

# A new species of *Scherocumella* (Crustacea, Cumacea) from a coral lagoon of Lifou, New Caledonia

Jordi CORBERA

Carrer Gran, 90, E-08310 Argentona (Spain)

corbera@sct.ictnet.es

---

Corbera J. 2004. — A new species of *Scherocumella* (Crustacea, Cumacea) from a coral lagoon of Lifou, New Caledonia. *Zoosystema* 26 (1) : 65-71.

## ABSTRACT

### KEY WORDS

Crustacea,  
Cumacea,  
Nannastacidae,  
*Scherocumella*,  
West Pacific,  
new species.

A new species of Nannastacidae (Cumacea), *Scherocumella boxshalli* n. sp., is described from a coral lagoon of Lifou, Loyalty Islands, New Caledonia. Genus *Scherocumella* Watling, 1991 occurs typically in shallow waters of the Indo-West Pacific region. *S. boxshalli* n. sp. differs from other species in the genus in having a short uropod peduncle, which is shorter than (in female) or as long as (in male) the last abdominal somite.

## RÉSUMÉ

### MOTS CLÉS

Crustacea,  
Cumacea,  
Nannastacidae,  
*Scherocumella*,  
Pacifique Ouest,  
nouvelle espèce.

Une nouvelle espèce de *Scherocumella* (Crustacea, Cumacea) d'un lagon de Lifou, Nouvelle-Calédonie.

Une nouvelle espèce de Nannastacidae (Cumacea), *Scherocumella boxshalli* n. sp., est décrite d'un lagon de Lifou, îles Loyauté, Nouvelle-Calédonie. Le genre *Scherocumella* Watling, 1991 se trouve dans les eaux peu profondes de la région Indo-Ouest Pacifique. *S. boxshalli* n. sp. diffère des autres espèces du genre par son court pédoncule uropodal, lequel est plus court (chez la femelle) ou aussi long (chez le mâle) que le dernier somite abdominal.

---

## INTRODUCTION

During October–November of 2000 “Atelier Biodiversité Lifou 2000”, a coastal biodiversity evaluation expedition was staged on Lifou (Loyalty Islands), in a collaborative effort between the French Institut de Recherche pour le Développement and the Muséum national d’Histoire naturelle, Paris, with financial support from the Totalfina Foundation. The main sampling effort of some 30 participants of nine nationalities focused on Baie du Santal, on the NW coast of the island, but other habitats such as anchialine caves and small reef lagoons on other parts of the island were also surveyed. This paper deals with the description of a new cumacean species of the genus *Scherocumella* discovered in one of these marginal habitats.

The genus *Scherocumella* was erected by Watling (1991) to accommodate some species of *Nannastacus* Bate, 1965 having anterolateral angle in female acute but not projecting, pseudorostral lobes united in front of head, second article of the first antenna shorter than or equal to the third and uropod peduncle longer than last abdominal somite. Watling included in this genus 12 species. Later on, Mühlenhardt-Siegel (1996) described a species, *S. micronodosus*, from the Maldives Islands and Petrescu (1997a) described two other species, *S. fagei* and *S. malayensis*, from the Malayan waters. All the species of the genus *Scherocumella* live in shallow waters and are distributed in the tropical Indo-West Pacific region except for *S. longirostris* (Sars, 1878) from the Eastern Atlantic and Mediterranean Sea (see Petrescu 1997b).

The present contribution deals with a sample from Lifou Island (New Caledonia) that gives a species of this genus new to science.

## MATERIAL AND METHODS

A single sample was collected by snorkeling, using a fine-mesh hand net swept just above the surface of the sediment (typical white coral sand) in about 1 m water depth in a shallow lagoon

within the Bay of Wadra, SE of Lifou, at 21°6.0’S, 167°24.7’E, in the Loyalty Islands (New Caledonia).

