

**Fauna of  
New Zealand**  
Ko te Aitanga Pepeke  
o Aotearoa

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**Fauna of New Zealand**  
**Ko te Aitanga Pepeke o Aotearoa**

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# **Scaphidiinae**

(Insecta: Coleoptera: Staphylinidae)

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Manaaki  
Whenua  
P R E S S

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2003

## Dedication

Because of the extensive work by one of us in Nepal and other regions of the Himalayas (Ivan Löbl) and our respect for mountaineering and the quest for knowledge, we dedicate this work to Sir Edmund Hillary and Sherpa Tensing to mark the 50th anniversary of their ascent to the summit of Mt Everest in 1953 (new species honouring each of these men are included in the study). We would also like to dedicate this study to those who have inspired us deeply by their science, art, and heroism: Alfred Russel Wallace, for his biogeography and natural history; Charles Michener and John Lawrence, for their comprehensive work on their favourite groups of insects (bees and beetles, respectively); Ernst Shackleton, for his enduring expedition to Antarctica; and Jerry Garcia and David Lynch for their contributions to art, music, and culture.

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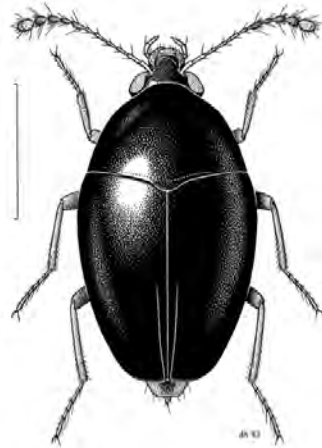
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## POPULAR SUMMARY

## HE WHAKARĀPOPOTOTANGA

Class **Insecta**Order **Coleoptera**Family **Staphylinidae**Subfamily **Scaphidiinae**

**Illustration / Whakaahua:** *Brachynopus scutellaris* (Redtenbacher, 1867) (Illustrator / Kaiwhakaahua: D. W. Helmore).

**Scaphidiine beetles**

The subfamily Scaphidiinae is composed of approximately 1400 species worldwide, and until very recently was considered a separate family from Staphylinidae (rove beetles). All species have a very similar robust body form, most species are black in colour and shiny; but, on closer inspection, excellent features can be used to distinguish the species. All scaphidiines feed on fungus and often have very well defined host-use patterns. Some species are found in termite nests of fungus-cultivating species in Asia and Africa. Some scaphidiines also have associations with slime moulds (Myxomycetes), amoeboid creatures once classified as fungi, but having bodies that are multinucleate and slither across the soil in search of food and for a place to fruit and distribute their spores. Their rather interesting body form, morphology, and biology make this group one of the more intrinsically interesting members of Staphylinidae.

A stable classification for the entire world fauna does not exist for Scaphidiinae, but New Zealand is particularly important to its development because it contains some of the most primitive members of the group. In an effort to make this group more accessible, we revise the New Zealand's fauna that is composed of 21 endemic and 2 introduced species, 15 of which are described as new. A key to the species is provided and diagnoses for the genera include characters diagnostic for larvae. Distribution and other biological information is summarised for each species. *Cyparium* is recorded for the first time in New Zealand and is represented by two new species. This is particularly significant since this genus is rather primitive, is generally tropical, and in this part of the world has

**Ngā Pītara Scaphidiine**

Huri i te ao, kei te āhua 1400 ngā momo o te whānau-iti Scaphidiinae. Tae mai ki nā tata nei, tērā te pōhēhē he whānau wehe motuhake ēnei i ngā Staphylinidae (ngā pītara 'kaewa'). Katoa ngā momo, he tinana ruarangi, he pango te nuinga, he mōhinuhinu anō. Engari kia āta tirohia, ka kitea ōna āhuatanga whāiti hei āwhina i te tangata ki te wehewehe i tēnā momo, i tēnā momo. He kai harore a ngāi scaphidiine, otirā, he motuhake te āhua o tā tēnā, o tā tēnā whakamahi i te harore e nohoia ana e ia. Kitea ai ētahi momo i ngā kōhanga o ētahi pōpokotea waihanga harore o Āhia me Āwherika. He hononga o ētahi scaphidiine ki ngā pūhekaheka hāwareware (ngāi Myxomycetes) — he hanga āhua rite ēnei ki te amoeba i kīia he harore i mua atu, engari ko te tinana, he whai karihi maha, ā, ka manini haere i te mata o te oneone ki te kimi kai māna, ki te kimi wāhi pai rānei hei tuku i ana pua atua. Nā te āhua rerekē o te hanga o te tinana, ngā wāhanga tinana, me te koiroa o ēnei momo, kua noho koinei tētahi o ngā kāhui Staphylinidae whakamīharo tonu.

Kāore anō kia takoto he whakarōpūtanga pūmau mō ngā Scaphidiinae katoa puta noa i te ao. Heoi, he wāhi nui tonu kei ērā o Aotearoa, i te mea kei konei e noho ana ētahi o ngā momo onamata. Kia mārama ake ai tātou ki ngā momo o konei, kua tirohia anō te katoa o tēnei kāhui iti — e 21 ngā momo nō konei taketake ake, e 2 ngā rāwaho, ā,

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(haere tonu)

been reported only from Java. Our New Zealand species are very similar to at least one member found in South Africa. The endemic genus *Brachynopus* originally included one species but is here expanded to include three additional species. We also describe the genus *Notonewtonia*, which has two members; this genus has strange fovea-like structures on the hypomeron. Both these genera are very primitive members of the tribe Scaphisomatini. The remaining species belong to the widespread genera *Baeocera* and *Scaphisoma*. The genus *Baeocera* includes 12 species (10 new) and the species *Baeocera actiosa*, found commonly on slime moulds, and which is the only species of New Zealand scaphidiine with a subapical gonostyle (a process on the female ovipositor or egg laying structure). The genus *Scaphisoma* includes three species – two introduced and one endemic.

While some species are widespread throughout the country, other species are more regionally distributed, like a group of species of *Baeocera* present in the north-western Nelson portion of the South Island. About half the New Zealand species are flightless and lack well-developed hind wings for flight. Most species are mainly forest dwelling and are collected by leaf litter sifting or by hand collecting from host fungi. The most common species is the flightless *Brachynopus latus*, a species that can be collected easily in pitfall traps and by examining the undersides of rotten logs with encrusting fungi. Rarely collected species, such as members of *Cyparium* and *Notonewtonia*, may be indicative of certain microhabitats that are threatened or rare.

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Contributor **Ivan Löbl** was born in Bratislava, capital of Slovakia. As a child he became interested in biology and during his early teenage years started to rear and collect insects; in particular, Orthoptera, beetles, and butterflies. During his college studies he concentrated on beetles and collected and identified members of all families present in Slovakia, focussing on carabids and staphylinoids. In the 1950s and early 60s he and his family, like many other people in the former Czechoslovakia, suffered severe political repression. Entomology not only gave him pleasure by new findings and knowledge about natural history, but also mental escape from daily problems and hardships. After several years of manual work in the textile and chemical industry, as a technician at a small regional museum, and time spent in the military service, he finally had the opportunity to pursue his academic studies. While a university student working on a PhD (Komenius University, Bratislava), he also worked as assistant in the Department of Entomology at the National Museum of Slovakia and focussed on

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o roto i tērā, 15 ngā momo e kīia ana he momo hou. Kua takoto anō he ara tautohu, ā, kei ngā kupu wehewehe i ngā puninga ētahi kupu wehewehe anō i ngā torongū. Kua puta he whakarāpopototanga o ngā wāhi noho o ia momo, me ētahi atu kōrero koiiora mō tēnā, mō tēnā. Kātahi anō a *Cyparium* ka kitea i Aotearoa nei, ā, e rua ōna momo hou. He mea nui tēnei i te mea nō tua whakarere tēnei puninga, arā tōna tino wāhi noho e mōhiotia ana ko ngā whenua pārorū, ā, taka mai ki tēnei wā, ko Java anake te wāhi i tēnei pito o te ao kua kitea ia i reira. Ko ngā momo kei Aotearoa nei, he āhua rite tonu ki tētahi i Āwherika ki te Tonga. Arā tētahi o ngā puninga tūturu o konei ko *Brachynopus* te ingoa, i whakaarohia kotahi anō tōna momo, engari ināianei kua kitea ētahi atu momo e toru. Kei te whakaahuatia anō hoki te puninga *Notonewtonia* me ōna momo e rua e mōhiotia ana. He mea rerekē ō te puninga nei, he hanga āhua rite ki te mārua i ngā taha o te wāhanga whakamua o te poho. E rua, e rua ēnei puninga, nō te iwi Scaphisomatini, ka mutu, nō tua whakarere. Ko ērā atu momo, nō ngā puninga horahora e kīia ana ko *Baeocera* me *Scaphisoma*. Tekau mā rua ngā momo i te puninga *Baeocera* (10 ngā momo hou), tae atu ki te momo *Baeocera actiosa* e kitea nuitia ana i ngā pūhekaheka hāwareware. Ko ia anake te scaphidiine kāore te wāhanga tuku kākano i te pito rawa o te pū tuku kākano — kei paku mua mai kē. E toru ngā momo o te puninga *Scaphisoma* — e rua nō konei tūturu, kotahi te rāwaho.

Kua marara te noho o ētahi momo ki hea, ki hea, ko ētahi anō e noho whāiti ana ki tōna anō rohe, pērā i tētahi kāhui momo *Baeocera* e noho ana ki ngā whenua i te urumā-raki o Whakatū, i Te Waipounamu. He haurua pea o ngā momo o Aotearoa, he ngoikore ngā parirau o muri mō te rere, he rere kore. Noho ai te nuinga ki te ngahere. Ko ngā tikanga kohikohi tino pai, ko te tātari i ngā rau popo, ko te āta hopu rānei ki te ringa tonu mai i te harore e nohoia ana e ia. Ko te *Brachynopus latus* te momo e kitea nuitia ana, he rere kore anō tērā. He māmā noa iho te kohikohi i a ia ki te rua māhanga, me tiro tiro noa iho rānei a raro o ngā rākau pirau e tipuria ana e te harore. Ko ngā momo me uaua ka kitea, pērā i ngā uri o *Cyparium*, me *Notonewtonia*, he tohu pea o ētahi kāinga whāiti o te taiao kua mōrearea, kua onge rānei.

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I whānau mai te kaituhi, a **Ivan Löbl**, i Bratislava, tāone matua o Slovakia. He tangata tēnei i minamina ki te koiiora i tana itinga, ā, ka taiohi haere, ka tahuri ki te whakatipu pepeke, ki te kohikohi pepeke māna. Ko ngā tino pepeke ki a ia, ko ngāi Orthoptera, ngā pītara me ngā pūrerehua. I te kura tuarua, ka aro whāiti ki ngā pītara, me te aha, oti ana i

(haere tonu)

Scaphidiinae. A few weeks after completing his PhD he left Slovakia for Switzerland where he was offered a position as research officer and eventually served as head of the Department of Entomology at the Museum d'Histoire Naturelle (Museum of Natural History) in Geneva. Ivan considered curatorial work very important and spent most of his professional and much of his free time working with insect collections; as a result there is a well-curated beetle collection present at the museum in Geneva. He has published over 200 papers and this work was facilitated by visits to university and museum insect collections throughout Europe, North America, Japan, and Australia. He has made extensive collection trips to 24 countries ranging from Canada to New Caledonia and from Nepal to Lombok, and has sampled an impressive number of species of arthropods (there are many epithets bearing Ivan's name). Some of the specimens he collected are, sadly, from areas where much of the habitat has disappeared due to destructive human activity, and the collections made from many of the forests in the Himalayas and Ivory Coast serve as unique reminders of destroyed ecosystems. Since retirement, Ivan continues to work on the taxonomy of staphylinids (subfamilies Scaphidiinae and Pselaphinae) and on the Catalogue of the Palaearctic Coleoptera.



Contributor **Rich Leschen** was born in Newport, Arkansas, and grew up in St Louis, Missouri. From his early years he has been interested in paleontology and herpetology, and when very young spent hours tracing the arthropods featured in Libby Hyman's famous treatise on invertebrates.

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a ia te kohikohi me te tautohu ētahi taurira o ngā whānau pītara katoa e noho ana ki Slovakia, otirā, ko ngā carabid me ngā staphylinoid te arotahinga o ana mahi. I ngā tau o ngā 1950 me te tīmatanga o ngā 1960, pēpēhia ana te mātinītini, tae atu ki a Ivan me tana whānau, e ngā mana tōrangapū o ērā wā. Riro ana ko te mātai pepeke hei kaupapa pārekareka māna e mātau ake ai ia ki ngā āhuatanga o te ao tūroa, ka tahi, e ora ai tana hinengaro i ngā raruraru me ngā uauatanga o tana noho, ka rua. He maha ngā tau he ringa tōhau nui te tangata nei i ngā ahumahi papanga, hanga matū, he kaihangarau anō mō tētahi wā i tētahi whare pupuri taonga ā-rohe iti, ka uru anō ki ngā ope a Tū. Nā wai ā, ka āhei ia ki te takahi i te ara rapu mātauranga. I a ia e mahi ana i tana Tohu Kairangi (i te Whare Wānanga o Komenius, Bratislava), ka mahi anō ia hei kaiāwhina i te Tari Mātai Pepeke o te Whare Pupuri Taonga o Slovakia, ko ngāi Scaphidiinae tana arotahinga. I ētahi wiki i muri i te whakawhiwhinga ōna ki te Tohu Kairangi, ka whakarērea atu a Slovakia, ka haere ki Huiterangi, ā, i reira ka riro i a ia he tūranga āpiha rangahau. Ka mea ā, ka piki ki te tūranga o te kaihautū o te Tari Mātai Pepeke i te Museum d'Histoire Naturelle (Te Whare Pupuri Taonga Ao Tūroa) i Geneva. Ki tā Ivan, he tino whai takenga te mahi a te kaitiaki taonga. Pau ana te nuinga o ana hāora mahi me ngā hāora hoki o tua atu ki te maimoa i ngā kohinga pepeke. Nāna i takoto ai he kohinga pītara tuawhiti tonu i te whare pupuri taonga i Geneva. He nui āke i te 200 ngā tuhinga kua whakaputaina e ia, ko ngā hua ēnei o tana toro i ngā kohinga pepeke o ngā whare wānanga me ngā whare taonga puta noa i Ūropi, i Amerika ki te Raki, i Hapanihi, me Ahitereiria. Kua takahia e ia te nuku o te ao ki te kohikohi pepeke — e 24 ngā whenua kua tae atu ia, mai i Kānata ki te Whenua Kanaki, mai i Nēpora ki Lombok. Me mihi anō te maha o ngā momo angawaho kua kohia e ia (he maha tonu kua tapaina ki te ingoa o Ivan). He kōingotanga ngākau ko ētahi o ngā taurira i kohia e ia, nō ngā whenua kua korekore ō rātou kāinga noho i reira, i ngā mahi whakarake whenua a te tangata; ko ngā kohinga i kohia i te maha tonu o ngā ngahere o ngā Himalaya me te 'Takutai Rei', he tohu maumaharatanga ki ngā rauwiringa kaiao kua ngaro i te mata o te whenua. Kua ahungarua a Ivan iāianā, engari kei te mahi tonu ia kia tika te whakarōpūtanga o ngā staphylinid (he whānau iti ēnei nō ngāi Scaphidiinae me ngāi Pselaphinae), kei te mahi anō i runga i te Catalogue of the Palaearctic Coleoptera.

Ko Newport, i Arkansas, te ūkaipō o **Rich Leschen**, ā, ka tipu ake ia i St Louis, Missouri. I tana itinga tonu he ngākau nui ia ki ngā mātātoka, ngā mokomoko me ngā nukuwai. I a ia e nohinohi tonu ana, warea ana ia ki te tāwhai i ngā angawaho i whakaahuatia i te tuhinga rongonui a Libby Hyman mō ngā hanga tuarā-kore. Ahakoa te huhua o ngā kaupapa i ngākau nuitia e ia, mai i te 'paki pūtaiao' ki te puoro (i a ia e tamariki ana, pānu ai ia i ngā tuhinga a Larry Niven, nōna ka eke ki te taiohinga, ko Grateful Dead tētahi

*(haere tonu)*



Though interested in many subjects, ranging from science fiction to music (as a kid he read Larry Niven and as a teenager he became a Grateful Dead fan), his family always thought he would eventually have a professional title ending with -ologist! He decided to make a career in science and became interested in beetles, which is not fiction. While a Masters student studying fungus beetles at the University of Arkansas (Fayetteville), Rich collected Scaphidiinae and described the larva of *Scaphisoma punctatum*. A mutual friend and amateur beetle collector, Karl Stephan (Red Oak, Oklahoma), suggested Rich contact Ivan Löbl regarding his interests, and the three of them eventually published a review of *Scaphisoma* occurring in the Ozark region of the United States. Ivan and Rich met at the 1988 International Congress of Entomology (Vancouver, Canada) and every evening retired to the beer tent to discuss beetles, beetle specialists, and other fine things in life. Rich recalls that he had a lump in his throat when they said goodbye at the conference and knew he had made a friend for life. Their meeting began a long-term collaboration and they continue to work on the phylogenetic relationships of the Scaphidiinae. Though systematics research is declining and seems to be under threat almost everywhere, including New Zealand, Rich continues his work on world Coleoptera and has published over 70 papers, many of the important studies being on higher classification and evolution of Staphylinoidea and Cucujoidea and placing New Zealand beetle fauna in a global context. He invests much of his time promoting systematics and entomology through his work, and presently serves as science editor of the *New Zealand Entomologist*, is co-editor of the *Handbook of Zoology on Coleoptera* (with Rolf Beutel, Hamburg, Germany), and is Vice-President of the New Zealand Entomological Society. With Giulio Cuccodoro, he has also edited a Festschrift dedicated to Ivan. As a pastime, Rich plays guitar and mandolin and divides his interests between Classical North Indian music and traditional American Bluegrass; two very different musical forms rooted in history and needing safe haven from pop culture. He remains a loyal Grateful Dead fan.



