

A NEW RECORD OF *PARACOROPHIUM*
HARTMANNORUM ANDRES, 1975, FROM THE
CHILEAN COAST, WITH A DESCRIPTION OF THE
ADULT (AMPHIPODA: COROPHIIDAE)

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Abstract.—The adult male and female of *Paracorophium hartmannorum* Andres, 1975, are described, and *P. chilensis* Varela, 1983, is placed in synonymy. The main differences between adults and juveniles are longer dactyl teeth on the palm of the second gnathopod and the toothed posterior margin of the bases of pereopods 6 and 7 in the adults. The present material extends the geographical range of the species north of Valparaiso.

Paracorophium hartmannorum was described by Andres (1975) from a juvenile male 2.8 mm in length collected by G. Hartmann-Schröder from Estero Lengua (36°46'S, 73°10'W) near Concepción, Chile. Andres recorded his new species from four localities between Constitución and Valdivia, in southern Chile. Collections made in 1976 from the mouth of Rio La Ligua (32°25'S, 71°26'W), north of Valparaiso (Fig. 1), extend the known range to the north, and enable me to describe the adults. The latter have been compared with Varela's description and figures of *P. chilensis*, from Valdivia, which is considered a synonym of *P. hartmannorum*.

Paracorophium hartmannorum Andres
Figs. 2-4

Paracorophium hartmannorum.—Andres, 1975:127-130, figs. I-V.

Paracorophium chilensis.—Varela, 1983: 32-36, figs. 5-6.

Description of male.—Length 3.8-4.4 mm. Head with lateral lobes produced. Antennae 1 and 2 as described by Andres (1975); segments 2 and 3 of antenna 2 almost 3 times as wide as segment 4. Lower

lip, mandible, maxilla 2, and maxilliped similar to Andres' description. First maxilla, outer plate wide, distal margin with 8 to 9 bifid spines, second segment of palp with 5 simple apical spines. Second maxilla like that of *Paracorophium excavatum* Hurley, inner plate slightly shorter, inner margin fringed with long fine setae along about $\frac{2}{3}$ of its length, setae also on distal margin; outer plate with setae only on distal margin. First gnathopod: coxal plate large, slightly constricted proximally, with 2 strong spines on posterior margin, 15 setae on ventral margin; basis proximally constricted, group of 3 long simple setae and 4th more distal seta on posterior margin, inner surface with 2 simple setae on middle region, distal end with 5 long simple setae on medial surface; ischium with same proportions as in *P. excavatum*; merus with same proportions as ischium, 3 short plumose setae on posterior margin, inner surface of distal end toward posterior with 3 or 4 short plumose setae; carpus, anterior margin with 4 or 5 long simple setae in middle to distal region, anteriodistal angle with 3 long plumose setae, posterior margin with 16 long slender plumose setae on outer surface and 10 long slender plumose setae on border, inner surface with oblique row of long and fine plu-

mose setae from posteroproximal to $\frac{2}{3}$ anterodistal end of segment; propod, anterior margin with 2 long simple setae on middle region, anterodistal angle with 5 long simple setae, first shortest, inner surface with 2 or 3 setae, palm with 8 short spines on outer surface, and 5 or 6 on inner surface, margin of palm and distal part of posterior margin of propod with several fine teeth giving appearance of little brush; dactyl slightly longer than palm, with long spine on proximal anterior margin, posterior margin with inconspicuous tooth at proximal end and strong spine about $\frac{1}{3}$ from distal end, margin finely serrate proximal to spine. Second gnathopod, coxal plate subrectangular with 7 or 8 short spines on ventral margin, 1 or 2 strong spines on posterior margin; basis constricted proximally, posteriorly convex as Hurley (1954) described for *P. excavatum*, 2 or 3 long setae on posterior margin, 1 or 2 little spines on distal end of anterior margin, proximal end $\frac{1}{2}$ width of distal end; ischium $\frac{1}{3}$ basis length with 2 spines on distal posterior margin; merus with distal end free, anterior margin divided, forming inner and outer borders, latter forms with posterior margin almost rectangle, merus length 3 times its width, distal end with 9 long strong plumose setae, most of them reaching distal end of propod, inner border of anterior margin and posterior margin forming lanceolate structure with 18 long plumose setae on inner border, posterior margin with 3 or 4 simple setae on distal third; carpus, posterior end articulating with anterior margin of merus, posterior margin of carpus with 13 or 14 long plumose setae, anterodistal angle with 4 or 5 long simple setae, inner surface with oblique row of long plumose setae directed from anterodistal to posteroproximal; propod quadrate, anterior margin with 6 or 7 plumose setae forming 2 or 3 groups, anterodistal angle with 3 or 4 simple setae, posterior margin produced distally into strong, narrow defining tooth, palm with strong median tooth $\frac{1}{2}$ as long