The specimens were dissected in lactic acid. Material preserved in permanent glass slides was mounted in Fauré medium sealed with nail varnish. Drawings were prepared using a camera lucida on an Olympus microscope. An adult female was examined with a Hitachi scanning electron microscope; the specimen was prepared by dehydration through graded ethanol, critical point dried, mounted on stubs and sputter-coated with gold. The terminology follows Bacescu & Petrescu (1999). The material is deposited in the crustacean collection of the Muséum national d’Histoire naturelle, Paris, section Arthropodes (MNHN), and in the cumacean collection of the Institut de Ciències del Mar, Barcelona (ICM).

## SYSTEMATICS

Order CUMACEA Kröyer, 1846  
Family NANNASTACIDAE Bate, 1866  
Genus *Scherocumella* Watling, 1991

*Scherocumella boxshalli* n. sp.  
(Figs 1–3)

TYPE MATERIAL. — **New Caledonia.** Loyalty Islands, Lifou, coral lagoon, Bay of Wadra, 1 m depth, white coral sand, 21°6.0’S, 167°24.7’E, 20.X.2000, G. A. Boxshall coll. Holotype: ovigerous ♀ dissected on 2 slides (MNHN-Cu981). Paratypes: 1 adult ♂ dissected on 2 slides (MNHN-Cu982); 2 ♂♂ and 1 ovigerous ♀ (MNHN-Cu983); 1 ovigerous ♀ and 2 ♂♂ (ICM-CUM0035).

ETYMOLOGY. — Named in honour of Geoff A. Boxshall (London) who kindly offered this material to me, and in recognition of his wide contribution to the knowledge of crustaceans.

## DESCRIPTION

Adult female, total length 1.2 mm. Carapace twice as long as high and more than one third of total body length; covered by scales near the lateral margin, which disappear dorsally; with some