o ana tino rōpū puoro), i āhua mōhio tonu tana whānau, i te mutunga iho, ka noho mai ko te kupu ‘kaimātai’ ki mua i tana tūranga mahi tūturu! Whakatau ana ia ko te ao pūtaiao tana tino hiahia, ā, ka tipu i konā tana manako ki ngā pītara — ko te pūtaiao tūturu hoki tēnei — ehara kau ana i te paki noa! I a ia e mahi ana i tana Tohu Paerua, he tiroiro pītara noho harore te kaupapa, i te Whare Wānanga o Arkansas (Fayetteville), ka kohia e Rich ētahi Scaphidiinae, ka whakaahuatia anō hoki ngā torongū o te *Scaphisoma punctatum*. Tērā tētahi hoa o Rich rāua ko Ivan, he tangata anō tēnei i minamina ki te kohikohi pītara hei runaruna māna, ko Karl Stephan te ingoa (nō Red Oak, Oklahoma). Ka toko ake i a Karl te whakaaro kia whakapā atu a Rich ki a Ivan mō te wāhi ki tō rāua ngākau nui ki ngā pītara kai harore. Ka mea ā, ka puta i te tokotoru nei tētahi tirohanga hou ki ngā *Scaphisoma* o te rohe Ozark o Amerika. I tūtaki a Ivan rāua ko Rich i te Whakarauikatanga Mātai Pepeke o te Ao 1988 (i tū ki Vancouver, Kānata). Tō ana te rā, haere ana te tokorua nei ki te tēneti inu pia ki te kōrerorero mō ngā pītara, mō ngā tohunga pītara, me ērā atu hanga āhuareka o te ao. Ki tā Rich, ka eke ki te wā poroporoaki i taua hui, ka nui tana matapōuri, otirā me te mōhio anō kua noho hoa piripono rāua ko Ivan, ā, mau ake nei. Mahi tahi ai rāua mai i taua wā, ā, e mahi tonu nei ki te whewhera i te whanaungatanga i waenga i ngā Scaphidiinae. Ahakoa kei te timu te tai ki ngā rangahautanga whakapapa huri noa i te ao, i Aotearoa anō hoki, kei te pūmau tonu ngā whakapaunga kaha a Rich ki ngā Coleoptera o te ao, ā, neke atu i te 70 ngā tuhinga kua puta i a ia. Ko te maha tonu o ana rangahautanga nui kua aro whāiti ki ngā whakarōpūtanga whakarunga me te kunenga mai o ngā Staphylinoidea me ngā Cucujoidea, kua whai anō ki te whakaatu i te wāhi ki ngā pītara o Aotearoa i roto i te huihuinga pītara nui tonu o te ao. Whakapau kaha ai a Rich ki te whakatairanga i te whakapapa me te mātai pepeke i roto i āna mahi. Ko ia hoki te ētita pūtaiao o te *New Zealand Entomologist*, tētahi o ngā ētita o te *Handbook of Zoology* mō te Coleoptera (ko Rolf Beutel, o Hamburg, Germany, ko ia anō tētahi), ā, ko ia te Perehitene Tuarua o te Rōpū Mātai Pepeke o Aotearoa. Nā rāua ko Giulio Cuccodoro i ētita tētahi Kohinga Tuhinga e whakanui ana i a Ivan. He runaruna nāna te whakatangi i te kītā me te mandolin, ko te puoro Onamata o Īnia ki te Raki me te ‘American Bluegrass’ te karawhiu. Inā te rerekē o ēnei momo puoro, tētahi i tētahi, engari e rua e rua, he taonga tuku iho me maimoa rawa e kore ai e tāmia e ngā puoro o ēnei rā. Waihoki, kei te mau tonu tana minamina nui ki a Grateful Dead.

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Translation by **H. Jacob**  
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## ABSTRACT

The 23 species of New Zealand scaphidiine Staphylinidae are revised and illustrated, with 1 genus and 15 species described as new. *Cyparium* is represented by 2 new species: *C. earlyi* n. sp. and *C. thorpei* n. sp. The originally monotypic genus *Brachynopus* now includes 4 species: *B. apicellus* (Broun) (new combination), *B. latus* Broun (= *Baeocera fulvicollis* Broun, new synonymy), *Brachynopus rufus* (Broun) (new combination; = *Baeocera armata* Broun, new synonymy), and *Brachynopus scutellaris* (Redtenbacher) (new combination; = *Scaphisoma tenellum* Pascoe, new synonymy; = *Baeocera rufipes* Broun, new synonymy). *Notonewtonia* n. gen. is described and includes 2 species: *N. thayerae* n. sp. (type species) and *N. watti* n. sp. The genus *Baeocera* includes 12 species: *B. abrupta* n. sp., *B. actuosa* (Broun) (new combination), *B. benolivia* n. sp., *B. elenae* n. sp., *B. epipleuralis* n. sp., *B. hillaryi* n. sp., *B. karamea* n. sp., *B. punctatissima* n. sp., *B. sternalis* Broun, *B. tekootii* n. sp., *B. tensingi* n. sp., and *B. tenuis* n. sp.. The genus *Scaphisoma* includes 3 species: *S. hanseni* n. sp., *S. corcyricum* Löbl (introduced from the Mediterranean), and *S. funereum* Löbl (introduced from Australia and established). A key is provided to all of the species and diagnoses for the higher taxa, including larval information where available.

Two genera are endemic to New Zealand (*Brachynopus* and *Notonewtonia*), whereas *Baeocera* and *Scaphisoma* are very diverse and distributed worldwide. *Cyparium* is rather restricted in distribution and is mainly circumtropical and absent from Australia and New Caledonia: the 2 rare New Zealand species are related to South African species. Although some species are rather widespread (most notably *Brachynopus scutellaris* and *Scaphisoma hanseni*) other species are more regionally distributed. The centre for diversity of New Zealand species is in northern South Island where there are several similar-looking allopatric species of *Baeocera*. The most commonly collected species is the flightless *Brachynopus latus* that is found in many habitats, including pastures. Otherwise species are mainly forest dwelling and are taken most easily by leaf litter sifting or by hand collecting from host fungi. Rarely collected species, such as members of *Cyparium* (known from 3 specimens) and *Notonewtonia* (known from under 20 specimens), each genus with 2 species, may be indicative of certain microhabitats that are threatened and these species should be attributed conservation status.

Twelve of the 21 endemic New Zealand species are flightless, and island members of *Brachynopus scutellaris* are brachypterous or apterous. Scaphidiines are strictly fungus feeding and are found on Polyporaceae, Corticiaceae, and Myxomycetes. *Brachynopus* species are found breeding mainly on resupinate corticioid and polyporoid Basidiomycetes where larvae build canopy retreats. Species of *Baeocera* are associated mainly with Myxomycetes whereas adults of *Scaphisoma hanseni* are found commonly on *Phellinus kamahi*.

**Keywords.** Staphylinidae, Scaphidiinae, taxonomy, classification, key, new species, new synonymy, distribution, ecology, biology, species endemism, fauna.

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## INTRODUCTION

Scaphidiinae presently contains approximately 1400 described species worldwide (Löbl 1997) but many areas require detail study, including the Australasian region. Species diversity is highest in tropical regions, and diminishes towards higher latitudes and tends to be low in higher altitudes. Before this study the endemic New Zealand fauna consisted of eight described species, with 10 species listed by Hudson (1934). The first scaphidiine described from New Zealand was *Scaphisoma scutellare* Redtenbacher (1867) followed by seven species treated by Broun (1880, 1881, 1886, and 1914) including one species described by Pascoe (1876) that was placed into synonymy by Reitter (1880) and one of Broun's species of *Scaphisoma* that was later transferred to Leiodidae (Klimaszewski *et al.* 1996, see Newton 1998). To date, no additional species have been described from the country, although Kuschel (1990) reported seven from Lynfield, Auckland (including natural history information) and Klimaszewski *et al.* (1996) listed a total of 15 species. As indicated by Klimaszewski *et al.* (1996), the generic concepts of New Zealand scaphidiines required revision as some species were placed in wrong genera. As is the case with many south temperate Coleoptera, many species described over 100 years ago were placed into existing European genera based solely on similarity, and the basic body form of scaphisomatines (see frontispiece) would not help coleopterists of that time to place taxa. A Eurocentric view of the taxonomic world, coupled with the poorly known limits of some of the scaphisomatine genera, lead to paraphyletic taxa and dubious generic placement of some of the New Zealand species. In this paper we revise the New Zealand species, comment on generic limits, and provide a key to 23 species. Biological information is also summarised for each species.

## SYSTEMATICS OF SCAPHIDIINAE

The subfamily Scaphidiinae is a member of the Oxytelinae group of Staphylinidae (Lawrence & Newton 1982), which includes Apateticinae, Osoriinae, Oxytelinae, Piestinae, and Trigonurinae. Unlike most members of the oxyteline group, and the majority of Staphylinidae, scaphidiines do not have the typical flexible staphylinoid body form, but are box-like and highly convex, with the elytra covering most of the abdomen. When seen on fungus-covered logs, the species appear as if they are shiny black pearls that are

often fast-running, these features make them easily recognised as scaphidiines.

Based on larval characters, Kasule (1966) was the first to recognise Scaphidiinae as a subfamily of Staphylinidae, despite their long taxonomic history as separate families. It has been a slow process for coleopterists to accept the firm placement of Scaphidiinae within staphylinids, and many works published after Kasule's (1966) paper treat scaphidiines as a separate family (see review in Leschen & Löbl 1995), despite numerous adult characters that support the correct familial placement (Lawrence & Newton 1982; Newton & Thayer 1992).

Scaphidiinae is unequivocally monophyletic based on many adult characters (Leschen & Löbl 1995; Hansen 1997a), including the 5-segmented antennal club, pronotum with a high-volume, and sternites III and VII longer than the others (see Thayer 2003 for a more complete list of characters). Larvae have a unique crenulated labral margin (Newton 1991).

Although the direct sister relationships are uncertain within the oxyteline group, Scaphidiinae appear to be most similar to Apateticinae (Leschen & Löbl 1995), and share at least two characters: abdomen strongly tapering toward the apex, and elongate elytra covering tergites 1 and 2. The phylogenetic study by Hansen (1997a) based on larval and adult characters showed a polyphyletic oxyteline group, and reinstated the subfamily Scaphidiinae as a family — Scaphidiinae (-idae) is sister taxon to the remaining Staphylinidae *sensu stricto*, and these together are the sister taxon to Scydmaenidae. Another study by Beutel & Molenda (1997) also showed a paraphyletic oxyteline group, but with a largely unresolved Staphylinidae based on characters derived from the larval head. The theoretical study by Ballard *et al.* (1998) included a preliminary study of molecular and morphological characters that also showed that the oxyteline group (in this case *Oxytelus* and *Cyparium*) were not monophyletic, although the sets of morphological characters and terminal taxa were not sampled exhaustively.

Scaphidiine workers recognise a classification of Scaphidiinae that includes four tribes (Löbl 1997), with Scaphisomatini having the highest number of described species and the most enigmatic phylogenetic relationships. Leschen & Löbl (1995) studied the phylogenetic relationships among the scaphidiine tribes, and the genera contained in Cypariini (Africa, Asia, Neotropical, North America, New Zealand), Scaphiini (Holarctic, Southeast Asia), and Scaphidiini (world wide except New Zealand and Pacific Islands) and demonstrated the monophyly of Scaphisomatini, a tribe that includes five subtribes reflecting higher categories defined by Achard (1924). Also note that the tribes Heteroscapini and Toxidiini are included within Scaphisomatini and these issues will be addressed in another paper (Leschen & Löbl, in prep.).

## UNIQUE FEATURES OF THE NEW ZEALAND FAUNA

No phylogeny for the entire subfamily Scaphidiinae is presently available. However, some general patterns and comments can be made about the New Zealand endemic fauna. At first glance, the presence of the widespread taxa *Scaphisoma* and *Baeocera* in New Zealand is a feature common to many landmasses throughout the world and does not seem so unusual. The presence, however, of a single endemic species of *Scaphisoma* that is moderately common to both the North and South Islands and limited possibly to a single fungal host is unusual, especially since *Scaphisoma* is the largest genus in the subfamily, and is very diverse in Australia and New Caledonia. *Baeocera* consists of at least two or more species groups, with a radiation of flightless species mainly in the Nelson region as part of a larger group containing all species apart from *B. abrupta* and *B. actiosa*. The latter species is unusual for *Baeocera*, because of its rather elongate 11<sup>th</sup> antennomere (Fig. 85) and form of ovipositor (Fig. 103), and while we consider it a member of this genus, it was previously placed in *Scaphoxium* (Klimaszewski *et al.* 1996). Most members of *Baeocera* and *Scaphisoma hansenii* appear to have affinities with Australia and New Caledonia based on aedeagal characters.

The presence of *Cyparium* in New Zealand may seem rather surprising since the genus has a mainly circumtropical distribution and is absent from Australia and New Caledonia. The rarity of the two New Zealand species invokes further mystery, but these species are more likely related to members living in South Africa, and are part of a Gondwanan group of this genus.

Two genera are endemic to New Zealand. *Brachynopus* contains four species, and these are quite different from each other with *B. latus* and *B. scutellaris* sharing a tripartite sclerite in the internal sac (present also in *Alexidia* Reitter; Löbl & Leschen 2003). Based on unpublished phylogenetic information, *Brachynopus* appears to be the sister taxon to *Notonewtonia*, the other endemic genus, consisting of two species that have a shallow fovea present on the hypomeron (Fig. 8, 9). *Brachynopus* and *Notonewtonia* are placed at a relatively basal position in the tribe Scaphisomatini (Leschen & Löbl, unpubl.), but together with the presence of Gondwanan *Cyparium*, these provide evidence in support of an ancient fauna maintained in New Zealand.

Additional phylogenetic information can be found in the taxonomic sections below.

As a final note, the rarely collected species of *Cyparium* and *Notonewtonia* may be indicative of certain microhabitat requirements we fully do not appreciate. Both being members of moderately primitive lineages adds important

value to these species as New Zealand endemics, and they should be attributed conservation status.

## COLLECTING, DISSECTING, AND OTHER METHODS

The use of three standard collecting methods will ensure high capture rates and informative biological data for scaphidiines.

1. Mass collections, made by sifting leaf litter and rotten wood and fungi, which is placed into Berlese funnels or Winkler extractors (Besuchet *et al.* 1987) produces a high yield of scaphidiines, especially wingless species.

2. Flight intercept traps (FIT, such as those described by Peck & Davies 1980 and Masner & Goulet 1981) have been most useful for capturing specimens of flight-capable species. When set in prime habitats, consisting of fallen trees and leaf litter, FITs are very productive.

3. Hand collecting from fungi, especially at night for nocturnal species, is the best method for capturing live material, making host associations, and locating larvae, which are usually concealed in frass-covered tunnels of Basidiomycetes or among sporocarps of Myxomycetes.

After material has been collected, labelled, and sorted, Ivan Löbl uses a European method for extracting and mounting male genitalia. Males are identified and selected for dissection (recognised by the presence of modified protarsomeres that are slightly dilated and bear tenent setae, and some species may have a patch of setae on the metaventrite). The specimens are removed from their points or cards and placed into a weak solution of ammonium hydrate for up to 5 minutes to soften the sclerites (material removed directly from ethanol is easier to dissect). The specimen is removed from the ammonium hydrate and placed on moistened filter paper to limit mobility while dissecting. The aedeagus is removed using pins that are inserted into the tip of the abdomen. Once the aedeagus is extracted from the specimen, the rest of the body is air dried and remounted while the genitalia are placed into isopropyl alcohol. A smooth droplet of Canada balsam, diluted with xylene as necessary, is placed on an acetate card and, with a small pin dipped in balsam, the aedeagus is picked up from the alcohol and placed into the droplet and manipulated to the preferred orientation (usually some with the parameres down so that the internal sac is clearly visible and others in lateral view). The specimens are checked at 24 h intervals for orientation (using xylene for thinning) until the aedeagus is stabilised in the mount. The acetate card is pinned below the specimen and can be removed and easily observed with a compound microscope. It is important that the preparations and pins

used for dissection are kept clean. The wingless species of *Baeocera* and *Brachynopus* are very compact and have elytra that are securely ventrally wrapped around the lateral portion of the abdomen — these are difficult to dissect and one should be careful with specimens from small series. Though dissected mouthparts and other structures can be mounted in the same way as the aedeagi, we examined microstructures mainly through whole mounts on permanent slide mounts according to the methods explained in Leschen & Löbl (1995) and Leschen (2003).

The length of specimens is measured from the middle of the anterior pronotal margin to the inner apical angle of the elytra. The relative length ratio of the antennomeres is measured from both pinned and slide-mounted specimens, and microsculpture is described as seen in a stereomicroscope at high magnification.

Material examined is based mainly on specimens held in NZAC, but also in those collections listed in the acknowledgments. Lectotype, holotype, and syntype material is listed in the body of the text and additional material examined is listed in Appendix 1; 2-letter area codes follow Crosby *et al.* (1998). Label data of older type material is presented with its original syntax with comments in brackets ([ ]) and a slash (/) to indicate different labels. Lectotypes and paralectotypes are designated for species described by Broun and Redtenbacher to fix the use of their species names; a lectotype for a species was selected from all specimens identified from the original series and concluded to be syntypes.

## MYCOPHAGY

Mycophagy is not a common feature among the largely saprophagous and predaceous oxyteline group of staphylinids, though it is a behaviour shared by all members of Scaphidiinae (Lawrence & Newton 1982; Newton 1984; Hansen 1997b). Associated with this shift to mycophagy is a suite of morphological and behavioral adaptations that include novel mouthpart structures and the building of faecal canopies by larvae that feed on relatively hard fungi (Newton 1984, 1991; Lawrence 1988; Leschen 1993, 1996; Hanley 1996). Scaphidiines are associated with fungal growth in leaf litter, rotten logs, and rotting vegetation, and, likewise, the inquiline of African and Asia are associated only with termites that build fungal gardens.

Host records for New Zealand scaphidiines are poorly known, though one of us (RABL) has focussed efforts on collecting from fungi. For some of the taxa reported in this study, the pattern of host use matches that for congeneric taxa in other regions. Many species are specialists on slime moulds (Lawrence & Newton 1980; Newton & Stephenson 1990), whereas others occur on relatively persistent wood-

rotting fungi (Newton 1984; Ashe 1984; Leschen 1988). These two classes are also basically related to morphological features seen in the larval mouthparts. Many species of *Baeocera* are strictly associated with Myxomycetes, though there is no apparent specialisation on any one taxon of myxomycete. This is true for *Baeocera actiosa*, for which host records are numerous. In some cases, adults may use a wide array of hosts unrelated to the larval host, for example, *B. actiosa*, where adults are not restricted to slime moulds, and yet the larvae are. Larvae of *Baeocera* have a fan-shaped pseudomola (see Leschen 1993) that they use for puncturing or grinding the fungal spores of slime moulds.