as defining tooth, deep excavation between teeth with 3 plumose setae, median tooth with 3 or 4 plumose setae on its base, defining tooth with 2 or 3 plumose setae on its tooth base, inner surface of palm with 2 or 3 short plumose setae on tooth base and 2 on deep excavation between teeth; dactyl strong, curved, reaching by half its length beyond defining tooth, anterior margin with simple spine near proximal end, posterior margin with 2 or 3 short simple spines on distal $\frac{1}{3}$ and 3 or 4 on proximal end. Pereopods: Third, Fourth and Fifth without differences from Andres' (1975) description. Basis of Pereopod 5 with proximal posterior lobe. Basis of Pereopod 6 with proximal posterior lobe, distal lobe less evident but with conspicuous toothed margin, short plumose spines on margins of both lobes. Pereopod 7, basis with strongly toothed posterodistal lobe, short plumose spines on margin. Uropods: First similar to Andres' description, peduncle produced into ventral process beneath rami as in *P. excavatum* and *P. lucasi* (Thompson), 4 spines on peduncle outer dorsal margin and 2 on inner dorsal margin; outer ramus with 2 lateral spines at about midlength and 3 or 4 dorsal spines at apex; inner ramus with one spine on lateral margin and 3 or 4 at apex. Second with single dorsal spine on peduncle distolateral corner, outer ramus shorter than inner with single spine at midlength of lateral margin and 4 at apex; inner ramus with 2 spines near midlength on dorsal surface and 4 at apex. Third as in Andres' description, with a few more apical setae than shown by Varela (1983). Telson similar to Andres' description, with slightly different setation as shown in Figure 4. Epimera: First with 3 or 4 plumose setae (Varela, 1983, shows 2 setae); second, with long plumose setae on ventral margin and distal part of posterior margin which is slightly toothed; third wide, without setae.