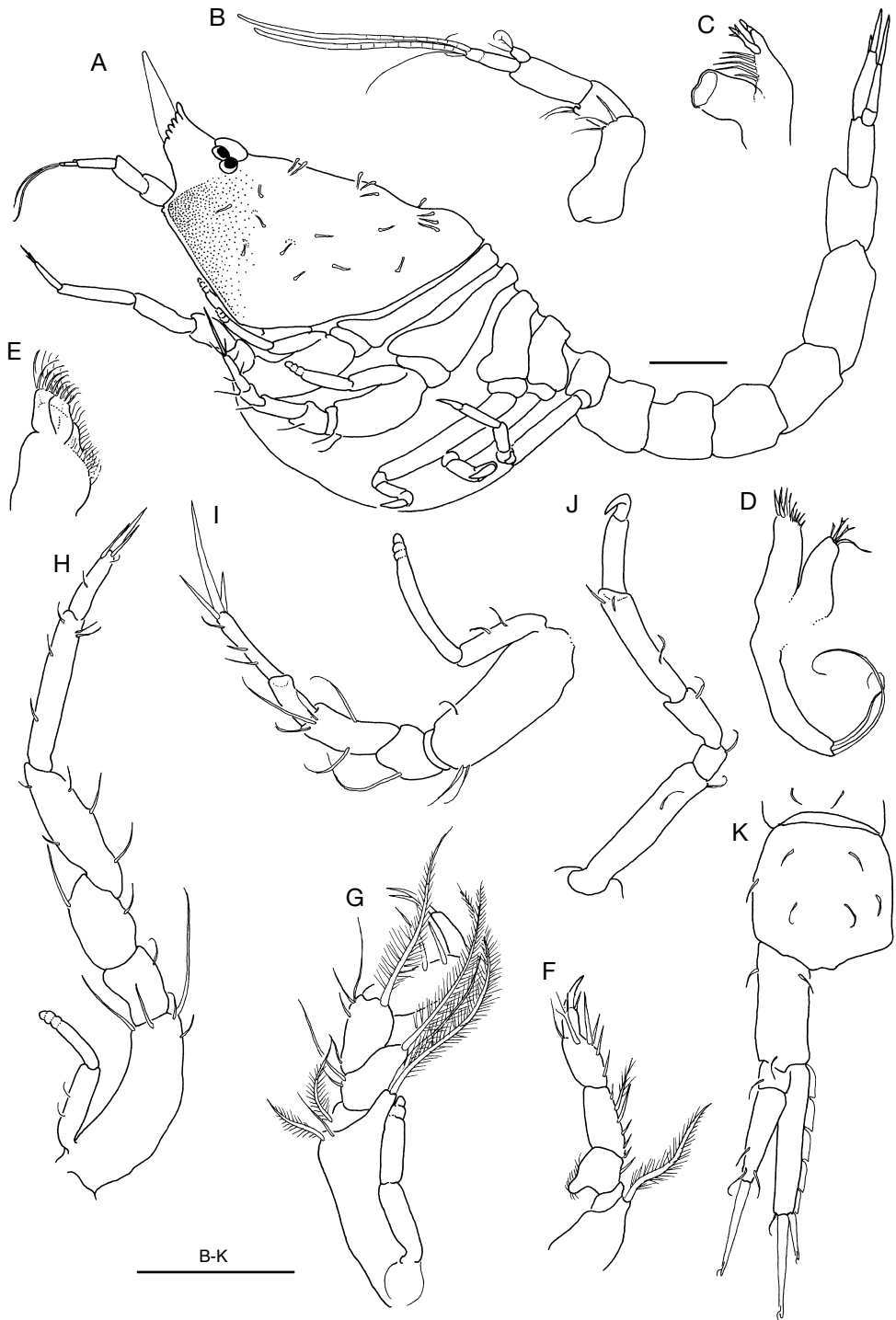


FIG. 1. — *Scherocumella boxshalli* n. sp., Lifou, Loyalty Islands, New Caledonia, adult ♀ holotype (MNHN-Cu981); **A**, whole body in lateral view; **B**, antenna 1; **C**, mandible; **D**, maxilla 1; **E**, maxilla 2; **F**, maxilliped 2; **G**, maxilliped 3; **H**, pereopod 1; **I**, pereopod 2; **J**, pereopod 5; **K**, uropod. Scale bars: 100 µm.

club-shaped setae clustering in small groups near middorsal line. Pseudorostral lobes meeting in front of head. Eyes paired, dorsolateral, with well developed lenses and pigmented. Anterolateral angle slightly acute. Pereon with five somites visible dorsally and laterally. Pleon slightly shorter than the rest of body, without free telson. Exopodites on third maxilliped and first and second pereopods.

Antenna 1 peduncle article 1 as long as other two combined; article 2 shorter than 3, with a small tubercle and two setae on distal outer corner; accessory flagellum minute, main flagellum two-segmented with two distal aesthetascs. Mandible, pars incisa with three teeth, lacinia mobilis, five spine-like setae between pars incisa and pars molaris, pars molaris truncated. Maxilla 1 protopod with robust setae of decreasing length, palp longer than protopod and with two simple filaments. Maxilla 2 with the endites exceeding the protopod, with simple setae on its top margin. Maxilliped 2 with a long plumose seta in distal inner corner of basis; ischium very short; merus with a rounded tubercle produced backwards; carpus, the longest segment except basis, with setules and a plumose seta on inner margin; dactylus with a long distal claw. Maxilliped 3 basis longer than the three following segments together, produced distally reaching half length of merus, with two long plumose setae; merus slightly produced distally with a long plumose seta; carpus shorter than propodus, with a long plumose seta; dactylus half length than propodus. Pereopod 1 basis shorter than the three following segments together, with some simple setae on its distal margin; carpus as long as propodus and twice as dactylus. Pereopod 2, basis as long as the following four segments together; ischium very short; carpus longer than propodus; dactylus as long as carpus, with three distal spine-like setae. Pereopod 5, basis about one third of the entire pereopod, carpus longer than propodus.

Peduncle of uropod slightly shorter than the last pleonite, as long as exopod and shorter than endopod. Exopod longer than its distal seta. Endopod with hyaline serration on the inner margin, with two terminal flagellate spine-like setae.

Adult male total length 1.22 mm. Carapace more than one third of total length, with few club-shaped setae. Pseudorostrum directed forward and shorter than in female. Eyes paired, located dorsolaterally, pigmented and more developed than in female. Exopodites on third maxilliped and from first to fourth pereopods.