*Brachynopus latus* and *B. scutellaris* have been collected mainly on resupinate corticioid and polyporoid genera (e.g., *Schizopora*) though records for stipitate or bracken polyporoids exist (e.g., *Coltricia*). These two species are part of an entire guild of specialist beetles in New Zealand restricted largely to resupinate fungi that grow on the undersides of rotting branches. The larvae of these two species build canopy retreats (Fig. 83) that can be seen very clearly on the fungi on which they feed. These larvae feed mainly on the hymenium or hyphae of basidiomycetes, do not specialise on spore feeding, and have a pseudomola composed of elongate spines.

A case of monophagy may occur in *Scaphisoma hanseni*, which is restricted mainly to the polypore *Phellinus kamahi*, where adults may be present in large numbers. The larvae of this species have not been collected, which suggests that oviposition may be very restrictive or occurs on an entirely different fungal substrate.

*Brachynopus* and *Scaphisoma* adults have a radulate galea (Fig. 75, 78, 81, 88, 89), composed of rows of rake-like spines that may function in the removal of rather tough fungal tissue. This is in contrast to the brush-like galea present in *Baeocera* which is a rather common feature throughout Coleoptera and may be related, at least in *Baeocera*, to spore feeding. Mycophagy in New Zealand Coleoptera will be discussed at greater length in a separate publication by RABL.

## MORPHOLOGY

For gross structure we adopt the terminology used by Lawrence & Britton (1991) and Lawrence *et al.* (1999), and for some of the specific terms for scaphidiine characters used for identification we used the terminology discussed in Leschen *et al.* (1990) and that used traditionally by staphylinid workers. Many structures listed below are labelled in the following figures: ventral body (Fig. 1), dorsal body (Fig. 2), aedeagus (Fig. 20, 21, 35, 36).



## SURFACE AND INTERNAL CUTICULAR FEATURES

**Fovea:** invaginations of the cuticle often having internal setae. These are present only on the hypomeron of *Notonewtonia* (Fig. 8, 9).

**Microsculpture:** small cuticular surface features in the form of transverse lines or small pits or punctures. Punctate microsculpture in *Scaphisoma* consists of transverse combs that are clearly visible in SEM, but are not apparent on pinned specimens.

**Punctures:** pit-like impressions that extend shallowly into the cuticle and are often marked by a seta and/or a pore.

**Setae:** hair-like extensions of the cuticle.

## HEAD AND ITS APPENDAGES

**Antenna:** consisting of 11 antennomeres including a 5-segmented club; the form of the antennae are clavate (*Cyparium*, Fig. 2, 3) or filiform with a loosely articulated club (remaining taxa, see Fig. 4–19); antennomere 3 is usually elongate (Fig. 84) or occasionally short and triangular (Fig. 17–19); antennomere 11 is elongate in *Baeocera actuosa* (Fig. 85).

**Frons:** anterodorsal portion of the head between the eyes. The distance separating the eyes is referred to as the interocular space.

**Labium:** ventral mouthparts that include the mentum, ligula, prementum, and labial palpi (Fig. 76, 79, 82, 86, 87, 90).

**Mandible:** dorsoventrally flattened appendage consisting mainly of apical teeth, a membranous prosthema, and a basal striate mola (Fig. 74, 77, 80).

**Maxilla:** tripartite appendage located below the mandible consisting of an outer palp of 3 segments (palpomeres) and a palpiger, a middle galea, and inner lacinia (Fig. 75, 78, 81, 86, 88, 89). The shape of the terminal palpomere is an important feature that is used to discriminate among scaphidiine genera; an acuminate palpomere is shown in Fig. 87 whereas a normal (or tapering) palpomere is shown in Fig. 81.

**Mentum:** posterior sclerite of the labium.

**Tentorium:** internal structure (endocarina) which may have an anterior median spine(s) arising from a bridge-like corporotentorium.

## THORAX

**Corbiculum:** Internal setose structure derived from the prothoracic spiracle and consisting of internally directed setae and an outer membrane with distinct pores (Fig. 91–95).

**Pronotum:** dorsal sclerite of the prothorax consisting of a

disc (middle portion of the structure), lateral carinae, hypomera (the deflexed portions of the pronotum), posterior pronotal lobe (the posterior lobe that often projects behind to cover the scutellum), and posterior or basal angles.

**Prosternum:** ventral portion of the prothorax which is reduced in scaphidiines; a spine may be present (Fig. 96).

## PTEROTHORAX

**Mesoventrite:** ventral portion of the mesothorax that meets the metaventrite posteriorly between the mesocoxae (Fig. 98), articulating with the metaventrite by means of an internal articulation which may be absent due to fusion, and posteriolaterally marked by the anapleural line; anterior structures include the prepectus (=mesosternal space) and procoxal rests (Fig. 97); mesal structures include a paxillum, and mesoventral, secondary, and medial lines.

A “mesepimeron” may be present in front of the anapleural line, but this may not be homologous to a true mesepimeron (Leschen *et al.* 1990). A well-developed mesotrochantin and mesepimeron are present in apateticines and other members of the oxyteline group, but in scaphidiines the mesotrochantin is lost, either by fusion with the coxa, or through incorporation with the ventrites (possibly as the “mesepimeron”). What is present, and visible externally, is a well-defined sclerite in Scaphiini and Scaphidiini, which is present or absent in Scaphisomatini but absent in Cypariini. A well-developed mesepimeron is usually marked internally by a ridge, but in Scaphisomatini this is not true and we refer to this structure as the mesepimeral line.

**Metaventrite:** ventral portion of the metathorax, which articulates anteriorly with the mesoventrite by an intercoxal process (which may be fused with the mesoventrite), and posteriorly with the first ventrite of the abdomen and may have a median discripen or longitudinal groove, distinct primary setae, mesocoxal lines (=femoral or submesocoxal lines), premetacoxal lines on the external surface, and a metacoxal process which may also give rise to an intercoxal plate resting between the metacoxae. The space enclosed by the mesocoxal lines is called the mesocoxal area. The metaventrite may also have setiferous sex patches in males of some species. The metendosternite is an internally bifurcate structure which functions in muscle attachment; dorsal arms may branch distal or proximal to the base.

**Metepimeron:** pleural region of the metathorax.

**Scutellum:** portion of the pteronotum that is usually visible between the elytral bases; but may be reduced or hidden (e.g., Fig. 2, 4–7).

## ABDOMEN

**Abdominal ventrite 1:** first abdominal ventrite which

may have a metacoxal bead (not shown) along the anterior margin, metacoxal lines (=submetacoxal lines), and primary setae; the area between the metacoxal lines and the anterior portion of the ventrite is the metacoxal area (the metacoxal interval is the distance between the metacoxal line and the anterior portion of the ventrite); the abdominal process is an anterior extension present between the metacoxae and sometimes having a transverse line (Fig. 99).

**Aedeagus:** male intromittent organ of the trilobed type whereby the phallobase (=tegmen) is reduced, as in most staphylinids, and the articulated parameres attach to the basal bulb; there is a median lobe consisting of a larger, bulbous proximal part and a narrow apical lobe, and an internal sac (Fig. 22) which contains various sclerites within it, mainly the flagellum and guide sclerite. The flagellum is the sclerotised part of the ejaculatory duct (Fig. 36, 48), which is mainly membranous (many species lack sclerites in the internal sac). Sometimes the membranous duct can be traced within the flagellum, but often not, and so the term may be not always be correctly applied. The flagellum may be partly fused with, or completely isolated from, other sclerites within the internal sac. Other elongate sclerites contained in the internal sac may not be true flagella, for example the elongate sclerites in *Brachynopus* (Fig. 26–29) have no obvious duct within them and are not called flagella, whereas those in *Baeocera* do (the membranous duct is illustrated in Fig. 36). In some *Baeocera* the basal part of the ejaculatory duct is clearly visible (Fig. 48, 51) but this is rarely seen in other genera. Guide sclerites (Fig. 36, 48) are present only in some groups of *Baeocera*.

**Intersegmental membranes:** membranes present between the abdominal ventrites that may have a brick-wall pattern (Fig. 100).

**Ovipositor:** female genitalia and egg laying structure consisting of paired basal gonocoxites usually with an apical gonostyle or stylus (Fig. 101, 102); the gonocoxite of *Baeocera actiosa* is hook-like with a subapical stylus (Fig. 103).

**Paratergites:** pleural elements that surround the abdominal terga.

**Spiracles:** spiracles are present in the dorsal (tergal) membranes and may be absent from the apical abdominal terga.

## BODY APPENDAGES

**Elytron:** hardened forewing consisting of a dorsal disc which may have well-developed longitudinal striae consisting of punctures and with a lateral epipleuron which is clearly visible in lateral or ventral view; lateral, basal, and sutural (=parasutural) striae may be present, and may be contiguous, although the epipleural stria is absent in some

specimens of *Baeocera epipleuralis* (Fig. 12); the supra-epipleural area is the space between the epipleural and lateral lines.

**Hind wings:** typically well developed in most taxa, but reduced in others.

**Legs:** consisting of the basal coxa (with a small trochantin that is hidden) (Fig. 96, 104), a short trochanter, elongate femur (Fig. 105, 106) and tibia (Fig. 107–109), and 5-segmented tarsus (Fig. 110), with tarsomere 5 having a well-developed empodium (Fig. 112), empodial setae which may number 0, 1 (Fig. 112), or 2 (Fig. 111), and tarsal claws. A triangulate process may be present at the apex of the metacoxa (Fig. 104); a well-defined ctenidium (row of setae) may be present on the profemur (Fig. 105), and males have tenent setae on the protarsus (Fig. 110) and sometimes the mesotarsus.

## DESCRIPTIONS

### Scaphidiinae Latreille, 1807

**Adult diagnosis.** Body broadly oval to somewhat parallel-sided, compact and usually very convex and shiny. Head retracted and hypognathous; neck absent. Antennae filiform or clubbed (Cypariini); inserted on frons between eyes; insertion visible in dorsal view, but below a very weak ridge. Elytra long and truncate; 1–2 abdominal segments exposed in dorsal view. Prosternum poorly developed in front of coxae; protrochantin always concealed. Abdomen with 6 visible sterna and 0–2 pairs of paratergites per segment. Tarsal formula 5–5–5.

**Larval diagnosis.** Body round in cross-section; slightly or not flattened. Head prognathous; neck absent; 5 or 6 stemmata present. Anterior margin of labrum emarginate and toothed or crenulate. Mandible with apices bifid and strongly dentate; subapical pseudomola present (absent in Scaphidiini and Scaphiini); basal molar lobe absent. Urogomphi articulate (reduced or absent in some taxa); 2- or 1-segmented.

**Comments.** Adult diagnoses are provided in Newton *et al.* (2000) and larval diagnoses are available in Newton (1991). The New Zealand fauna contains 16 subfamilies (Klimaszewski & Watt 1997, Klimaszewski *et al.* 1996) and adult scaphidiines are easily distinguished from other staphylinids by their compact body form with a high pronotal volume and the 5-segmented antennal club (which is filiform in Scaphisomatini). A subfamily key is available in Klimaszewski & Watt (1997). Larval scaphidiines can be distinguished from other staphylinid larvae by the pres-



ence of a pseudomola and a crenulated labral margin. The New Zealand fauna contains 5 genera (2 endemic) and 23 species (21 endemic).

## KEY TO GENERA

- 1 Antenna clavate with a well developed club (Fig. 2, 3); protibia with outer row of well developed spines (Fig. 2, 3) .....(p. 16)... **Cypariini: *Cyparium***
- Antenna filiform with a loosely articulated club (Fig. 4); protibia without well developed spines (Fig. 107,108) ..... Scaphisomatini... 2
- 2(1) Antennomere 3 short and triangulate (Fig. 17–19); metacoxal line present (Fig. 1); anterior bead of pronotum obliterated at middle; membranes of abdomen not brick-wall patterned .....(p. 38)... ***Scaphisoma***
- Antennomere 3 elongate (Fig. 84); metacoxal line absent; anterior bead of pronotum present at middle; membranes of abdomen brick-wall patterned (Fig. 100) ..... 3
- 3(2) Terminal maxillary palpomere aciculate (Fig. 86); profemoral ctenidium present (Fig. 105) .....(p. 27)... ***Baocera***
- Terminal maxillary palpomere tapering but not aciculate (Fig. 87); profemoral ctenidium absent (Fig. 106)... 4
- 4(3) Metacoxae contiguous; fovea present on the hypomeron (Fig. 8, 9); empodial setae absent .....(p. 24)... ***Notonewtonia***
- Metacoxae separated (Fig. 1); prothoracic fovea absent; 2 empodial setae present (Fig. 111) .....(p. 18)... ***Brachynopus***

### Cypariini Achard, 1924

Cypariini Achard, 1924

**Type genus:** *Cyparium* Erichson, 1845

**Adult diagnosis.** Eye not emarginate near antennal insertion. Gular suture present and reaching submentum. Antenna clavate, not very slender, slightly flattened and symmetrical; antennomere 8 not reduced. Prosternum in front of coxa poorly or well developed (New Zealand taxa). Procoxal cavity internally closed by the fusion of the prosternum and hypomeron. Mesoventrite carinate and without a paxillum. Abdominal paratergites present, though may be reduced in number. Scutellum visible in dorsal view. Abdominal spiracle 8 usually present (sometimes atrophied). Pro- and mesotibiae spinose laterally.

**Larval diagnosis.** Head with 6 stemmata present. Pseudomola present and in the form of a lobe. Urogomphus present and 2-segmented.

**Comments.** *Cyparium*, the only member of Cypariini, contains 48 species known from most major biogeographical regions, but notably absent from southern South America, the western part of the Palaearctic, and Australia. No representatives of *Cyparium* have been found in New Guinea, New Caledonia, Fiji, and other Pacific islands even though there are large collections of scaphidiines from these areas.

The two species present in New Zealand appear to be members of a southern Gondwanan group, limited to New Zealand and South Africa based on examination of *C. piceum* Reitter from the Cape region. This group can be recognised from all other members of *Cyparium* by the antennal insertions that are widely separated, lack of a well developed frontal ridge on the head, and a prosternum which is long in front of the procoxa. Distal antennal insertions are also present in undetermined species from Mexico and Malaysia. The New Zealand species are possibly sister taxa based on their rather elongate and parallel-sided body, though this feature is present in some South American forms.

Larvae have been described for one species, *Cyparium sibiricum*, by Kompantsev & Pototskaya (1987) and a general description is found in Newton (1991). Adults and larvae have been collected mainly from Agaricales, coral fungi (Clavariaceae), and tooth fungi (Hydnaceae) (Newton, 1984; Kompantsev & Pototskaya, 1987; Leschen 1988). The biology of the New Zealand species is unknown.

*Cyparium thorpei* and *C. earlyi* are known from a total of 3 specimens, a form of rarity that may be rather unusual for the genus, because in other areas *Cyparium* specimens can be easily collected in high numbers using flight intercept traps (FITs) and directly from their host fungus. Five years of collecting fungi and placing FITs around the country (including Mangamuka to specifically catch *C. thorpei*) have not produced additional specimens. The rarity of these species may be indicative of a life history pattern different from other members of the genus.

### *Cyparium* Erichson, 1845

*Cyparium* Erichson, 1845: 3. Type species *Cyparium palliatum* Erichson, 1845, by monotypy.

*Yparicum* Achard, 1920. Type species: *Yparicum yunnanum* Archard, 1920, by monotypy. Synonymy by Löbl (1992).

### *Cyparium earlyi* new species

Fig. 2; Map 17

**Diagnosis.** Body form elongate; dorsal surfaces coarsely punctate. Antennae widely separate; frontal ridge absent. Prosternum well developed, medial carina absent. Two

primary setae on abdominal ventrite 1; setae on ventrites curled. Disc of elytron lacking punctate rows. Length of longest protibial spine about 1/2 width of tibia.

**Description.** Length 2.45 mm. Body form elongate, colour uniformly red-brown, except for light yellow or yellow-red hypomera, epipleura, edges of pronotum and abdomen, mouthparts, antennae, and legs. Thorax and elytra lacking microsculpture. Punctuation almost even and moderately coarse on head, thorax, elytra, and abdomen. Pubescence distinct. Head with frons at narrowest point between eyes 0.31 mm wide. Clypeus not impressed laterally, with basal part in same plane as frons; frontal ridge absent. Antennae with insertions widely separate; with antennomeres 3 and 4 subequal in length, 3 about 1.2× as long as 5 and about 2× as long as 6; antennomere 6 about as long as wide; antennomere 7 longer than wide, following three antennomeres subequal to 7, becoming gradually wider, antennomere 10 about 2× as wide as long (without stalk). Pronotum 0.70 mm long, 1.35 mm wide; lateral contours arcuate, near base almost straight; lateral and anterior marginal striae exposed in dorsal view. Prosternum well developed; length about equal to that of procoxa; medial carina absent. Exposed part of scutellum flat, wider than long. Elytra conspicuously elongate and weakly narrowed apically, longer than wide, about 2.1× as long as pronotum; disc lacking punctate rows. Lateral elytral contours weakly arcuate, lateral ridge visible in dorsal view; sutural striae shallow, extended laterally along basal margin slightly beyond outer 1/3 of basal width; adsutural area flat, impunctate. Hind wings fully developed. Metacoxal process of metaventrite flat, with prominent angles, margin concave. Exposed abdominal segments with very weak microsculpture consisting of punctures; abdominal ventrite 1 with 2 curled or suberect setae (1 broken off in the holotype), following ventrites each with 2 suberect setae. Tibiae slightly curved, length of longest protibial spine less than 1/2 width of tibia; protarsi of male with tarsomeres 1–3 equally, moderately widened, bearing ventral tenent setae; mesotarsomeres not widened.

**Comments.** Known from a single specimen collected in Fiordland, which is missing the right antenna and the left metatarsus.

**Distribution** (Map 17). South Island.  
– / FD.

**Material examined.** 1 specimen only. **Holotype** male, NZ: FD, Fiordland NP, S Borland V, 750 m, 6 Feb 1982, J W Early, litter amongst tussock and *Hebe*, LCNZ 82/9 (LUNZ).

**Etymology.** Named in honour of John Early as collector of this species and for his contributions to New Zealand entomology.

