



## Lineage – Scientific methodology

### Annual distribution of the northern chitinous barnacle *Chitinolepas spiritsensis* lineage

A new endemic genus and species of barnacle (*Chitinolepas spiritsensis* Buckeridge & Newman, 2006) has been discovered in New Zealand's far north. It represents a new taxon of the Ibliformes, a primitive order of thoracic barnacles with essentially chitinophosphatic (rather than calcareous) armour. Only 1–1.4 mm high, the barnacle lives epizoically on the large endemic hydroid *Crateritheca novaezelandiae*, its sole known substratum (Buckeridge & Gordon 1998). The only known localities are Spirits Bay and Tom Bowling Bay at 32–49 m depth (Buckeridge & Newman in press). Although the distribution of the hydroid ranges as far as Ranfurly Bank on the east coast, the barnacle has not yet been found this far south. The hydroid is vulnerable to dredging (Cryer et al. 2000), increasing the vulnerability of the barnacle in the limited area where it is known.

#### 1. Literature

All information pertaining to the species is given in the paper by Buckeridge & Newman (in press) formally describing it, a popular article (Buckeridge & Gordon 1998), and a commercial report (Cryer et al. 2000). Searches were therefore not initiated on any reference database.

#### 2. Museum holdings

Type specimens are lodged at NIWA, Wellington. The species is known from NIWA Stns Z8641, Z9100, and Z9105.

Examination of the NIWA Invertebrate Collection database **Specify**, and consultation with relevant experts in May 2009 revealed no new records of *Chitinolepas spiritsensis*.

#### 3. Summary

*Chitinolepas spiritsensis* (Thoracica: Ibliformes) is an endemic habitat-restricted genus and species of chitinous barnacle found only on the hydroid *Crateritheca novaezelandiae* on the Three Kings Shelf (Spirits Bay

and Tom Bowling Bay). It is known from only two station localities, at 32 and 49 m depth.

The above information on the distribution of this barnacle was written by Dennis P. Gordon, NIWA, Wellington, and reviewed (with updating) by Professor John S. Buckeridge (EOS, Royal Melbourne Institute of Technology University). Too little is known of the distribution of this species to allow hotspots or the 90% distribution to be shown. Its further distribution may possibly relate to that of its host species, which is known from King Bank (NW of Three Kings Islands), Pandora Bank, and Ranfurly Bank (ENE of East Cape) from 27–200 m. These areas have been classified as Unknown; in all other places the species is classified as Known not to exist. The 100%, Unknown, and Known not to exist distributions were integrated by hand onto a large-scale map of New Zealand. The rounded lines were digitised and imported into a GIS software package as layers. The area of each distribution class was calculated and the layers linked to attribute and metadata files.

No additional records of the species outside of the known range were identified in reviews carried out in November 2007 and May 2009.

#### 4. References

- Buckeridge, J.; Gordon, D. (1998). A significant new species of primitive barnacle from Spirits Bay, Northland. *Water & Atmosphere* 6(3): 8.
- Buckeridge, J.S.; Newman, W.A. (2006). A revision of the Iblidae and the stalked barnacles (Crustacea: Cirripedia: Thoracica), including new ordinal, familial and generic taxa, and two new species from New Zealand and Tasmanian waters. *Zootaxa* 1136: 1–38.
- Cryer, M.; O'Shea, S.; Gordon, D.; Kelly, M.; Drury, J.; Morrison, M.; Hill, A.; Saunders, H.; Shankar, U.; Wilkinson, M.; Foster, G. (2000). Distribution and structure of benthic invertebrate communities between North Cape and Cape Reinga. Final Research Report for Ministry of Fisheries Research Project ENV9805 Objectives 1–4: 1–154.