Antenna 2 peduncle five-segmented, with sensorial setae on articles fourth and fifth, flagellum very long reaching beyond the fifth pleonite. Maxilliped 1, carpus with six multidenticated flattened setae and a row of simple setae on the inner margin; propodus with a long plumose seta; dactylus rounded with two short apical setae. Maxilliped 3, basis longer than rest of limb, slightly produced distally with two long plumose setae on the process and two other on the distal margin; merus and carpus with a long plumose seta; propodus twice length of dactylus. Pereopod 1, basis strong and longer than the three following segments combined; propodus shorter than carpus; dactylus half length of propodus. Pereopod 2, basis strong and as long as the rest of appendage; dactylus 1.5 times longer than propodus, with a short simple seta on each margin and four terminal simple setae, one longer than dactylus. Pereopods 3 and 4 with strong basis, carpus longer than propodus. Pereopod 5, basis shorter than one third of total appendage length, carpus twice as propodus.

Peduncle of uropod as long as the last pleonite with hyaline serration on the inner margin, and longer than the rami. Exopod shorter than its distal seta. Endopod with hyaline serration on the inner margin, with one distal and two terminal flagellate spine-like setae.

#### REMARKS

*Scherocumella boxshalli* n. sp. agrees with the genus diagnosis in having anterolateral angle in female acute but not projecting, pseudorostral lobes united in front of head and second article of the first antenna shorter than the third. However, the uropod peduncle is not longer than the last abdominal somite. Petrescu (1997a) suggests adding characteristics of mouth appendages after the observations made on two species, *S. fagei*