### *Cyparium thorpei* new species

Fig. 3; Map 18

**Diagnosis.** Body form elongate; dorsal surfaces glabrous with very fine punctures. Antennae widely separate; frontal ridge absent. Prosternum well developed, medial carina present. Two or 4 primary setae present on abdominal ventrite 1; all setae erect. Disc of elytron lacking punctate rows. Length of longest protibial spine less than half the width of the tibia.

**Description.** Length 3.05–3.15 mm. Body form elongate, colour uniformly black or red-black, except for ochreous apex of abdomen. Legs very dark brown. Antennae ochreous, antennomeres 7–10 of club darkened. Thorax and elytra lacking microsculpture. Punctuation almost even and very fine on head, thorax, elytra, and abdomen. Pubescence distinct. Head with frons at narrowest point between eyes 0.37 mm wide. Clypeus not impressed laterally, with basal part in same plane as frons; frontal ridge absent. Antennal insertions widely separate with antennomeres 3 and 4 equally long, each 1.2× as long as antennomere 5 and about 1.7× as long as 6; antennomere 6 about 1.4× as long as wide; antennomere 7 barely longer than wide (without basal stalk), following 3 antennomeres each slightly shorter than antennomere 7, becoming gradually wider; antennomere 10 about 1.5× as wide as long (without stalk). Pronotum 0.90 mm long, 1.85 mm wide; lateral contours arcuate, near base almost straight; lateral and anterior margin striae exposed in dorsal view. Prosternum well developed; length about equal to that of procoxa; medial carina present. Exposed part of scutellum flat, wider than long. Elytra conspicuously elongate and weakly narrowed apically, longer than wide, almost 3× as long as pronotum; disc lacking punctate rows. Lateral elytral contours weakly arcuate, lateral margin visible in dorsal view; sutural striae shallow, extended laterally along basal margin up to outer 1/3 of basal width; adsutural area flat, impunctate. Hind wings fully developed. Metacoxal process of metaventrite flat, with prominent angles, concave margin. Exposed abdominal segments with microsculpture consisting of punctures; ventrite 1 with 2 or 4 erect setae, following ventrites each with 2 erect setae. Tibiae slightly curved, length of longest protibial spine less than 1/2 width of tibia; protarsi of male with tarsomeres 1 to 3 equally, moderately widened, bearing ventral tenent setae; mesotarsomeres not widened.

**Comments.** This species, which is easily distinguished from *C. earlyi* by the characters listed in the diagnosis, is known from 2 specimens collected in the North Island. The specimen from Northland is black, has strong punctures with relatively few setae on the ventral portion of the abdomen, and has 4 primary setae on ventrite 1, whereas the specimen from the Taupo area is reddish black, has

weak punctures, and relatively more setae on the venter with 2 primary setae on ventrite 1.

**Distribution** (Map 18). North Island.

ND, TO / –.

**Material examined.** Holotype and 1 paratype. **Holotype** female, NZ: TO, Mt Ruapehu, 1160 m, Whakapapa Village, 14 Mar 2002, S E Thorpe, shaken from wood on ground in *Nothofagus* forest (AMNZ).

**Etymology.** Patronymic for Stephen Thorpe, one of the collectors of this species and an eager amateur coleopterist.

### Scaphisomatini Casey, 1893

Scaphisomatini Casey, 1893

**Type genus:** *Scaphisoma* Leach, 1815

**Adult diagnosis.** Eye emarginate or not near antennal insertion. Gular suture poorly developed or absent and not reaching submentum. Antenna very slender and filiform, flattened and typically asymmetrical, forming a loose antennal club; antennomere 8 reduced. Prosternum reduced, not visible in front of coxae. Procoxal cavity internally closed by the fusion of the prosternum and hypomeron. Mesoventrite with a paxillum. Abdominal paratergites absent or reduced in number. Scutellum scarcely if at all visible. Abdominal spiracle 8 absent. Tibiae rarely strongly spinose.

**Larval diagnosis.** Head with 5 stemmata present. Pseudomola present and variable; never in the form of an elongate lobe. Urogomphus typically 2-segmented, but sometimes 1-segmented or absent.

**Comments.** The tribe Scaphisomatini is the largest tribe in Scaphidiinae with 37 genera and 1092 species, at last count prior to this study, and is distributed worldwide. We are presently investigating the generic level relationships of the tribe and we use this study as the basis for determining the generic limits of *Brachynopus* and erecting the genus *Notonewtonia*.

### *Brachynopus* Broun, 1881

*Brachynopus* Broun, 1881: 664. Type species: *Brachynopus latus* Broun, 1881; by monotypy.

**Adult diagnosis.** Terminal maxillary palpus not aciculate. Antennomeres 3 and 4 elongate; 7, 9, and 10 symmetrical. Galea wider than long; brush apical and radulate. Surface of mentum setose. Anterior margin of pronotum with a bead. Hypomeron without a fovea. Prothoracic corbiculum

present or absent. Mesocoxal lines present on metaventrite. Metendosternum with stem present. Membranes of abdomen with brick-wall pattern. First abdominal ventrite without metacoxal area. Profemoral ctenidium absent. Mesotibia with 2 ventral spines. Metacoxae separate. Empodium bisetose. Internal sac of aedeagus elongate and symmetrical with or without tripartite basal sclerites.

**Description.** Length 1.50–2.60 mm. Body about as convex dorsally as ventrally; outline suboval, strongly narrowed apically. Dorsal vestiture reduced. Labral setae present and simple or apically notched. Mandible bidentate apically, apices short and blunt; subapical serrations present (at least on left mandible); prostheca well developed, lacking long fine setae. Maxillary palpus normal (tapering); 2 subapical setae present on palpus 2; palpus 3 swollen, shorter and thicker than palpus 4. Galea wider than long or somewhat narrower (*B. apicellus*, Fig. 75); brush apical and radulate; long apical setae absent. Lacinia with apical setae or teeth arranged into rows; inner and basal setae of lacinia elongate or absent, but apical setae extending to subapical area. Hypopharynx with (*B. latus*) or without 2 setae on the adoral surface; setae spinate if present. Labial palp 3-segmented; palpomere 1 distinctly shorter than 2; 3 small, shorter, or subequal to the combined length of 1 and 2; terminal labial palpomere not aciculate, inserted apically or subapically and slightly curved or straight; subapical palpomere with one seta. Mentum with anterior edge straight; surface setose. Anterior edge of submentum emarginate. Submaxillary area of head with microtubulate or foveate ducts. Gular area with or without transverse cluster of pores. Frontoclypeal suture present. Eye entire; interocular distance small. Antennal insertion below slight ridge and present at midline of eye. Antenna inserted near margin of frons; filiform; antennomeres 3 and 4 elongate; antennomeres 3–6 and 8 similar, long, not widened mesally, moderately flattened, becoming slightly thicker toward apex; antennomeres 7, 9, and 10 symmetrical, with mesal side widened gradually toward apex; larger than antennomere 8; antennomere 11 oval, almost symmetrical. Anterior tentorial tendon absent or present. Pronotum with basal lobe weakly developed. Prothoracic corbiculum present or absent. Anterior margin of procoxal cavity asetose or setose. Hypomeron in lateral view completely visible; apex not projecting beyond pronotum; fovea, impressions, or carinae absent; margined ventrally and apically, with apical margin sinuate; ventral margin not prominent. Prothoracic carina prominent with a bead; not completely visible in dorsal view. Anterior margin of pronotum with a bead. Posterior angle of pronotum rounded and not extending below ventral edge of elytra; extending to anapleural suture or not. Prosternal spine present. Mesoventrite with prepectus; secondary

lines present; median lines absent. Mesoventral lines present; connecting with mesocoxal cavity, impunctate; not parallel with outer margins of procoxal rests. Mesepimeron present with oblique line; about 1/3 width of metaventrite width. Mesepisterna large. Width of mesocoxa greater or less than intercoxal process; coxa round. Meso- and metaventrite separate with a distinct suture or partially fused with an internal ridge. Mesocoxal lines arcuate or parallel to coxa; impunctate. Meso- and metacoxal cavities widely separated, metacoxal process of metaventrite almost equally wide. Metaventrite relatively short, with sides shorter than lateral parts of mesepisterna; fused with metepisterna or not; anapleural suture completely obliterate or weakly indicated; with or without setose patch; primary setae present and located on the disc; transverse premetaxocal lines absent; discrimen absent; intercoxal plate present as a single plate. Metepisternal suture present. Metepisternum visible in ventral view; posterior line absent. Metendosternum with stem present. Scutellum visible in dorsal view or concealed below elytra; width about 1/2 or 1/3 entire width of pteronotum; transverse basal line or carina complete and forming a trapezoid. Metacoxae separate. Brick-wall membranes present on abdominal ventrites 1–4. Ventrite 1 with wide abdominal process, slightly narrower than metacoxal process of metaventrite; without intercoxal line; metacoxal lines absent; metacoxal bead impunctate and close to and parallel to coxal cavity. Primary setae present on ventrites 1–5; 2 on each segment. Abdominal vestiture absent. Paratergites absent on segment 4. Hind wings present, reduced, or absent. Elytron expanded ventrally, strongly narrowed apically with conspicuous narrow margin; with or without basal stria; sutural striae complete or not; basal and sutural striae connected; supraepipleural area large, slightly narrowed toward base, much wider than epipleura; epipleura weakly narrowed toward apex, stria present, joined to lateral striae at apical angles; lateral striae arcuate in lateral view; sutural spines present or absent; apical serrations absent. Metacoxal process of metaventrite digitiform. Profemoral ctenidium absent. Mesofemora in cross-section rounded or slightly flattened; subapical seta present and not spine-like. Tibiae robust, subcylindrical, smooth. Mesotibia distinctly longer than mesotarsus; 2 ventral mesotibial spines present, equal or subequal to each other and about as long as 2/3 of tarsomere 1. Metatarsi smooth; mesotarsomere 1 equal to, less than, or greater than the length of tarsomere 2. Empodium bisetose. Internal sac of aedeagus elongate and symmetrical with tripartite basal sclerites. Female coxites with apical styli bearing long setae.

**Larval diagnosis.** Head with 5 stemmata present. Pseudomola present and in the form of a dense field of elongate spines, not as an elongate lobe. Urogomphus 2-segmented.

**Comments.** Prior to our study, *Brachynopus* consisted of a single species, *B. latus*, and to this genus we add the following 3 species as new combinations (see following descriptions): *Brachynopus apicellus* (Broun), *B. rufus* (Broun), and *B. scutellaris* (Redtenbacher). The placement of these species is largely based on an unpublished phylogenetic study where *B. apicellus* and *B. rufus* were included as terminal taxa and *B. scutellaris* and *B. latus* were considered congeneric. In the cladistic analysis, details of which will be published subsequently, we demonstrate that *Brachynopus* is monophyletic and is the sister taxon to *Notonewtonia*, a group restricted to New Zealand. These 2 genera form a sister group to most of the remaining members of Scaphisomatini, apart from *Birocera* Löbl and *Bironium* Csiki, which are the basalmost members of the tribe.

*Brachynopus* is clearly a primitive taxon that is difficult to separate from all other genera. It is diagnosed by plesiomorphic characters and there appear to be no unique characters supporting its monophyly. The taxon is supported by a combination of characters and can be distinguished from other members of Scaphisomatini based on those features listed in the diagnosis, and especially the normal maxillary palpi with the terminal palpus tapering, unmodified antennomeres 3 and 4, and profemoral ctenidium absent. Meanwhile, the members of *Brachynopus* are all very different and well defined, but each species has characters that may align them with other genera outside of this New Zealand group. For example, all members but *B. apicellus* have a prothoracic corbiculum, a feature that is present in many derived scaphisomatines. *Brachynopus latus* and *B. scutellaris* have a tripartite basal sclerite in the internal sac that is present also in *Alexidia* (Löbl & Leschen 2003).

The larval diagnosis is based on specimens of *B. latus* and *B. scutellaris*.

### Key to *Brachynopus* species

- 1 Elytron bicoloured with a distinct pattern (Fig. 7) .....  
.....(p. 20)... *apicellus*  
—Elytron unicoloured (Fig. 4–6) ..... 2
- 2(1) Base of pro- and mesotibiae with well developed spines (Fig. 6) .....(p. 22)... *rufus*  
—Base of pro- and mesotibiae without well developed spines (Fig. 107) ..... 3
- 3(2) Epipleuron wide; body strongly narrowed apically (Fig. 4) .....(p. 21)... *latus*  
—Epipleuron narrow; body not strongly narrowed apically (Fig. 5) .....(p. 23)... *scutellaris*



***Brachynopus apicellus* (Broun), new combination**

Fig. 7, 28, 29, 74–76; Map13

*Scaphisoma apicella* Broun, 1880: 160.

**Diagnosis.** Body oval in outline and strongly narrowed apically; elytron bicolorous. Galea narrow. Lacinia with apical teeth arranged into rows; inner and basal setae absent. Terminal labial palpomere inserted apically and slightly curved. Submaxillary area of head with foveate ducts. Gular area with pores. Prothoracic corbiculum absent. Anterior margin of procoxal cavity asetose. Posterior angle of pronotum not extending to anapleural suture. Mesocoxal lines arcuate. Metaventricle not fused with metepisterna; setal patch present in male. Scutellum visible in dorsal view; width about 1/3 entire width of pteronotum. Microsculpture present on abdominal ventrites 1–4. Hind wings reduced to narrow flap. Elytron without coarse punctures; basal stria present; sutural spines present. Pro- and mesotibia without basal spines; mesotibial spines subequal in length. Length of mesotarsomere 1 greater than tarsomere 2. Sclerite of internal sac elongate.

**Description.** Length 1.70–1.85 mm. Body about 1.6× as long as wide. Head, thorax, and abdominal ventrites 1–4 moderately light ochreous to dark reddish-brown. Elytra on large anterior part darker than thorax, dark ochreous to black, on apical 1/3–1/2 lighter, usually yellowish, with small, dark subapical spot; humeral area with variably large light spot isolated or joined to apical yellowish area. Femora and tibiae colour similar to thorax, apical abdominal segments, tarsi, and antennae usually lighter. Head and dorsal side and most of venter with very fine, recumbent, inconspicuous pubescence. Middle part of metaventricle with distinct pubescence. Head with frontoclypeal suture evanescent, indicated by darkened line. Eyes very weakly emarginate. Antennae with antennomeres 5 and 6 equally long, slightly longer than antennomere 4; antennomeres 3 and 8 about equally long, each distinctly shorter than antennomere 4. Body oval in outline and strongly narrowed apically; lateral contour of pronotum and elytra almost continuous. Pronotum slightly narrower at base than elytra, with lateral striae not visible in dorsal view; lateral margins sinuate in lateral view, discal punctation sparse, extremely fine. Basal pronotal angles obtuse, slightly prominent, covering anterior edge of epipleura, barely touching Mesepimera; not extending to anapleural suture. Tip of scutellum exposed; width about 1/3 entire width of pteronotum. Elytra widest at basal 1/4, weakly narrowed basally, strongly narrowed posteriorly, with lateral margins rounded near base, oblique posterior basal 1/4, apical margin arcuate, inner apical angle situated posterior to outer apical angles, sutural striae distinct, parallel to suture, extended from apex to base, curved along basal

margins to form basal striae joined to lateral striae; sutural spines present. Lateral and epipleural striae deep, straight, gradually converging apically, epipleural striae evanescent shortly anterior to apical angles of elytra, supra-epipleural area near base about 1.5× as wide as epipleura. Elytral punctation sparse and very fine, as that on pronotum. Hind wings reduced to narrow flap.

Mandibles with short blunt apical and subapical teeth, subapical, long and flat setae simple. Galea narrow, with brush of fine apical setae. Lacinia with apical robust setae arranged into rows, lacking mesal setae. Maxillary palpi with palpomere 3 short, much shorter than palpomere 4, palpomere 3 thickened apically, at apex slightly thicker than base of antennomere 4. Labial palpi with palpomere 1 and 2 similar, wider than long, combined length shorter than palpomere 3; 3 inserted apically and slightly curved. Submaxillary area of head with foveate ducts. Gular area with pores. Prothoracic corbiculum absent.

Anterior margin of procoxal cavity asetose. Mesepimera small, with inner margin reaching mid-width of metepisterna. Ventral side of thorax and abdomen extremely finely punctate. Metaventricle with 1 pair of erect setae; not fused with metepisterna. Anterior metacoxal process of metaventricle slightly wider than posterior process. Mesocoxal lines arcuate, slightly asymmetrical; mesocoxal areas about as long as 2/3 of shortest interval to metacoxae. Exposed part of metepisterna large, parallel-sided, with conspicuous deep and wide impression along straight inner margin. Abdominal ventrites with microsculpture consisting of punctures. Ventrites 1–5 each with 1 pair of erect setae. Female coxites apical, styli bearing long setae. Tibiae robust, curved, not narrowed basally; pro- and mesotibia without basal spines; mesotibial spines subequal in length. Length of mesotarsomere 1 greater than tarsomere 2.

**Male.** Protarsomeres 1–3 widened and bearing tenent setae. Metaventral setal patch present in male. Apex of abdominal ventrite 5 arcuate. Apex of ventrite 6 slightly prominent in middle. Aedeagus as in Fig. 28, 29; sclerite of internal sac elongate.

**Comments.** *Brachynopus apicellus* can be distinguished from other members of the genus by its rather rounded body form, narrow supra-epipleural space, absence of spines at the base of the pro- and mesotibia, and bicolorous elytron. The form of the mouthparts is very unusual, especially the lacinia which has rows of bristles (Fig. 75), and these characters together with the absence of a corbiculum make the generic placement of this species uncertain.

Only 1 of the 3 specimens listed by Broun (1880) was located in the BMNH, and this was designated the lectotype.

**Distribution** (Map 13). North Island.

ND, AK, BP, GB / –.

**Material examined.** Lectotype and 23 non-type specimens — see Appendix 1 for collection details of specimens examined. **Lectotype** label information, SYN-TYPE [round, blue border]/Whangarei Heads. [hand-written]/New Zealand Broun Coll. Brit. Mus. 1922-482/290 [olive label]/Scaphisoma apicella. [handwritten]/Scaphisoma apicellum Broun R.J.W. Aldridge det 1975 SYNTYPE /acetate card with aedeagus mounted in balsam/ Scaphisoma apicella Broun, LECTOTYPE, desig. by I. Löbl & R. Leschen [red label] (here designated, so as to assure correct and consistent application of the name in the future) (BMNH).