Description of female.—Length 2.5–4.8 mm. Antenna 2 with second and third pe-

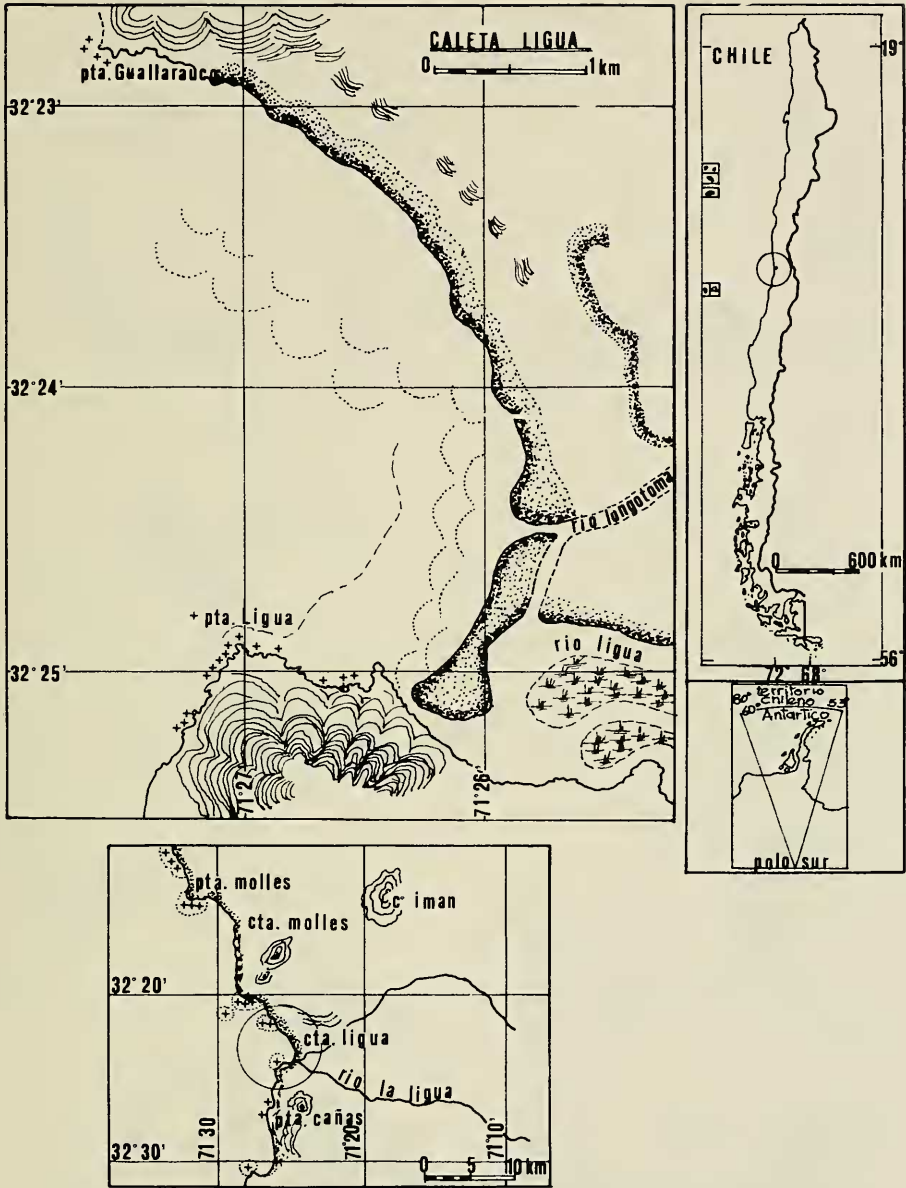


Fig. 1. Map of Central Chile showing the collection site.

duncle segments not wide, just twice length of fourth segment. Gnathopods: First much as in male. Second with propod and carpus slender, palm shorter than in male, without teeth, armed only with long plumose setae, defining tooth inconspicuous. Pereopods:

Sixth with basis without teeth on posterior margin, posterior lobes not evident. Seventh with basis without teeth on posterior margin or if present, teeth very weak; lobes not evident, general appearance as in Figure Vc of Andres (1975).