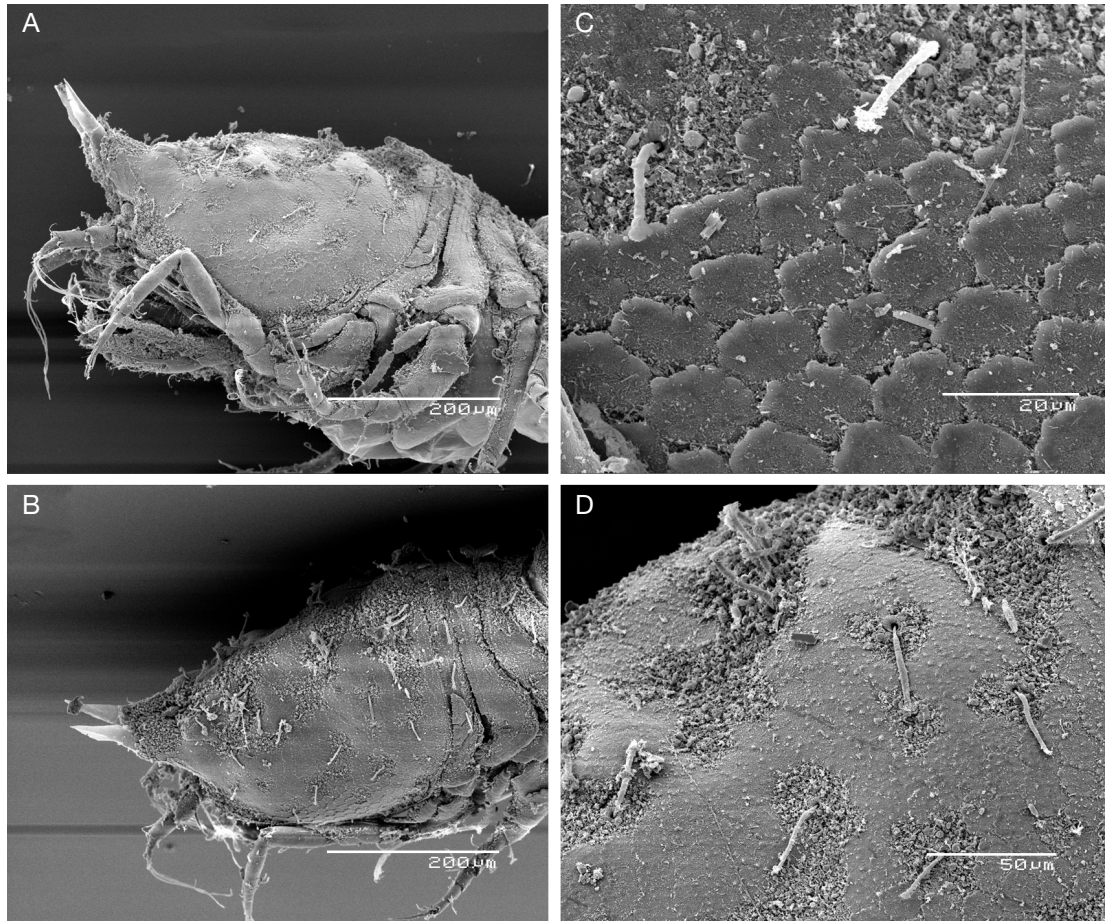


FIG. 2. — *Scherocumella boxshalli* n. sp., Lifou, Loyalty Islands, New Caledonia, SEM photos, adult ♀; **A**, carapace in lateral view; **B**, carapace in dorso-lateral view; **C**, microstructure of integument near the lateral margin showing the scales and two club-like setae; **D**, microstructure of integument near the middorsal line, where the scales are not visible and the club-like setae are more abundant. Scale bars: A, B, 200 µm; C, 20 µm; D, 50 µm.

Petrescu, 1997 and *S. nasuta* (Zimmer, 1914): lacinia mobilis of mandible with four teeth and maxilla 1 with only one filament on the palp. However, these characteristics were not observed on *S. boxshalli* n. sp.

The genus *Scherocumella* has a combination of characters from the genera *Nannastacus* and *Cumella* Sars, 1865 and there may exist a gradation between the two genera. It is suggested including the new species in the genus *Scherocumella* because of the characteristics mentioned above and the general shape of the cara-

pace, which is more similar to the genus *Cumella* than the genus *Nannastacus*.

*Scherocumella boxshalli* n. sp. is closely related to *S. micronodosa* Mühlenhardt-Siegel, 1996 by its short uropod peduncle but differs from it by lacking tubercles and minute nodules on the carapace and by having a first pereopod reaching beyond the tip of pseudorostrum.

#### Acknowledgements

This is a contribution to “Atelier Biodiversité Lifou 2000”, an international expedition to the