### ***Brachynopus latus* Broun**

Fig. 4, 20–22, 84, 87–95, 97–102, 104, 106, 112; Map 14

*Brachynopus latus* Broun, 1881: 664.

*Baeocera fulvicollis* Broun, 1886: 891. **New synonymy.**

**Diagnosis.** Body oval in outline and strongly narrowed apically; elytron unicolorous. Galea wider than long. Lacinia with apical, inner, and basal setae present. Hypopharynx without setae on the adoral surface. Terminal labial palpomere inserted apically and strongly curved. Submaxillary area of head with foveate ducts. Gular area without transverse cluster of pores. Prothoracic corbiculum present. Anterior margin of procoxal cavity setose. Posterior angle of pronotum not extending to anapleural suture. Mesocoxal lines asymmetrically arcuate. Metaventricle fused with metepisterna with suture absent; setose patch absent. Scutellum concealed below elytra; width about 1/3 entire width of pteronotum. Microsculpture present on abdominal ventrites 1–4. Hind wings absent or reduced. Elytron strongly punctate; basal stria absent; sutural spines absent. Pro- and mesotibia without basal spines; mesotibial spines subequal. Length of mesotarsomere 1 slightly less than the length of tarsomere 2. Basal sclerite of internal sac tripartite.

**Description.** Length 1.55–2.0 mm, about 1.5× as long as wide. Body typically black, or prothorax lighter than elytra and most of venter. Elytral apex, apical abdominal segments, mouthparts and appendages usually ochreous. Pubescence very fine and recumbent on pronotum, hypomera, and elytra, moderately long on metaventricle and abdomen. Antennae long, antennomeres 3 and 4 subequal, antennomere 5 slightly longer than antennomeres 4 and 6, antennomere 8 about as long as and slightly wider than antennomere 3. Body oval in outline and strongly narrowed apically; lateral contours of pronotum and elytra almost contiguous and rounded. Pronotum with very fine punctation. Scutellum concealed below elytra; width about

1/3 entire width of pteronotum. Elytra widest near base, from widest point very weakly narrowed anteriorly; lateral striae starting at base, arcuate in anterior half, not extending along basal margin, joined with epipleural and apical striae; apical margin oblique, inner apical angle posterior to outer apical angles, sutural striae greatly shortened, usually distinct in apical 1/3 of sutural length, sometimes longer and extending about up to elytral mid-length; sutural spines absent. Supra-epipleural area slightly wider than epipleura at base, almost 3× as wide as epipleura at widest point near mid-length of elytron. Epipleura gradually narrowed apically. Discal punctation dense and very shallow, usually consisting of punctures of variable sizes, but larger than pronotal punctures. Wings strongly reduced, absent or remaining as very narrow rudiments.

Galea wider than long. Lacinia with apical, inner, and basal setae present. Hypopharynx without setae on adoral surface. Terminal labial palpomere inserted apically and strongly curved. Submaxillary area of head with foveate ducts. Gular area without transverse cluster of pores. Prothoracic corbiculum present

Venter with dense, extremely fine punctation. Anterior margin of procoxal cavity setose. Posterior angle of pronotum not extending to anapleural suture. Mesepimeron short. Metaventricle fused with metepisterna with suture absent; setose patch absent. Mesocoxal lines asymmetrically arcuate. Shortest interval between mesocoxae and metacoxae smaller than width of intercoxal process. Abdominal ventrites 1–4 with microsculpture consisting of punctures. Legs relatively short, tibiae almost straight, evenly thick. Pro- and mesotibia without basal spines; mesotibial spines subequal. Length of mesotarsomere 1 slightly less than length of tarsomere 2.

**Male.** Protarsomeres 1–3 widened and bearing tenent setae. Abdominal ventrite 5 slightly emarginate at apical margin. Ventrite 6 with small, triangular medio-apical process, emarginate at each side of latter. Aedeagus as in Fig. 20–22; basal sclerite of internal sac tripartite.

**Comments.** *Brachynopus latus* can be distinguished from other members of the genus by its round body form, large epipleural area, and lack of spines at the base of the pro- and mesotibia. Examination of the syntypes of *Baeocera fulvicollis*, all specimens of which are teneral, resulted in the synonymy of this species with *B. latus*.

*Brachynopus latus* is the most commonly collected scaphidiine in its range and has been collected in many habitats, including pastures, and almost anywhere where dead wood is present (Kuschel 1990; Leschen *et al.* in prep.). Larvae of *Brachynopus latus* prepare canopy retreats like many other scaphisomatines (Leschen 1996). Larvae feeding upside down on the hymenium layer of *Coltricia* (Fig. 83) were observed to invert their bodies horizontally

before inserting a faecal pellet into the canopy structure.

**Fungal hosts** (larval records indicated by an asterisk \*).

**Myxomycetes:** *Arcyria denudata*, *Stemonitis*. **Basidiomycetes:** *Agrocybe*, *Aseroe*, *Coltricia cinnamomea*\*, *Ganoderma*, *Phanerochaete sordida*, *Phellinus*, *Schizopora*, *?Scytinostroma*\*, *Stereum*, resupinate polypore, undetermined corticioid\*.

**Distribution** (Map 14). Three Kings Islands and northern half of the North Island. One C. E. Clarke specimen purportedly from Waiho Gorge in Westland is considered mislabelled based on collection sites for all other specimens.

TH / ND, AK, CL, WO, BP, TK, TO, GB, HB, RI / -

**Material examined.** 2 primary type specimens and 988 non-type specimens — see Appendix 1 for collection details of specimens examined. **Holotype** *Brachynopus latus* Broun: Holo-type [round, red border]/Type [round red border]/1160.[olive label, printed]/Parua/New Zealand Broun. Coll. Brit. Mus. 1922-182/*Brachynopus latus*. [handwritten]/*Brachynopus latus* Broun R. J. W. Aldridge det. 1975 HOLOTYPE (BMNH). **Lectotype** *Baeocera fulvicollis* Broun: SYN-TYPE [round blue border]/Type [round red border]/fulvicolle [handwritten] /1586./New Zealand. Broun Coll. Brit. Mus. 1922-482/*Baeocera fulvicolle* Broun R.J.W. Aldridge det. 1975 SYNTYPE / acetate label with aedeagus mounted in balsam/ *Baeocera fulvicollis* Broun LECTOTYPE desig. by I. Löbl & R. Leschen [red label] (here designated, so as to assure correct and consistent application of the name in the future); 1, SYN-TYPE [round, blue]/ Type [round red border]/Tiri [handwritten]/1586./*Baeocera fulvicollis* [handwritten]/*Baeocera fulvicolle* Broun R.J.W. Aldridge det 1975 SYNTYPE (BMNH).

### ***Brachynopus rufus* (Broun), new combination**

Fig. 6, 26, 27, 108, 110, 111; Map 15

*Baeocera rufa* Broun, 1881: 665.

*Baeocera armata* Broun, 1886: 891. **New synonymy.**

**Diagnosis.** Body oval in outline and weakly narrowed apically; elytron unicolorous (apex may be lighter in colour). Galea wider than long. Lacinia with apical, inner, and basal setae present. Terminal labial palpomere inserted subapically and almost straight. Submaxillary area of head with microtubulate ducts. Gular area without transverse cluster of pores. Prothoracic corbiculum present. Anterior margin of procoxal cavity setose. Posterior angle of pronotum extending to anapleural suture. Mesocoxal lines arcuate. Metaventrite fused or not with metepisterna. Scutellum concealed below elytra or with small tip exposed; width about 1/3 entire width of pteronotum. Microsculpture absent or indistinct on abdominal ventrites

1–4. Hind wings present. Elytron with well developed punctures; basal stria present; sutural spines present. Pro- and mesotibia with basal spines; mesotibial spines subequal in length. Length of mesotarsomere 1 greater than tarsomere 2. Sclerite of internal sac elongate.

**Description.** Length 1.8–2.2 mm. Body about 1.6× as long as wide, reddish-brown to black, apex of elytra, femora, and tibiae usually slightly lighter, apical abdominal segments, antennae, and tarsi lighter brown or ochreous. Body with pubescence very fine and recumbent. Antennae long, with antennomere 4 longer than antennomere 3, slightly shorter than antennomere 5, antennomeres 5 and 6 equally or almost equally long; antennomeres 4 and 8 equally long. Body oval in outline and weakly narrowed apically; lateral contours of pronotum and elytra separately arcuate. Pronotum with lateral striae not visible in dorsal view; punctation moderately sparse and extremely fine, even on entire disc; basal angles slightly prominent, touching (or almost touching) anterior margin of metepisterna; extending to anapleural suture. Minute tip of scutellum exposed or concealed; width about 1/3 entire width of pteronotum. Elytra with well developed punctures; widest in posterior basal 1/4, moderately narrowed anteriorly apically, with lateral contours partly oblique, apical margins truncate, inner apical angle situated posterior to line of outer apical angles, sutural striae entire, shallow, curved along base and joined with lateral striae to form basal striae. Lateral striae slightly arcuate in lateral view, joining epipleural striae near broadly rounded apical angles of elytra; sutural spines present. Supra-epipleural areas almost twice as wide as epipleura near base, epipleura and supra-epipleural areas parallel-sided anteriorly, gradually narrowed from level of metepimera toward apex. Hind wings fully developed.

Mandibles with subapical tooth acute, larger than short blunt apical tooth. Mesal margin of mandibles with subapical, flat comb of setae, lacking long, fine, subapical setae. Galea wider than long; lacking long, fine, apical setae. Lacinia with robust apical hooks; apical, inner, and basal setae present. Palpomere 3 of maxillary palpi long, gradually thickened apically, thicker at apex than base of palpomere 4. Labial palpi with palpomere 1 reduced, very short, length of palpomeres 1 and 2 combined shorter than palpomere 3; palpomere 3 inserted subapically and almost straight. Submaxillary area of head with microtubulate ducts. Gular area without transverse cluster of pores. Prothoracic corbiculum present.

Venter extremely finely punctate. Anterior margin of procoxal cavity setose. Thorax and abdominal ventrite 1 lacking microsculpture, following ventrites with indistinct microsculpture consisting of punctures. Metaventrite with anterior intercoxal area distinctly wider than posterior metacoxal process; fused or not with metepisterna.



Mesocoxal lines regularly, strongly arcuate, maximum length of mesocoxal areas about 1/2–2/3 of shortest interval between mesocoxal lines and metacoxae. Exposed part of mesepimera large, extending beyond inner margin of metepisterna. Exposed portion of metepisterna parallel-sided, grooved along inner margin. Tibiae slightly curved, evenly thick; pro- and mesotibia with basal spines; mesotibial spines subequal in length. Length of mesotarsomere 1 greater than tarsomere 2.

**Male.** Protarsomeres 1–3 widened and with tenent setae. Ventrite 6 prominent in middle to form rounded process. Aedeagus as in Fig. 26, 27; sclerite of internal sac elongate.

**Comments.** *Brachynopus rufus* can be distinguished from other members of the genus by its rather rounded body form, narrow epipleural area, presence of spines at the base of the pro- and mesotibia, and generally unicolorous elytron. Examination of a single type specimen *Baeocera armata* Broun, which was teneral, resulted in the synonymy of this species with *B. rufus*.

**Fungal hosts.** Basidiomycetes: undetermined corticioid.

**Distribution** (map 15). Northern half of the North Island.

ND, AK, CL, WO, BP, TO, GB / –.

**Material examined.** 2 primary types plus 51 non-type specimens — see Appendix 1 for collection details of specimens examined. **Syntype** *Baeocera armata* Broun, teneral, labelled: SYN-TYPE [round, blue border]/Type [round red border]/Woodhill Kaipara. [handwritten]/1557./New Zealand Broun Coll. Brit. Mus. 1922-482/*Baeocera armata* Broun R.J.W. Aldridge det 1975 SYNTYPE/acetate with aedeagus mounted in balsam (BMNH). **Holotype** *Baeocera rufa* Broun labelled: Holo-type [round, red border]/Type [round red border]/Parua [handwritten: no full stop]/New Zealand Broun Coll. Brit. Mus. 1922-482/1161 [olive label]/*Baeocera rufa*. [handwritten] (BMNH).

### *Brachynopus scutellaris* (Redtenbacher), new combination

Fig. 5, 23–25; Map 16

*Scaphisoma scutellare* Redtenbacher, 1867: 32.

*Scaphisoma tenellum* Pascoe, 1876: 48. Synonymy by Reitter, 1880: 44.

*Baeocera scutellaris* (Redtenbacher). Incorrect generic placement by Reitter, 1880: 44.

*Baeocera rufipes* Broun, 1886: 833. **New synonymy.**

**Diagnosis.** Body elongate-oval in outline and weakly narrowed apically; elytron unicolorous. Galea wider than long. Lacinia with apical, inner, and basal setae present (basal and inner setae absent in some specimens). Terminal labial palpomere inserted apically and strongly curved. Submax-

illary area of head with foveate ducts. Gular area without transverse cluster of pores. Prothoracic corbiculum present. Anterior margin of procoxal cavity setose. Posterior angle of pronotum not extending to anapleural suture. Mesocoxal lines parallel to coxae. Metaventrite fused with metepisterna; setose patch absent. Scutellum visible in dorsal view; width about 1/2 entire width of pteronotum. Microsculpture present on abdominal ventrites 1–4. Hind wings present or reduced. Elytron strongly punctate; basal stria absent; sutural spines present in some specimens. Pro- and mesotibia without basal spines; mesotibial spines equal in length to each other. Length of mesotarsomere 1 subequal and slightly less than tarsomere 2. Basal sclerite of internal sac tripartite.

**Description.** Length 1.50–2.60 mm. Body variable, but mainly dark reddish-brown, apex of elytra and abdomen usually lighter (specimens from TH are red). Thorax and elytra, or thorax only, rarely ochreous. Antennae, femora, and tibiae as body or slightly lighter, tarsi usually distinctly lighter. Body with pubescence very fine and recumbent. Head without trace of frontoclypeus suture. Eyes not emarginate. Antennae long, with antennomeres 4 and 6 about equally long, slightly longer than antennomere 3 and shorter than antennomere 5; antennomere 8 about as long as and distinctly thicker than antennomere 3. Body elongate-oval in outline and weakly narrowed apically; lateral contours of pronotum and elytra separately arcuate. Pronotum with lateral striae not or barely visible in dorsal view; punctuation dense, very fine and shallow, punctures becoming usually larger toward base; basal angles not prominent apically, reaching about mid-line of mesepisterna and not extending to anapleural suture, anterior to exposed anterior margin of metepisterna. Minute tip of scutellum exposed; width about 1/2 entire width of pteronotum. Elytra moderately narrowed apically, with lateral contours partly oblique, apical margin truncate, angle situated posterior to line of outer apical angles, sutural striae shortened, extending from apex up to about anterior 1/3 of sutural length, sometimes only to mid-length, or longer and reaching anterior 1/4 of sutural length; strongly punctate; sutural spines present in some specimens. Lateral striae curved basally, not extending along basal margin of elytra to form basal striae. Supra-epipleural areas not strongly widened, about twice as wide near base as epipleura, gradually narrowed apically. Epipleura obsolete near apical angles of elytra. Hind wings fully developed or reduced to an elongate flap with wing veins present.

Mandibles with subapical long fine setae and wide comb setae. Lacinia with apical hooks and apical and subapical long fine setae. Galea wider than long. Lacinia with apical, inner, and basal setae present (inner and basal setae absent in some specimens). Labial palpi with palpomere 1 slightly

longer than palpomere 2, combined length of palpomeres 1 and 2 subequal to length of palpomere 3; palpomere 3 inserted apically and strongly curved, short, swollen. Submaxillary area of head with foveate ducts. Gular area without transverse cluster of pores. Prothoracic corbiculum present.

Venter extremely finely punctate. Anterior margin of procoxal cavity setose. Thorax lacking microsculpture, abdominal ventrites 1–4 with distinct microsculpture consisting of punctures. Mesocoxal lines regularly arcuate and parallel to coxa, maximum length of mesocoxal areas about 1/4–1/3 length of shortest interval between mesocoxal lines and metacoxae. Exposed portion of mesepimera short, not exceeding inner margin of mesepisterna; mesepisterna laterally much shorter than lateral parts of metaventrite. Metaventrite large, with 1 pair of erect setae, length between meso- and metacoxae exceeding width of intercoxal process; fused with metepisterna but clearly delimited by more or less angulate line; setose patch absent. Exposed portion of metepisterna parallel-sided. Tibiae barely curved, evenly thick; pro- and mesotibia without basal spines; mesotibial spines equal in length to each other. Length of mesotarsomere 1 subequal and slightly less than tarsomere 2.

**Male.** Protarsomeres 1–3 widened and with tenent setae. Apical margin of ventrite 5 truncate. Ventrite 6 prominent in middle to form triangular process. Aedeagus as in Fig. 23–25; basal sclerite of internal sac tripartite.

**Comments.** *Brachynopus scutellaris* can be distinguished from other members of the genus by its rather elongate body form, narrow epipleural area, absence of spines at the base of the pro- and mesotibia, and unicolorous elytron (which is present in most specimens). Examination of the type specimens *Scaphisoma tenellum* Pascoe and *Baeocera rufipes* Broun resulted in the synonymy of these species with *Brachynopus scutellaris*. Comparison of specimens of this species with those of *Brachynopus latus* confirms that the placement of this genus is correct, especially with regard to the unusual tripartite sclerite of the aedeagus.

*Brachynopus scutellaris* is perhaps one of the most variably sized scaphidiines known to us, with a distribution throughout New Zealand including offshore islands (recorded under *Scaphisomatini* new genus sp. 1 for the Chatham Islands in Emberson 1998). Populations of this species usually have well developed hind wings, but Chatham Islands' populations are brachypterous. An aberrant specimen with an unusually rugose elytron was noted by May (1958). This species is quite abundant and has been collected from dead wood (see list of species by Kuschel 1990 who listed this species in '*Baeocera*').

Larvae of *B. scutellaris* prepare canopy retreats and are quite conspicuous on small rotting branches infected

with encrusting Basidiomycetes.