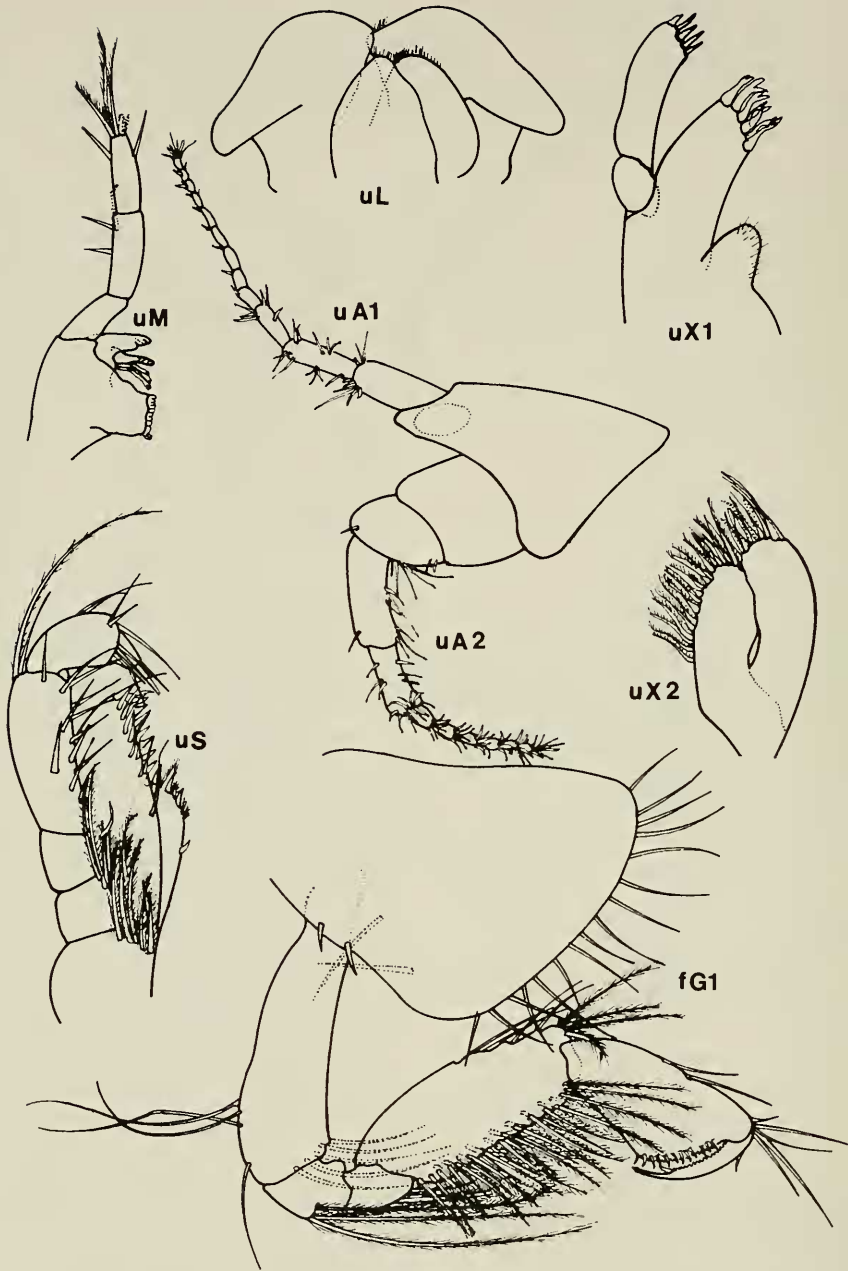


Fig. 2. *Paracorophium hartmannorum*, male "u" modified from Andres (1975); Male "f," length 3.8 mm. A, Antenna; C, Head; G, Gnathopod; I, Inner plate or ramus; L, Lower lip; M, Mandible; P, Pereopod; R, Uropod; S, Maxilliped; T, Telson; W, Pleon; X, Maxilla. Lower case letters to left of capital letters refer to specimens cited in captions; lower case letters to the right are as follows: d, dorsal; r, right; l, left.