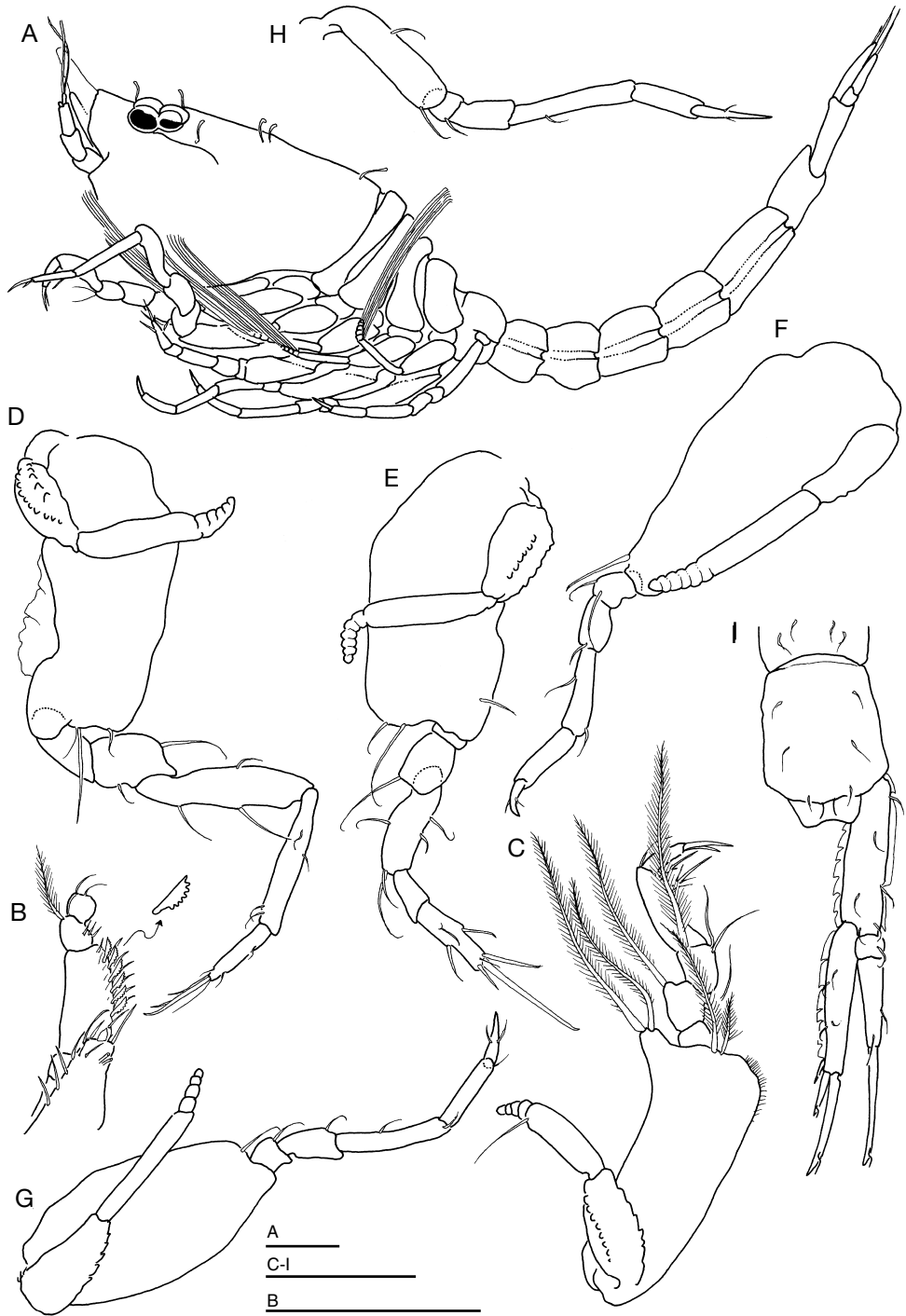


FIG. 3. — *Scherocumella boxshalli* n. sp., Lifou, Loyalty Islands, New Caledonia, adult ♂ paratype (MNHN-Cu982); **A**, whole body in lateral view; **B**, maxilliped 1; **C**, maxilliped 3; **D**, pereopod 1; **E**, pereopod 2; **F**, pereopod 3; **G**, pereopod 4; **H**, pereopod 5; **I**, uropod. Scale bars: 100  $\mu$ m.

Loyalty Islands planned to survey the marine biodiversity, sponsored by the Totalfina Foundation. I acknowledge Profs Geoff Boxshall (Department of Zoology, The Natural History Museum, London) and Philippe Bouchet (Département Systématique et Évolution, MNHN) for the loan of the material described herein.

## REFERENCES

- BACESCU M. & PETRESCU I. 1999. — Ordre des cumacés (Cumacea Krøyer, 1846), in FOREST J. (ed.), *Traité de Zoologie*, Tome VII Fascicule IIIA Crustacés Péracarides. *Mémoires de l'Institut océanographique* 19: 391-428.
- MÜHLENHARDT-SIEGEL U. 1996. — Cumacea (Crustacea) from the Red Sea and the Maldives (Indian Ocean) in the collection of the Zoological Museum, Hamburg, with the description of seven new species and a new genus. *Beaufortia* 46 (7): 105-134.
- PETRESCU I. 1997a. — Nannastacidae (Crustacea: Cumacea) from the Malayan shallow waters (South China Sea). *Beaufortia* 47 (4): 109-151.
- PETRESCU I. 1997b. — Cumacea, in GUTU M. (ed.), Results of the zoological expedition organized by "Grigore Antipa" museum in the Indonesian Archipelago (1991). I. Peracarida (Crustacea). *Travaux du Muséum national d'Histoire naturelle "Grigore Antipa"* 38: 115-175.
- WATLING L. 1991. — Rediagnosis and revision of some Nannastacidae (Crustacea: Cumacea). *Proceedings of the Biological Society of Washington* 104 (4): 751-757.

*Submitted on 18 December 2002;  
accepted on 20 June 2003.*