**Fungal hosts** (larval records indicated by an asterisk\*). Myxomycetes: *Arcyria incarnata*, *Fuligo septica*, *Physarum* cf. *leucophaeum*, *Stemonitis*, *Trichia floriformis*, undetermined plasmodium. Basidiomycetes: *Bjerkandra adusta*, *Ganoderma*, *Hyphodontia*\*, *Inonotus nothofagi*, *Phellinus kamahi*\*, *Poria* sp., *Schizopora*, *Trametes* (= *Coriolus*?), *Trametes versicolour*, white rot on *Nothofagus*, undetermined corticioids\*, undetermined polypores (listed as brackets, resupinate, and *Fomes* type).

**Distribution** (Map 16). Throughout New Zealand.

TH / ND, AK, CL, BP, TK, TO, GB, HB, WI, WN, WA / SD, NN, BR, WD, MB, KA, NC, MC, OL, SC, DN, FD, SL, SI / CH.

**Material examined.** 3 primary types plus 863 other specimens — see Appendix 1 for collection details of specimens. *Baeocera rufipes* Broun, **lectotype**: SYN-TYPE [round blue border]/ Type [round red border]/1481. /Taieri Otago. [handwritten]/New Zealand Broun Coll. Brit. Mus. 1922-482/*Baeocera rufipes*. [handwritten]/ *Baeocera rufipes* Broun R.J.W. Aldridge det. 1975, SYNTYPE /acetate label with aedeagus mounted in balsam/*Baeocera rufipes* Broun, LECTOTYPE, desig. by I. Löbl & R. Leschen [red label] (here designated, so as to assure correct and consistent application of the name in the future) (BMNH); 1 paralectotype: SYN-TYPE [round blue border]/1481. / Taieri [handwritten]/New Zealand Broun Coll. Brit. Mus. 1922-482/*Baeocera rufipes*. [handwritten]/ *Baeocera rufipes* Broun R.J.W. Aldridge det. 1975, SYNTYPE (BMNH); 2 paralectotypes [card mounted on same pin], SYN-TYPE [round blue border]/ 1481. /Taieri [handwritten]/New Zealand Broun Coll. Brit. Mus. 1922-482/*Baeocera rufipes*. [handwritten]/ *Baeocera rufipes* Broun R.J.W. Aldridge det. 1975, SYNTYPE (BMNH). **Lectotype** *Scaphisoma scutellare* Redtenbacher: (?Syntype), Hochst. 1860/Novara 1857-1859 Reise/Scutellare – Nov: Zeel: Redt./*Scaphisoma scutallere* Redtenbacher, LECTOTYPE, desig. by I. Löbl & R. Leschen [red label] (here designated, so as to assure correct and consistent application of the name in the future) (NHMW). **Holotype** *Scaphisoma tenellum* Pascoe: male, Holotype [red, round]/ New Zeal./Pascoe Coll.98-60/*Scaphisoma tenellum* Pasc. Type [handwritten]/ *Scaphisoma tenellum* Pasc./ *Scaphisoma tenellum* Pascoe R.J.W. Aldridge det. 1976 HOLOTYPE (BMNH).

### **Notonewtonia new genus**

Type species: *Notonewtonia thayerae* n. sp.

**Diagnosis.** Maxillary palpus normal (tapering). Antennomeres 3 and 4 elongate; 7, 9, and 10 symmetrical. Galea wider than long; brush apical and paniculate. Surface

of mentum setose. Anterior margin of pronotum with a bead. Hypomerion with anterior fovea. Prothoracic corbiculum absent. Metacoxal lines present on metaventrite. Metendosternum with stem present. Membranes of abdomen brick-wall patterned. First abdominal ventrite with intercoxal line. Profemoral ctenidium absent. Mesotibia with 2 ventral spines. Metacoxae contiguous. Empodium asetose.

**Description.** Length 2.40–2.80 mm. Shape of the body robust, narrowed in *N. thayerae*. Dorsal vestiture reduced. Labral setae present and apically frayed. Mandible bidentate apically, subapical serrations present (at least on left mandible); prostheca with flat comb of setae, lacking long, fine subapical setae. Maxillary palpus normal (tapering); 3 subapical setae present on palpus 2; 3 long, about as long as 4, moderately thickened apically. Galea wider than long or slightly narrowed; brush apical and paniculate. Inner and basal setae present on lacinia. Hypopharynx setose. Labial palp 3-segmented; palpomere 1 small, 2 much larger than 1, elongate, palpomeres 1 and 2 each about as long as palpomere 3; terminal labial palpomere not aciculate, inserted subapically and straight; subapical palpomere with 1 seta. Mentum with anterior edge straight; surface setose. Anterior margin of submentum invaginate. Submaxillary area of head with microtubulate ducts. Gular area with transverse cluster of pores. Frontoclypeal suture present. Eye entire; interocular distance small. Antennal insertion below slight ridge and present at midline of eye. Antenna filiform; antennomeres 3 and 4 elongate; antennomeres 7, 9, and 10 symmetrical. Anterior tentorial tendon present. Prothoracic corbiculum absent. Anterior margin of procoxal cavity setose. Hypomerion in lateral view completely visible; apex projecting beyond pronotum or not; fovea present. Prothoracic carina prominent with a bead; not completely visible in dorsal view; straight in lateral view. Anterior margin of pronotum with a bead. Posterior angle of pronotum acute and slightly prominent, not extending below ventral edge of elytra; not extending to anapleural suture and covering anterior margin of mesepimera. Prosternum with spine present. Mesoventrite with prepectus; secondary lines present; median lines absent. Mesoventral lines present; connecting with mesocoxal cavity, impunctate; not parallel with outer margins of procoxal rests. Mesepimeron present and about 1/3 length of width of metaventrite. Mesocoxa equal to or less than width of the intercoxal process; coxa round or transverse. Meso- and metaventrites separate. Mesocoxal lines arcuate or parallel to coxa, impunctate. Metaventrite with or without setose patch; primary setae present and located on the disc; transverse premetacoxal lines absent; discrimen absent; intercoxal plate present as a single plate. Metepisternal suture present and impunctate. Metepisternum visible in

ventral view; posterior line absent. Metendosternum with stem present. Scutellum visible dorsally; width about 1/2 entire width of pteronotum; transverse basal line or carina complete and forming a trapezoid. Metacoxae contiguous. Brick-wall membranes present on abdominal ventrites 1–4. Abdominal process on ventrite 1 with intercoxal line; metacoxal lines absent; metacoxal bead impunctate; primary setae present. Primary setae present on ventrites 2–4; 2 on each segment. Abdominal vestiture absent. Paratergites absent. Hind wings present. Elytron with basal stria present; sutural striae shortened or elongate; basal and sutural striae connected or not; epipleural stria present; sutural spines and apical serrations absent. Metacoxal process of metaventrite digitate. Profemoral ctenidium absent. Mesofemora in cross-section rounded; subapical seta present and not spine like. Tibiae smooth. Mesotibia distinctly longer than mesotarsus; 2 ventral mesotibial spines present, subequal, about as long as 2/3 of tarsomere 1. Metatarsi smooth; length of mesotarsomere 1 greater than tarsomeres 2 and 3 combined. Empodium asetose.

**Comments.** The endemic genus *Notonewtonia* is described for two new species that are unique in Scaphidiinae in having shallow foveae on the hypomerion. Other characters defining this genus are listed in the diagnosis.

The biology of the included species is unknown, and most specimens were found singly and were collected mainly in flight intercept traps.

**Etymology.** Combination of the prefix *notos*, Greek for South, combined with Newton, which is patronymic for Al Newton, one of the collectors of this new genus and for his contributions to staphyliniform systematics.

### *Notonewtonia thayerae* new species

Fig. 8, 30, 31, 77–79, Map 19

**Diagnosis.** Body outline narrow. Frons with 2 impressions. Galea with interspersed apical rows of long, fine, setae. Anterior margin of prementum sinuate. Posterior angles of pronotum projecting beyond pronotum. Hypomerion with 2 setose foveae. Width of mesocoxa less than width of the intercoxal process; transverse. Metaventrite with setose patch; mesocoxal lines arcuate. Basal and sutural striae not connected. Profemora with ctenidium of very short, fine setae.

**Description.** Length 2.40–2.65 mm. Body outline narrow, about 1.75× as long as wide, black, femora and tibiae slightly lighter, apical abdominal segments, antennae and tarsi much lighter, ochreous or light brown. Head, thorax, elytra, and abdominal ventrite 1 with relatively long, recumbent pubescence. Head with frontoclypeal suture completely evanescent; frons with 2 impressions. Eyes very weakly

notched. Antennae with antennomeres 4–6 almost equally long, their lengths each distinctly longer than antennomere 3; antennomere 8 slightly longer than antennomere 3. Galea with interspersed apical rows of long, fine, setae. Anterior margin of prementum sinuate. Pronotum at base conspicuously narrower than elytra, with lateral striae not visible in dorsal view; lateral margins sinuate in lateral view, punctation evenly very fine and dense; posterior angles of pronotum projecting beyond pronotum. Hypomera with 2 ventral setose foveae, anterior fovea larger than posterior one; margins at anterior and posterior ventral angles expanded to form flat, smooth areas. Tip of scutellum exposed. Elytra at widest posterior basal 1/3, relatively strongly narrowed basally, moderately narrowed posteriorly, with lateral margins rounded near base, apical margin truncate, inner apical angle situated posterior to line of outer apical angles, sutural striae strongly shortened, evanescent before reaching anterior half of sutural length; lateral striae curved anteriorly and extending along base to form basal striae ending near scutellum. Lateral striae shallow, straight. Epipleural striae becoming gradually finer apically, obsolete before reaching apical 1/4 of lateral length of elytra; epipleura moderately narrow, distinctly wider than supra-epipleural area anteriorly, about equally wide to epipleura in middle. Elytral punctation dense and relatively coarse. Hind wings fully developed, functional. Mesepimera about as long as interval to mesocoxa, not in same plane as mesepisterna and sharply delimited by latter. Mesoventral disc and middle part of metaventricle with dense and moderately coarse punctation, lateral parts of metaventricle sparsely and very finely punctate. Width of mesocoxa less than width of the intercoxal process; transverse. Metaventricle with patch of setae. Mesocoxal lines strongly arcuate and asymmetrical; mesocoxal areas large, only slightly shorter than shortest interval to metacoxae. Exposed part of metepisterna parallel-sided, suture straight, partly fused. Abdominal ventrites lacking microsculpture. Profemora with ctenidium of very short, fine setae (weakly developed in some specimens). Protibiae strongly narrowed basally, meso- and metatibiae barely narrowed basally.

**Male.** Protarsomeres 1–3 widened and bearing tenent setae. Apical margin of abdominal ventrite 5 truncate. Ventrite 6 gradually narrowed apically, with hyaline tip. Aedeagus as in Fig. 30, 31.

**Comments.** The presence of 2 shallow impressions on the head, hypomeral foveae setose, and short sutural striae on the elytra can easily distinguish *N. thayerae* from *N. watti*.

**Distribution** (Map 19). North Island and western South Island.

ND, TO, HB / NN, BR, WD, OL.

**Material examined.** Holotype and 16 paratypes — see Appendix 1 for collection details of specimens. **Holotype.** male, New Zealand, [BR], 1.8 km N Punakaiki, 50 m, 19.xii.1984–20.i.1985 hdwd.-podo.-nikau for. A. Newton/M. Thayer 719 window trap, barcode NZAC04010512 (NZAC).

**Etymology.** Patronymic for Margaret Thayer, one of the collectors of this new species and in recognition for her contributions to staphylinid systematics.

### *Notonewtonia watti* new species

Fig. 9, 32, 33, 80–82; Map 20

**Diagnosis.** Body outline broad. Frons without 2 impressions. Galea without interspersed apical rows of long, fine, setae. Anterior margin of prementum concave. Posterior angles of pronotum not projecting beyond pronotum. Hypomeron with 1 asetose fovea. Width of mesocoxa more than width of the intercoxal process; round. Metaventricle without setose patch; mesocoxal lines parallel to coxae. Basal and sutural striae connected. Profemora without ctenidium.

**Description.** Length 2.7–2.8 mm. Body outline broad, about 1.7× as long as wide, black, femora and tibiae not or slightly lighter than body. Abdominal apex, antennae, and tarsi dark brown. Head and body with pubescence very short and fine, inconspicuous at high (200×) magnification. Head with frontoclypeal suture completely evanescent; frons lacking impressions. Eyes very weakly notched. Antennae with antennomeres 4–6 almost equally long, distinctly longer than antennomere 3; antennomere 8 slightly longer than antennomere 3. Galea without interspersed apical rows of long, fine, setae. Anterior margin of prementum concave. Pronotum at base moderately narrower than elytra, with lateral striae not visible in dorsal view; lateral margins sinuate in lateral view, punctation evenly very fine and dense. Posterior pronotal angles obtuse, touching anterior margin of mesepimera and not projecting beyond pronotum. Hypomeron with 1 anterior shallow fovea, consisting of an anterior margin raised to form 2 separate ridges; upper ridge deflected dorsally and extended posteriorly parallel lower ridge, lower ridge forming ventral margin of hypomeron. Tip of scutellum exposed. Elytra widest at posterior basal 1/5, weakly narrowed basally, moderately narrowed posteriorly, with lateral margins rounded near base, oblique posterior basal 1/4, apical margin truncate, inner apical angle situated to about same level as outer apical angles, sutural striae very fine, parallel to suture, extended from apex to base and curved along basal margins to form basal striae joined to lateral striae. Lateral



and epipleural striae moderately deep, straight, gradually converging to lateral margins, epipleural striae evanescent near to apical angles of elytra, epipleura and supra-epipleural areas equally wide. Elytral punctation sparse and very fine, at base and on most central surface of disc similar to that on pronotum, coarser on lateral portions of disc. Hind wings fully developed, functional. Mesepimera small, with inner margin in line with inner margin of metepisterna. Mesoventral disc moderately coarsely punctate, metaventrite with extremely fine punctation and 1 pair of erect setae; setose patch absent. Width of mesocoxa more than width of the intercoxal process; shape of coxa round. mesocoxal lines almost parallel to coxal cavities, impunctate; mesocoxal areas short, about 1/4 length of shortest interval to metacoxae. Exposed part of metepisterna narrow, slightly widened anteriorly, wider at apex, with suture wide and deep, slightly curved. Abdominal ventrites with microsculpture consisting of punctures. Ventrites 1–5 each with 1 pair of erect setae. Styli of female coxites apical, bearing long setae. Profemora without ctenidium. Tibiae robust, subcylindrical, not narrowed basally.

**Male.** Protarsomeres 1–3 widened and bearing tenent setae. Apex of abdominal ventrite 5 arcuate. Apex of ventrite 6 expanded to form triangular lobe. Aedeagus as in Fig. 32, 33.

**Comments.** *Notonewtonia watti* can be distinguished easily from *N. thayerae* by the absence of setae within a single hypomerall fovea, and complete sutural striae extending to the base of the elytra.

**Distribution** (Map 20). North Island.  
ND, CL, WO, TO / –.

**Material examined.** Holotype and 5 paratypes — see Appendix 1 for collection details of specimens. **Holotype:** male, New Zealand, WO, Hapua Kohe Ra. 3 km SW of Kaihere, 29 Jan 1984, J.C. Watt, ex rotten *?Knightia* log, barcode NZAC04008987 (NZAC).

**Etymology.** Patronymic for Charles Watt, one of the collectors of this new species and in recognition for his contributions to New Zealand entomology (especially Coleoptera).

### **Baeocera** Erichson, 1845

*Baeocera* Erichson, 1845: 4. Type species: *Baeocera falsata* Achard, 1920. ICZN, 1982.

*Sciatrophes* Blackburn, 1903: 100. Type species: *Sciatrophes latens* Blackburn, 1903. By monotypy. First synonymised in ICZN, 1982.

*Cyparella* Achard, 1924: 28. Type species: *Scaphisoma rufoguttatum* Fairmaire, 1898. By original designation. First synonymised by Löbl, 1987.

*Amaloceroschema* Löbl, 1967: 1 (subgenus). Type species:

*Baeocera freudei* Löbl, 1967. By original designation.  
*Eubaeocera* Cornell, 1967: 2. Type species: *Baeocera abdominalis* Casey, 1900. By original designation. First synonymised under *Sciatrophes* by Löbl, 1977.

**Diagnosis.** Last maxillary palpomere aciculate. Antennomeres 3 and 4 elongate; 7, 9, and 10 asymmetrical or not. Galea narrow (wider than long); brush apical and paniculate. Surface of mentum setose. Anterior margin of pronotum with a bead. Hypomeron without fovea. Prothoracic corbiculum present. Mesocoxal lines present on metaventrite. Metendosternum with stem present. Membranes of abdomen brick-wall-patterned. First abdominal ventrite without metacoxal bead. Profemoral ctenidium present. Mesotibia with 2 ventral spines. Metacoxae contiguous. Empodium unisetose.