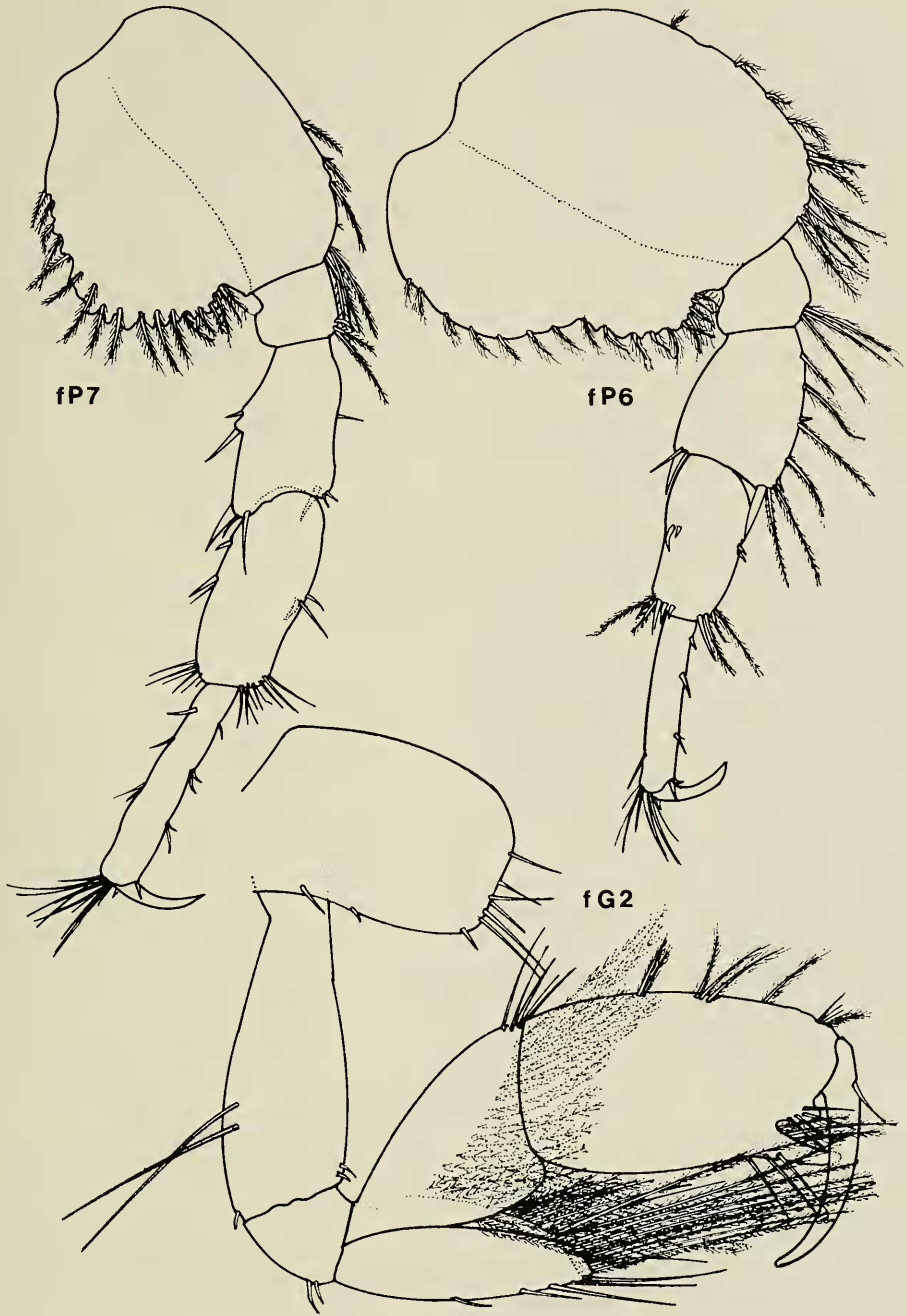


Fig. 3. *Paracorophium hartmannorum*, male "f," length 3.8 mm. Symbols as in Fig. 2.

