Río Grande, an affluent of the Río Limari located to the south of the village of Carachilla (30°28'S;71°05'W).

Diplodon chilensis (Gray 1828) is the most abundant freshwater bivalve in Chile, with the greatest biomass in the country's continental waters. According to Haas (1969), *D. chilensis* inhabits the entire country. Current reports (Parada & Peredo 2002, 2006) indicate a *D. chilensis* distribution range stretching from Río Mataquito, Curicó, Region VII (34°58'S;71°48'W) in the north to Río Negro, Ofqui Isthms (46°37'S;74°19'W), Region XI, in the south.

According to Parada & Peredo (*op cit.*) this distribution ranges matches that of the subspecies *D. chilensis chilensis*, since at present, *D. chilensis patagonicus*, the other subspecies described by Haas (*op cit.*), has not been reported in Chile. The distribution range of the latter subspecies is mainly restricted to the Chilean-Argentinean Patagonia area. According to Bonetto (1973), *D. ch. patagonicum* is found along the Araucanian Argentinean lakes chain, from Mendoza Province to Lake Futalauquén including the rivers Negro and Neuquén.

The present communication reports the extent of the current northern distribution range of *D. chilensis* in Chile.

In February 2006, 15 specimens of *D. chilensis* were collected in Río Grande, an affluent of Río Limarí, located to south of the village Carachilla (30°28'S; 71°05'W). The specimens were taken from areas with low current, where the muddy substrate, was mixed with boulders (18cm diameter average). Specimens were deposited in collection of the Biological Department of the Catholic University of Temuco, Chile.

In the laboratory, valve morphology and biometric characteristics were determined for each specimen including valve length (VL), width (VW) and height (VH); hinge and teeth characteristics, sex determination by gonad smears; and the presence of embryos or larvae in female inner demibranchs. At the population level, the collected specimens were used to determined the size structure and Pearson's correlation analysis between VL and VW and between VL and VH. The individuals collected

were also compared to specimens in the collection of the Biological Department of the Catholic University of Temuco, Chile.

The biometric analysis showed a size range of 59.3 to 33.0mm VL, 28.5 to 17.7mm VH and 21 and 9.4mm VW in the Río Grande specimens. Correlations between VL - HV and VL - WV were highly significant (Figs.1, 2).

The size range and population size structure matched those registered in other lentic and lotic populations of *D. chilensis*, in central-southern Chile (Parada *et al.* 1990; Parada & Peredo 1994) (Fig.3). It should be noted that specimens collected in the present study have very thin and, therefore, weak valves, unlike specimens from the lotic populations in central-southern Chile. These differences can be attributed to water flow and water currents in central-southern as compared to northern-central Chile. The sexual proportion was determined to be 1:1.

Only some females were gravid and these had inner demibranchs crowded with gloquidium larvae. No females were recorded with embryos in their demibranchs, probably due to collection date (end of summer).

The morphological features of the larvae, especially the shape, size, and position and shape of the larval tooth, coincided with the characteristics described by Parada *et al.* (1989). Valve analysis, hinge characteristics, and especially the number and type of teeth corresponded to those described by Parada *et al.* (1989) for *Diplodon chilensis*.

This finding supports the extension of the current *D. chilensis* distribution range and, since the valvular morphologic features correspond to those reported by Haas (1969), the specimens belong to the subspecies *Diplodon chilensis chilensis*.

Figure 1: Pearson's correlation between valve length (VL) and valve width (VW) from the Río Grande *Diplodon chilensis* population ($p < 0.05$).

Figura 1: Correlación de Pearson entre la longitud valvar y el ancho valvar de la población de *Diplodon chilensis* de Río Grande ($p < 0,05$).

FIGURE 2: Pearson's correlation between valve length (VL) and valve height (VH) from the Río Grande *Diplodon chilensis* population ($p < 0.05$).

FIGURA 2: Correlación de Pearson entre la longitud valvar y el alto valvar de la población de *Diplodon chilensis* de Río Grande ($p < 0,05$).

FIGURE 3: Size structure from the Río Grande *Diplodon chilensis* population.

FIGURA 3: Estructura de tamaños de la población de *Diplodon chilensis* de Río Grande.

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