**Description** (characters which are variable in the genus but are present in all New Zealand species are indicated by an asterisk (\*) with the exceptions indicated). Length 1.00–3.10 mm. Dorsal vestiture reduced. Labral setae present and simple. Mandible bi- or unidentate\* apically, subapical serrations absent. Maxillary palpus aciculate with palpomere 3 strongly swollen\* and base of 4 much narrower than the apex of 3; 1\* or 3 or more subapical seta present on palpus 2. Galea narrower\* or wider than long; brush apical and paniculate (with elongate setae that are not arranged into well defined rows). Lacinia narrow\* or broad; inner and basal setae present or absent\* from mesal edge of lacinia, but apical setae extending to subapical area. Hypopharynx without (*B. actuosa*) or with\* 2 setae on the adoral surface; setae spinate. Labial palp 3-segmented; terminal labial palpomere aciculate\* or normal (tapering), inserted apically and strongly curved\* or straight (*B. actuosa*); subapical palpomere with 1 seta. Mentum with anterior edge straight; surface setose. Apex of submentum invaginate. Submaxillary area of head with\* or without microtubulate ducts present (weakly developed in *B. actuosa*). Gular area with transverse cluster of pores. Frontoclypeal suture present. Eye entire\* or notched; interocular distance small. Antennal insertion below slight ridge and present at midline of eye. Antenna filiform; antennomeres 3 and 4 elongate, sometimes 3 is short but never triangulate; antennomeres 7, 9, and 10 symmetrical\* or not (*B. actuosa*). Anterior tentorial tendon present or absent\*. Prothoracic corbiculum present. Anterior margin of procoxal cavity setose. Hypomeron in lateral view completely\* or partly visible from side; apex projecting beyond pronotum\* or not; fovea absent. Prothoracic carina prominent with a bead; not completely visible in dorsal view. Anterior margin of pronotum with a bead. Posterior angle of pronotum acute and extending below ventral edge of elytra; straight or ventrally curved\* in lateral view; extending to anapleural suture. Prosternum with spine

present. Mesoventrite with\* or without prepectus (mesoventral space); secondary lines absent; median lines absent (*B. tenuis*) or present (opened\* or closed posteriorly and sometimes parallel to coxae). Mesoventral lines present; connecting with mesocoxal cavity, impunctate\* or not; not parallel with outer margins of procoxal rests. Mesepimeron present or absent. Mesocoxa wider\* (subequal in *B. actuosa*), equal to, or narrower than, intercoxal process; coxa round. Meso- and metaventrites separate\*, fused (*B. actuosa*), or partially fused; internal ridge present\* or absent (*B. actuosa*). Mesocoxal lines arcuate\* or parallel to coxae; impunctate, finely\*, or coarsely punctate. Metaventrite with or without\* setose patch; primary setae present and located on the disc; transverse premetacoxal lines absent; discrimen absent; intercoxal plate present as a single plate. Metepisternal suture present; punctate (*B. tenuis*) or not\*. Metepisternum visible in ventral view; posterior line absent. Metendosternum with stem present. Scutellum visible dorsally or concealed below elytra; width about 1/2 or 1/3\* entire width of pteronotum; transverse basal line or carina complete and forming a trapezoid. Metacoxae contiguous\* or separate. Brick-wall membranes present on abdominal ventrites 1–4. Ventrite 1 without intercoxal line on abdominal process; metacoxal lines present and parallel to coxae; metacoxal bead punctate (*B. actuosa*) or impunctate (finely punctate)\*; primary setae present; elongate punctures or striae present or absent\*. Primary setae present on ventrites 2–4; 2\* or 4 on each segment (absent in some *B. actuosa*). Abdominal vestiture absent. Paratergites absent or 1 may be present on segment 6. Hind wings present or absent. Elytron with basal stria present or absent; sutural striae shortened or elongate; basal striae absent\* and length of sutural striae variable; epipleural stria present\* or absent (some specimens of *B. epipleuralis*); sutural spines and apical serrations present or absent\*. Metacoxal process of metaventrite triangular (*B. actuosa*) or digitate\*. Profemoral ctenidium present. Mesofemora in cross-section rounded; subapical seta present and not spine-like. Tibiae smooth. Mesotibia distinctly longer than mesotarsus; 2 ventral mesotibial spines present and subequal to each other, about as long as 2/3 of tarsomere 1. Metatarsi smooth; mesotarsomere 1 slightly greater than 2\* or 2 and 3 combined (*B. actuosa*), or equal to or less than 2. Empodium unisetose.

**Larval diagnosis.** Head with 5 stemmata present. Pseudomola present and fan shaped; never in the form of an elongate lobe. Urogomphus 1- (*B. actuosa*), 2-segmented, minute or absent.

**Comments.** The genus *Baeocera* is widely distributed and diverse, with over 200 species, and morphologically difficult to define. The generic description here is derived

from characters present in taxa that are presently placed in the genus, though preliminary cladistic data show that *Baeocera* is a paraphyletic taxon, especially with respect to the placement of some Asian and Indonesian species. Despite the question of monophyly, we believe that all members we place in the *Baeocera* below firmly belong to the genus, including *B. actuosa* (see below). Many of the microstructure observations are based on complete dissections of *B. actuosa*, *B. elenae*, *B. epipleuralis*, and *B. tenuis*, but many of the characters need to be examined in the remaining species. Nevertheless, only those variable characters important for identification are listed in the following descriptions.

The composition and phylogenetic relationships of the New Zealand *Baeocera* reveals some interesting patterns. Perhaps most striking is the absence of members of the *B. lenta* group (Löbl 1992), a group that is widely distributed, species-rich, and present in Asia, New Guinea, Fiji, and Australia. The placement of *B. actuosa* and *B. abrupta* is uncertain at this point.

All species, except for *B. actuosa* and *B. abrupta*, are apterous and share the following aedeagal characters: flat and striate (at least in its apical portion) flagellum and presence of a basal flagellar guide-sclerite (Cornell 1967). Though the shape of the aedeagus varies in this group, the two preceding characters unify most of the New Zealand taxa into one group and may include at least one species from Australia, *B. latens* (Blackburn). The bodies of this group are highly convex, apart from *B. tenuis*, which is rather flattened and is very similar to *B. latens*. *Baeocera latens* differs from this group by having long sutural striae that extend along the elytral base, ventrite 1 with a basal row of striae, and notched parameres. This group of species can be further subdivided into those taxa with the tibiae strongly narrowed toward the base (especially the metatibiae) and those species with very weakly narrowed tibiae.

Most members of *Baeocera* are collected easily by sifting leaf litter and rotten, fungus-covered logs. Some members can be taken from their host fungus, which are typically slime moulds.

### Key to *Baeocera* species

In contrast to the other keys presented elsewhere in this work, this key requires dissections of male specimens for couplets 8–11 to confirm species identity (distributions are listed for these species which may help facilitate identification for these species). The species *B. benolivia*, *B. elenae*, *B. karamea*, *B. hillaryi*, and *B. tensingi*, are all externally similar and can only be distinguished from each other by genitalic characters. They all have a strongly convex body, and the mesepimeral line and hind wings are

absent. The diversity of this group is centered mainly in the northwest Nelson part of the South Island and we refer to this group as the Nelson group.

- 1 Tibiae narrow at base (Fig. 109), thickened apically, metatibiae at apex 1.5 to almost 2× as wide as at base ..... 2
- Tibiae subcylindrical (Fig. 107), robust at base, metatibiae not or slightly thickened toward apex .... 7
- 2(1) Elytra with sutural striae distinct (Fig. 10), extending from apex up to anterior 1/4–1/5 of sutural length. Lateral parts of metaventrite very finely punctate. Antennomere 11 1.5× longer than antennomere 10 (Fig. 85) ..... (p. 30)... *actuosa* Broun
- Elytra with sutural striae very fine (Fig. 11–15), usually strongly shortened and present only at posterior, inclined portion of elytra. If sutural striae longer, not extending beyond mid-length of suture. Lateral parts of metaventrite often coarsely punctate. Antennomere 11 shorter than 1.5× length of antennomere 10 ..... 3
- 3(2) Punctuation on lateral portions of metaventrite as that on pronotum and elytra, very fine or obsolete. If metaventral punctuation slightly coarser than elytral punctuation, aedeagus as Fig. 37–39, 40–42 ..... 4
- Punctuation much coarser on lateral portions of metaventrite than on pronotum and elytra ..... 5
- 4(3) Mesepimeral line absent. Elytra usually completely lacking epipleural striae (Fig. 12) or with epipleural striae strongly shortened. Epipleura entirely or to large extent delimited by lateral striae. Metaventrite lacking microsculpture ..... (p. 32)... *epipleuralis* sp. n.
- Mesepimeral line present (Fig. 1). Elytra with distinct epipleural and lateral striae. Metaventrite with very fine microsculpture ..... (p. 29)... *abrupta* sp. n.
- 5(3) Mesepimeral line absent. Aedeagus with wide flagellum (Fig. 48, 51) ..... 6
- Mesepimeral line present. Aedeagus with narrow flagellum (Fig. 45) .... (p. 34)... *punctatissima* n. sp.
- 6(5) Elytra with sutural striae very short, present only in apical, inclined part of elytra (Fig. 14) ..... (p. 36)... *tekootii* sp. n.
- Elytra with sutural striae longer, extending to about mid-length of suture (Fig. 15) ..... (p. 35)... *sternalis* Broun
- 7(1) Mesepimeral line distinct (Fig. 1). Small species (1.20–1.30 mm), body relatively flat dorsally (Fig. 16), uniformly reddish brown. North Island ..... (p. 37)... *tenuis* sp. n.

- Mesepimeral line obsolete. Larger species (1.35–1.75 mm), body strongly convex dorsally (Fig. 14), reddish brown to black, sometimes bicoloured. Northern portion of the South Island ..... 8
- 8(7) Aedeagus with basal bulb about 2× as long as apical process of median lobe. Ventral contours of apical process distinctly convex (lateral view) (Fig. 58). Buller region ..... (p. 37)... *tensingi* sp. n.
- Aedeagus with apical process of median lobe slightly shorter than basal bulb (Fig. 61) ..... 9
- 9(8) Internal sac with long flagellum. Guide-sclerite weakly sclerotised and very narrow overlapped apically by flagellum (Fig. 64, 66). Buller, Nelson, and northern Westland regions ..... (p. 32)... *elenae* sp. n.
- Internal sac with flagellum short. Guide-sclerite robust, thick in apical part and strongly sclerotised (Fig. 56, 62, 66), or very short ..... 10
- 10(9) Membranes of internal sac with very fine scale-like structures (Fig. 67, 68). Guide-sclerite very short, not reaching up to mid-length of flagellum. Parameres distinctly sinuate and gradually narrowed apically. Known only from Karamea Bluff in northwest Nelson ..... (p. 34)... *karamea* sp. n.
- Membranes of internal sac lacking scale-like structures (Fig. 54–56, 60–63). Guide-sclerite long, ending distinctly at posterior mid-length of flagellum. Parameres not or weakly sinuate, equally wide in middle 1/3 ..... 11
- 11(10) Internal sac with guide-sclerite straight in middle part and hook-like at tip (Fig. 63), flagellum widest at middle. Buller ..... (p. 31)... *benolivia* sp. n.
- Internal sac with guide-sclerite arcuate and gradually narrowed apically, not hook-like at tip (Fig. 56). Known only from Oparara River gorge ..... (p. 33)... *hillaryi* sp. n.

### *Baeocera abrupta* new species

Fig. 11, 37–39; Map 1

**Diagnosis.** Body strongly convex dorsally. Antennomere 11 moderately elongate. Mesepimeral line present. Lateral portion of metaventrite impunctate. Elytron with sutural stria short, extending to apical 1/3; epipleural stria present. Tibia narrow at base. Aedeagus with narrow, elongate flagellum; basal bulb long in relation to apical process; membranes of internal sac with very fine scale-like structures; guide-sclerite absent. Gonocoxite elongate with apical stylus.

**Description.** Length 1.0–1.20 mm. Body strongly convex



dorsally and moderately convex ventrally, dark brown to black, apical part of elytra and entire abdomen usually lighter. Legs and antennae lighter than body, ochreous. Punctuation almost even, extremely fine on dorsal and ventral sides of body, pubescence of body short and recumbent, distinct. Prothorax lacking microsculpture. Abdomen with extremely fine microsculpture, elytra and metaventricle with usually distinct microsculpture. Eyes moderately large, length about 2/3 that of shortest interocular space. Antennae with antennomere 3 relatively short and thick, strongly narrowed basally; antennomere 4 slightly longer and narrower than antennomere 3; antennomere 5 slightly longer and barely thicker than antennomere 4; antennomere 6 short and relatively wide, about as long and wide as antennomere 3; antennomeres 7 and 8 each much larger than antennomere 6, slightly elongate, longer than antennomere 5; each about 1.5× as long as wide; antennomere 8 distinctly smaller than antennomere 7; antennomeres 9 and 10 relatively short and wide, slightly longer than wide, each about 2× as wide as antennomeres 8; antennomere 11 oval, slightly larger than antennomere 10. Lateral contours of pronotum and elytra almost continuously arcuate. Pronotum with basal angles obtuse, prominent, covering anterior part of metepisterna. Lateral pronotal margins arcuate in lateral view. Scutellum completely covered by pronotal lobe. Elytra weakly narrowed apically, with sutural striae very fine and very short, usually distinct in apical, inclined 1/4–1/3 of elytra. Epipleural striae very fine, parallel to margins in anterior 1/2–2/3, converging to margins posteriorly. Epipleura narrower than supra-epipleura. Mesepimeral line distinct, longer than interval to mesocoxae. Mesocoxal lines strongly arcuate, length of mesocoxal areas almost 1/2 that of shortest interval to metacoxae. Metepisterna wide, almost parallel-sided, with suture deep, slightly sinuate to straight. Hind wings fully developed, functional. Tibiae straight, tibiae thickened toward apex, metatibiae at apex about 1.5–1.7× as wide as near base.

**Male.** Protarsomeres 1–3 slightly enlarged, with tenent setae. Abdominal antennomere 6 with mesal lobe small, acute, triangular. Aedeagus (Fig. 37–39) with apical process tapering, much shorter than basal bulb and almost straight ventrally (lateral view). Internal sac with flagellum very long and evenly very slender, looped basally. Accessory lateral sclerite present. Flagellar guide-sclerite absent. Membranes of internal sac with very fine scale-like structures. Parameres weakly arcuate at dorsal and lateral views.

**Female.** Coxites narrow; styli apical, bearing long setae.

**Comments.** This is the smallest species of *Baeocera* in the New Zealand fauna and can be distinguished easily from all of the other species by its size, presence of a

mesepimeral line, and lack of punctures on the metaventricle. It has been collected rather infrequently in dead wood (Kuschel 1990, listed as genus 1 species 1).

**Distribution** (Map 1). North Island.

ND, AK, CL, WO, BP, GB, TO, WN / –.

**Fungal hosts.** Basidiomycetes: *Ganoderma* sp.

**Material examined.** Holotype and 68 paratypes — see Appendix 1 for collection details of specimens. **Holotype**, New Zealand, AK, Lynfield, Tropicana Drive, 11 Sep 1976, G. Kuschel, hollow *Metrosideros excelsa*, barcode NZAC04009017 (NZAC).

**Etymology.** Named for its very distinctive characters.

### ***Baeocera actiosa* (Broun, 1881), new placement**

Fig. 10, 34–36, 85, 86, 96, 103, 105, 109; Map 2

*Scaphisoma actiosum* Broun, 1881: 664.

*Scaphoxium actiosum* (Broun). Placement by Klimaszewski *et al.*, 1996.

**Diagnosis.** Body strongly convex dorsally. Antennomere 11 greatly elongate. Mesepimeral line absent (or very weakly impressed). Lateral portion of metaventricle finely punctate. Elytron with sutural stria elongate, extending to apical 1/2; epipleural stria present. Tibia narrow at base. Aedeagus with narrow flagellum, flagellum long; basal bulb short in relation to apical process; membranes of internal sac without very fine scale-like structures; guide-sclerite present. Gonocoxite short and hook-like with subapical stylus.

**Description.** Length 1.20–1.85 mm. Body strongly convex dorsally and ventrally, uniformly reddish-brown to black, or thorax darker than elytra and abdomen. Apical abdominal segments ochreous. Appendages usually distinctly lighter than body. Punctuation almost even, very fine on dorsal and ventral sides of body, pubescence of body short and recumbent, distinct. Thorax and elytra lacking microsculpture. Eyes large, length about as long as shortest interocular space. Antennae with antennomeres 3–6 slender, subcylindrical, similar in size; antennomere 5 slightly longer than adjoining segments; antennomeres 7 and 8 similar, elongate, much wider than antennomere 6, antennomere 8 only slightly smaller than antennomere 7, much narrower than antennomere 9, antennomeres 9 and 10 similar, widened apically; antennomere 11 about 1.5× as long as antennomere 10, usually partly parallel-sided. Lateral contours of pronotum and elytra discontinuous. Pronotum with basal angles obtuse, covering anterior part of metepisterna. Lateral pronotal margins arcuate in lateral view. Tip of scutellum hidden. Elytra weakly narrowed apically, with sutural striae deep, distinct, extending from apex up to anterior 1/4–1/5 of sutural length. Epipleural

striae entire, distinct. Epipleura narrow, narrower than supra-epipleura, gradually narrowed apically. Mesepimeral line obsolete or weakly indicated by a line. Mesocoxal lines arcuate or sub-angulate, length of mesocoxal area 1/4–1/3 of shortest interval to metacoxae. Metepisterna narrow, with suture usually distinct, often deep, usually curved apically. Hind wings well developed, obviously functional. Tibiae straight or barely curved, tibiae thickened towards apex, metatibiae at apex about 1.5× as wide as at near base.

**Male.** Protarsomeres 1–3 distinctly widened, with tenent setae. Abdominal ventrite 6 emarginate, laterally sub-triangular, medio-apical lobe. Aedeagus (Fig. 34–36) with apical process blunt, much shorter than basal bulb, sinuate ventrally (lateral view). Internal sac very slender in basal and apical portion, widened in middle, looped. Accessory lateral sclerite absent. Flagellar guide-sclerite and accessory lateral sclerite absent. Membranes of internal sac with distinct spine-like structures. Parameres arcuate at dorsal view, sinuate at lateral view.

**Female.** Coxites wide, gradually narrowed apically, with styli subapical, bearing short setae.

**Comments.** *Baeocera actiosa* is quite unlike other members of the genus, based on several unique features, including its rather acute posterior pronotal angles, elongate antennomere 11 and the unusual gonocoxites. The hook-like gonocoxite is also present in the North American species *B. picea* Casey and *B. nana* Casey, a character not discussed by Löbl & Stephan (1993), and have been collected from slime moulds (e.g., Lawrence & Newton 1980). The placement of this species into *Scaphoxium* by Klimaszewski *et al.* (1996) was based on similarities of *B. actiosa* to members of *Scaphoxium* distributed in Australasia. However, *B. actiosa* and other members of the genus differ from *Scaphoxium* by a number of characters, especially the explanate hypomeron, and including the following: subapical serrations of the mandible absent, galeal brush paniculate; hypopharynx setose, apex of submentum invaginate, acute posterior pronotal angles, anterior pronotal bead present, form of mesosternal lines (connecting with coxal cavity), primary setae of metaventrite located in the disc and those of the abdomen present, profemoral ctenidium present, presence of 2 well developed tibial spines (reduced to 1 in *Scaphoxium*), and empodium unisetose.

This is one of the most commonly collected species of *Baeocera* and is captured frequently in flight intercept traps. It may also be taken commonly from its host — myxomycete fungi — and in dead wood (Kuschel 1990).

Broun (1881) mentioned 2 specimens collected from around Whangarei Harbour (Parua) but we only located a single specimen, which is designated as the lectotype.