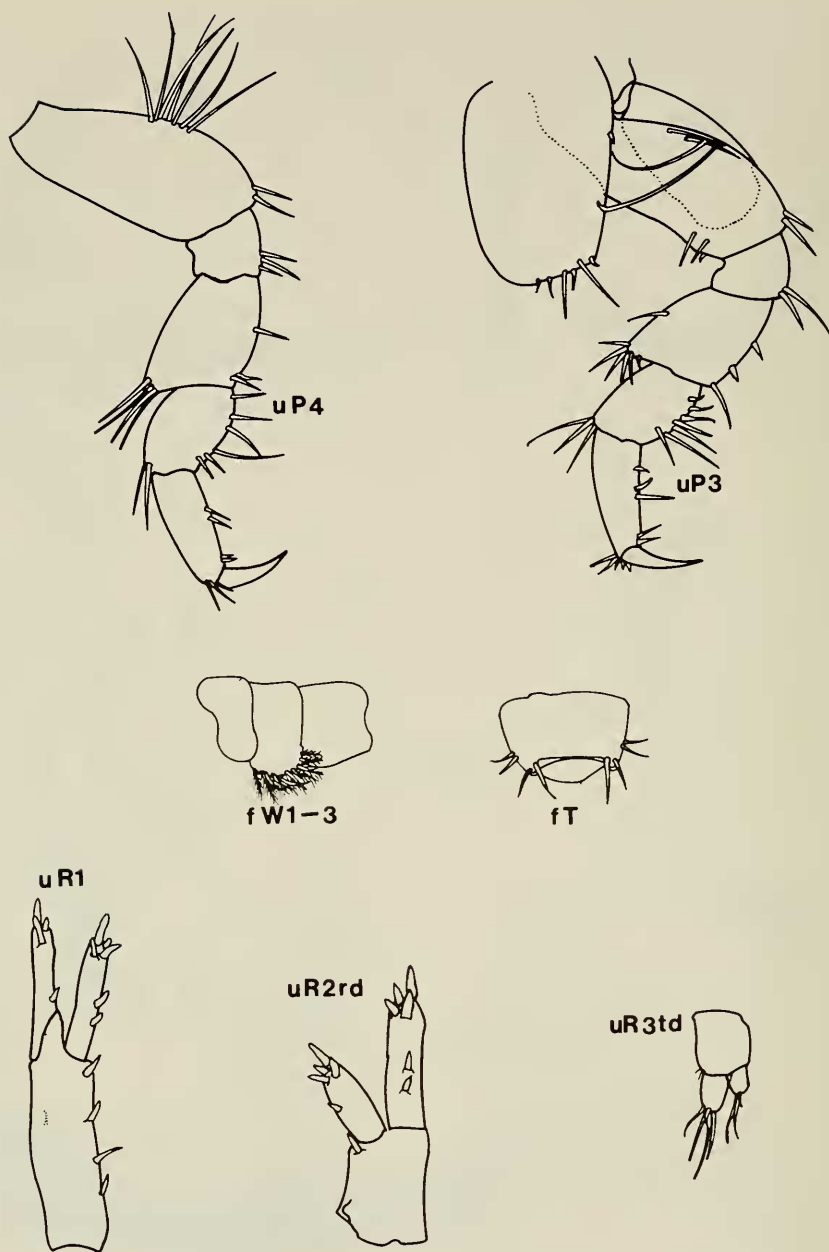


Fig. 4. *Paracorophium hartmannorum*, male "u" modified from Andres (1975); Male "f," length 3.8 mm. Symbols as in Fig. 2.

General Remarks

Paracorophium hartmannorum closely resembles *P. excavatum*, but setation and proportional lengths of articles of the ap-

pendages are different as stated by Andres (1975). The most conspicuous characteristics in the adult form are greater dactyl length and presence of teeth on palm of second

gnathopod, and toothed posterior margins of basis in fourth and fifth pereopods. The geographical distributions given by Andres (1975) is from Constitución (35°20'S, 72°25'W) to Valdivia (Niebla, Río Valdivia, 39°51'S, 73°24'W); there were two intermediate localities, Río Andalien (36°44'S, 73°01'W) in Concepción Bay and Estero Lenga (36°46'S, 73°01'W) in San Vicente Bay. Varela's specimens of *P. chilensis* were from Playa Caleta, Mehuín (39°26'S, 73°13'W). The present material extends the northern geographical range to La Ligua (32°25'S, 71°26'W). All these localities have similar environmental characteristics, especially fluctuating salinity, from 0.67‰ to 38.2‰ (Andres 1975). In the mouth of Río La Ligua the salinity varied from 8‰ to 22‰ depending on the effects of tides. The species is found mainly in fine sand (0.15–0.20 mm in diameter).

Key to the Species of *Paracorophium*
(modified and expanded from
Hurley (1954) and Andres (1975))

1. Outer plate of maxilliped with fringe of many fine setae along inner margin; first, second and third epimera all with marginal fringes of long slender setae; pereopods 5–7 with long fine setae marginally on most segments; antenna 2 of male with 4th peduncle segment not produced forward markedly as lobe
 *P. lucasi* Hurley
- Outer plate of maxilliped with 8 or 9 slender spines along inner margin; third epimeral plate lacking marginal fringe of setae; pereopods 5–7 with only a few marginal setae 2
2. Antenna 2 in male, 4th peduncle segment produced distoventrally into distinct lobe; median tooth on palm of gnathopod 2 almost as long as defining tooth; dactyl not reaching beyond defining tooth; posterior margin of basis of pereopods 6–7 entire *P. excavatum* (Thompson)

- Antenna 2 in male 4th peduncle segment not produced distoventrally into lobe; median tooth on palm of gnathopod 2 half as long as defining tooth; dactyl overreaching defining tooth by about half its length; posterior margin of basis of pereopods 6–7 toothed *Paracorophium hartmannorum* Andres

Acknowledgments

I wish to thank Dr. Juan Cancino, Mr. L. Nelson, Ms. I. Bahamondes, Ms. A. Mezey, and Mrs. S. Montalva who took the samples as part of a research project in a class on Marine Ecology (BIO-320, 1976) at the Pontificia Universidad Católica de Chile, Laboratorio de Zoología. I would also like to thank Dr. Juan Carlos Castilla of the Grupo de Ecología Marina, Pontificia Universidad Católica de Chile, who encouraged me to work on amphipods, for his constant advice during my stay at the Laboratorio de Zoología. I am also grateful to all who made this work possible, especially Mr. Leonel Jofré who drew the figures from my rough drafts. Drs. J. Laurens Barnard, Thomas E. Bowman, and Juan Carlos Castilla reviewed the manuscript and offered helpful comments. This work was finished while the writer was working at Facultad de Ciencias del Mar, Universidad del Norte, Coquimbo, Chile.

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