**Distribution** (Map 2). North Island.

ND, AK, CL, WO, BP, GB, TK, TO, HB, RI, WN / –

**Fungal hosts** (larval records indicated by an asterisk\*). Myxomycetes: *Arcyria incarnata*, *Ceratiomyxa fructiculosa*, *Fuligo?septica*, *Fuligo* sp., *Hemitrichia serpula*, *Lamproderma*, *Lycogala* + *Ceratiomyxa*, *Lycogala epidendrum*, *Stemonitis* sp., *Stemonitis fusca*\*, *Trichia favoginea*\*, *Trichia floriformis*, undetermined plasmodium. Ascomycetes: *Hypoxylon*. Basidiomycetes: *Amanita muscaria* (infected with *Hyphomyces*), *Auricularia polytricha*, *Bjerkandra adusta*, *Favolaschia pustulosus*, *Ganoderma applanatum*, *Ganoderma* sp., *Scizopora paradoxa*, *Stereum*, undetermined corticioid.

**Material examined.** Lectotype and 436 non-type specimens — see Appendix 1 for collection details of specimens. **Lectotype** information: SYN-TYPE [round, blue]/Parua (hand-written)/1159/New Zealand Broun Coll. Brit. Mus. 1922-482/Scaphisoma actiosum [handwritten]/Scaphisoma actiosum Broun R.J.W. Aldridge det. 1975 SYNTYPE/Scaphisoma actiosum Broun, LECTOTYPE, desig. by I. Löbl & R. Leschen [red label] (here designated, so as to assure correct and consistent application of the name in the future) (BMNH).

### *Baeocera benolivia* new species

Fig. 60–63; Map 3

**Diagnosis.** Body strongly convex dorsally. Antennomere 11 moderately elongate. Mesepimeral line absent. Lateral portion of metaventrite coarsely punctate. Elytron with sutural stria short, extending to apical 1/5; epipleural stria present. Tibia robust at base. Aedeagus with wide, short flagellum; basal bulb long compared to apical process; membranes of internal sac without very fine scale-like structures; guide-sclerite present, robust with an apical hook. Gonocoxite elongate with apical stylus.

**Description.** Length 1.45–1.60 mm. Body strongly convex dorsally, moderately convex ventrally, almost uniformly reddish brown or pronotum slightly lighter than elytra, apex of abdomen distinctly lighter. Femora and tibiae coloured similar to body, tarsi and antennae lighter. Punctuation very fine on pronotum and abdomen, somewhat less fine on elytra, more or less coarse on lateral parts of metaventrite. Pubescence of body very short and recumbent. Thorax, elytra, and abdomen lacking microsculpture, or elytra with barely visible microsculpture. Eyes moderately small, length about 1/2 shortest interocular space. Antennae with antennomere 3 narrowed basally, antennomere 4 subcylindrical, about as long as antennomere 3; antennomeres 5 and 6 barely wider than antennomere 4; antennomere 5 distinctly longer than antennomere 4, antennomere 6 about as long as antennomere 4; antennomere 7 about as long as long and slightly wider than antennomere

6, elongate; antennomere 8 about as wide as antennomere 7 and as long as antennomere 6, distinctly longer than wide; antennomeres 9 and 10 elongate, each about twice as wide as antennomere 8; antennomere 11 oval, distinctly longer than antennomere 10. Lateral contours of pronotum and elytra almost continuously arcuate. Pronotum with basal angles obtuse, prominent, touching metepisterna or overlapping their inner anterior angle. Lateral pronotal margins arcuate in lateral view. Scutellum completely covered by pronotal lobe. Elytra weakly narrowed apically, with sutural striae strongly shortened, visible only near elytral apices. Epipleural striae deep, converging to margins posteriorly. Supra-epipleura wider than epipleura, gradually narrowed apically. Mesepimeral line obsolete. Mesocoxal lines strongly arcuate, length of mesocoxal areas slightly smaller than the shortest metacoxal interval. Metepisterna narrow, parallel-sided, with suture deep, straight. Hind wings strongly reduced, present as minute rudiments. Tibiae straight, metatibiae at apex slightly wider than near base.

**Male.** Protarsomeres 1–3 slightly enlarged, with tenent setae. Abdominal antennomere 6 with small, triangular, mesal lobe. Aedeagus (Fig. 60–63) with apical process distinctly shorter than basal bulb, tapering, almost straight ventrally (lateral view), curved at tip. Internal sac with flagellum wide and short, widest at middle or posterior middle, distinctly striate. Flagellar guide-sclerite robust, hook-like at tip. Accessory lateral sclerite present. Membranes of internal sac lacking spine-like or scale-like structures. Parameres weakly sinuate at dorsal view, weakly arcuate at lateral view.

**Comments.** This species can be distinguished from other members of the Nelson group by the features present in the aedeagus.

**Distribution** (Map 3). Northern area of the West Coast of the South Island.

– / BR.

**Material examined.** Holotype and 6 paratypes — see Appendix 1 for collection details of specimens. **Holotype** information: New Zealand, BR, Caplestone, 8 Nov 1971, J. C. Watt, moss 71/137 Beech Forest Utilization Project, barcode NZAC04012349 (NZAC).

**Etymology.** Patronymic for Ben Smart and Olivia Hope, in memory of their tragic death in the Marlborough Sounds in January 1998.

### ***Baeocera elenae* new species**

Fig. 64–66, 107; Map 4

**Diagnosis.** Body strongly convex dorsally. Antennomere 11 moderately elongate. Mesepimeral line absent. Lateral portion of metaventricle coarsely punctate. Elytron with

sutural stria short, extending to apical 1/5; epipleural stria present. Tibia robust at base. Aedeagus with narrow flagellum, flagellum elongate; basal bulb long compared to apical process; membranes of internal sac without very fine scale-like structures; guide-sclerite present, robust with proximal end folded. Gonocoxite elongate with apical stylus.

**Description.** Length 1.35–1.60 mm. With the characters of *B. benolivia*. Elytra usually with distinct microsculpture, punctation fine, about as fine as that present on the pronotum. Antennae with antennomeres 5 and 6 wider, antennomere 6 usually distinctly shorter than antennomere 3; antennomere 8 very short, only slightly longer than wide. Epipleural striae variable, often fine and shortened apically. Lateral portions of metaventricle with a few distinct, relatively coarse punctures, or punctation very fine to obsolete. Mesocoxal area shorter than or about as long as shortest metacoxae interval.

**Male.** Aedeagus (Fig. 64–66) with apical process much shorter than basal bulb, tapering, sinuate ventrally (lateral view). Internal sac with flagellum long, evenly narrow, distinctly striate, sinuate. Flagellar guide-sclerite wide at proximal end, strongly narrowed distally, its section overlapped by flagellum very narrow, at proximal end folded or strengthened. Accessory lateral sclerite present. Membranes of internal sac lacking obvious spines or scale-like structures. Parameres weakly curved at dorsal view, distinctly sinuate at lateral view.

**Comments.** This is the most widespread species of the Nelson group and can be distinguished from other members by the features present in the aedeagus; though specimens from Punakaiki have weak or absent punctation which is not characteristic of this group in general.

**Distribution** (Map 4). Northern South Island.

– / NN, BR, WD, KA, NC.

**Fungus hosts.** Myxomycetes: undetermined species.

**Material examined.** Holotype and 104 paratypes — see Appendix 1 for collection details of specimens. **Holotype** information: New Zealand, BR, Nelson Lakes National Park, L. Rotoiti, 19 Feb 1965, A. K. Walker, moss 65/242, barcode NZAC04012274 (NZAC).

**Etymology.** Named after Elena Hilario, partner and best friend of the junior author.

### ***Baeocera epipleuralis* new species**

Fig. 12, 40–42; Map 5

**Diagnosis.** Body strongly convex dorsally. Antennomere 11 moderately elongate. Mesepimeral line usually absent. Lateral portion of metaventricle usually finely punctate.

Elytron with sutural stria short, extending to apical 1/4; epipleural stria present or absent. Tibia narrow at base. Aedeagus with wide, elongate flagellum; basal bulb equal to apical process; membranes of internal sac without very fine scale-like structures; guide-sclerite present. Gonocoxite elongate with apical stylus.

**Description.** Length 1.20–1.45 mm. Body strongly convex dorsally and ventrally, reddish brown to black, pronotum sometimes bicoloured, anteriorly lighter than at base. Femora and tibiae similar to body or slightly lighter, tarsi and antennae distinctly lighter than body. Apical abdominal segments brown to light ochreous. Punctuation almost even, very fine on dorsal and ventral sides of body, lateral parts of metaventrite with punctures sometimes slightly coarser than those on dorsal side of body and abdomen. Pubescence of body short and recumbent, distinct. Thorax, elytra, and abdomen microsculptured. Eyes moderately large, length about 2/3 that of shortest interocular space. Antennae with antennomeres 3 and 4 sub-cylindrical, antennomere 3 slightly longer than antennomere 4; antennomeres 5 and 6 moderately thickened apically, distinctly wider than antennomere 4; antennomere 5 about as long as antennomere 3; antennomere 6 slightly shorter than antennomere 4; antennomeres 7 and 8 elongate, distinctly wider than antennomere 6, antennomere 7 about as long as antennomere 4; antennomere 8 as long as antennomere 6; antennomeres 9 and 10 relatively short and wide, slightly longer than wide, each about twice as wide as antennomere 8; antennomere 11 oval, slightly larger than antennomere 10. Lateral contours of pronotum and elytra separately arcuate. Pronotum with basal angles obtuse, prominent, covering anterior part of metepisterna. Lateral pronotal margins arcuate in lateral view. Scutellum completely covered by pronotal lobe. Elytra weakly narrowed apically, with sutural striae very fine and very short, usually distinct in apical 1/4 of elytra. Epipleural striae usually completely obsolete, if present shortened and very fine. Epipleural striae, if present, narrow, about as narrow as supra-epipleural area. Mesepimeral lines completely obsolete. Mesocoxal lines arcuate, length of mesocoxal areas about 2/3 of shortest interval to metacoxae. Metepisterna usually wide, with suture straight, rarely deep, usually very fine, sometimes interrupted or indicated by puncture row. Hind wings strongly reduced, present as very narrow and short rudiments. Tibiae straight, metatibiae at apex about 1.7× as wide as at near base.

**Male.** Protarsomeres 1–3 slightly widened, with tenent setae. Abdominal ventrite 6 with medio-apical lobe short, triangular. Aedeagus (Fig. 40–42) with apical process tapering, longer than basal bulb and almost evenly arcuate ventral contours (lateral view). Internal sac with flagellum long, evenly moderately narrow toward apex, distinctly

striate. Flagellar guide-sclerite narrow, with basal portion curved and relatively long, apical part partly overlapped by flagellum and sinuate. Accessory lateral sclerite present. Membranes of internal sac with very fine spine-like structures. Parameres sinuate at dorsal and lateral views (narrower in Martinborough specimens).

**Female.** Coxites with styli apical, bearing long setae.

**Comments.** *Baeocera epipleuralis* usually lacks epipleural striae; but specimens from the North Island have these striae more or less distinct, the pronotum often bicoloured, and also the metepisternal suture strongly impressed. We consider these North Island populations to be members of the same species as confirmed by genitalic characters.

**Distribution** (Map 5). North Island and northern South Island.

CL, BP, GB, TK, TO, HB, RI, WN, WA / SD, MB, NN.

**Material examined.** Holotype and 214 paratypes — see Appendix 1 for collection details of specimens. **Holotype** information: New Zealand, NN, 15 Mile Creek, 30 km SW Collingwood, 23 May 1982, S. & J. Peck, barcode NZAC04012046 (NZAC).

**Etymology.** Named for the lack of the epipleural line in some of the specimens.

### *Baeocera hillaryi* new species

Fig. 54–56, Map 6

**Diagnosis.** Body strongly convex dorsally. Antennomere 11 moderately elongate. Mesepimeral line absent. Lateral portion of metaventrite coarsely punctate. Elytron with sutural stria short, extending to apical 1/5; epipleural stria present. Tibia robust at base. Aedeagus with wide flagellum, flagellum short; basal bulb long compared to apical process; membranes of internal sac without very fine scale-like structures; guide-sclerite present (arcuate and narrow). Gonocoxite elongate with apical stylus.

**Description.** Length 1.50–1.60 mm. Body strongly convex dorsally, moderately convex ventrally, almost uniformly reddish brown, apex of abdomen lighter. Femora and tibiae almost as body, tarsi and antennae light. Punctuation very fine on pronotum and abdomen, less fine on elytra, more or less coarse on lateral parts of metaventrite. Pubescence of body very short and recumbent. Thorax, elytra, and abdomen lacking microsculpture. Eyes small, length about 1/2 shortest interocular space. Antennae with antennomere 3 narrowed basally, antennomere 4 subcylindrical, about as long as antennomere 3; antennomeres 5 and 6 barely wider than antennomere 4; antennomere 5 distinctly longer than



antennomere 4, antennomere 6 about as long as antennomere 4; antennomere 7 about as long as and slightly wider than antennomere 6, elongate; antennomere 8 about as wide as antennomere 7 and as long as antennomere 6, distinctly longer than wide; antennomeres 9 and 10 elongate, each about twice as wide as antennomere 8; antennomere 11 oval, distinctly longer than antennomere 10. Lateral contours of pronotum and elytra almost continuously arcuate. Pronotum with basal angles obtuse, prominent, touching metepisterna. Lateral pronotal margins arcuate in lateral view. Scutellum completely covered by pronotal lobe. Elytra weakly narrowed apically, with sutural striae strongly shortened, visible only near elytral apices. Epipleural striae deep, converging to margins posteriorly. Supra-epipleura wider than epipleura, gradually narrowed apically. Mesepimeral line obsolete. Mesocoxal lines strongly arcuate, length of mesocoxal area slightly less than that of the shortest metacoxal interval. Metepisterna narrow, parallel-sided, with suture deep, straight. Hind wings strongly reduced, present as minute rudiments. Tibiae straight, metatibiae at apex slightly wider than near base.

**Male.** Protarsomeres 1–3 slightly enlarged, with tenent setae. Abdominal antennomere 6 with mesal lobe small, triangular. Aedeagus (Fig. 54–56) with apical process much shorter than basal bulb, tapering apically, weakly arcuate ventrally (lateral view), not curved at tip. Internal sac with flagellum moderately long, narrowed apically, distinctly striate. Flagellar guide-sclerite large, arcuate, widest in middle, gradually narrowed toward tip. Accessory lateral sclerite present. Membranes of internal sac lacking spine or scale-like structures.

**Female.** Coxites narrow with styli apical, bearing long setae.

**Comments.** This species is known only from the Oparara River area. This species can be distinguished from the other members of the Nelson group by genitalic characters. The association of the female specimens with males was based on the sharing of locality data.

**Distribution** (Map 6). Northern West Coast of the South Island.

– / NN.

**Material examined.** Holotype and 2 paratypes — see Appendix 1 for collection details of specimens. **Holotype** information: male, New Zealand NN, Oparara R, Karamea, 27 Apr 1963, J. I. Townsend, litter 63/14, barcode NZAC04011959 (NZAC).

**Etymology.** This species is patronymic for Sir Edmund Hillary who was one of the first explorers to have made it successfully to the summit of Mount Everest in 1953.

### *Baeocera karamea* new species

Fig. 67, 68, Map 7

**Diagnosis.** Body strongly convex dorsally. Antennomere 11 moderately elongate. Mesepimeral line absent. Lateral portion of metaventrite coarsely punctate. Elytron with sutural stria short, visible at apical 1/4; epipleural stria present. Tibia robust at base. Aedeagus with wide, long flagellum; basal bulb relatively long compared with apical process; membranes of internal sac with very fine scale-like structures; guide-sclerite present. Gonocoxite elongate with apical stylus.

**Description.** Length 1.50–1.55 mm. In external characters very similar to *B. hillaryi* but with elytral punctation as fine as that of pronotal disc and with microsculptured pronotum. Mesepimeral line distinct, except near hypomeral edge. Aedeagus as in Fig. 67, 68, internal sac with guide-sclerite arcuate and gradually narrowed apically, not hook-like at tip.

**Comments.** *Baeocera karamea* is known only from Karamea Bluff where there are perhaps other endemic species of beetles, including an undescribed genus and species of flightless Leiodidae.

**Distribution** (Map 7). Northern West Coast of the South Island:

– / NN.

**Material examined.** Holotype and 3 paratypes — see Appendix 1 for collection details of specimens. **Holotype** information: male, New Zealand, NN, Karamea Bluff, 41°31'S, 172°01'E, 9 Feb 1999, R. A. B. Leschen, R. J. B. Hoare, berlesate, RL 275, barcode NZAC04011999 (NZAC).

**Etymology.** The name refers to the locality where this species was collected.

### *Baeocera punctatissima* new species

Fig. 13, 43–45, Map 8

**Diagnosis.** Body strongly convex dorsally. Antennomere 11 moderately elongate. Mesepimeral line present. Lateral portion of metaventrite coarsely punctate. Elytron with sutural stria short, extending to apical 1/3; epipleural stria present. Tibia narrow at base. Aedeagus with narrow, elongate flagellum; basal bulb longer in length than apical process; membranes of internal sac without very fine scale-like structures; guide-sclerite present (reduced). Gonocoxite elongate with apical stylus.

**Description.** Length 1.25–1.65 mm. Body strongly convex dorsally and ventrally, usually uniformly reddish brown, to black, sometimes pale yellow-brown. Femora

and tibiae slightly lighter than body, apical abdominal segments and antennae distinctly lighter than body. Punctuation extremely fine on pronotum, centre of metaventrite, and on abdominal ventrites, obsolete on elytra, coarse on lateral parts of metaventrite. Pubescence of body short and recumbent, usually barely visible on pronotum and elytra. Pronotum, elytra, and abdomen microsculptured, elytral microsculpture usually distinct, pronotal microsculpture barely visible. Eyes moderately small, length smaller than that of shortest interocular space. Antennae with antennomeres 3 and 4 subcylindrical; antennomere 3 longer than antennomere 4; antennomeres 5 and 6 each slightly wider than antennomere 4; antennomere 5 about as long as antennomere 3; antennomere 6 shorter, about as long as antennomere 4; antennomeres 7 to 8 elongate, each distinctly wider than antennomere 6, antennomere 7 about as long as antennomere 5, antennomere 8 as long as antennomere 6; antennomeres 9 and 10 distinctly longer than wide, each about twice as wide as antennomere 8; antennomere 11 oval, longer than antennomere 10. Lateral contours of pronotum and elytra separately arcuate. Pronotum with basal angles obtuse, prominent, covering anterior part of metepisterna. Lateral pronotal margins arcuate in lateral view. Scutellum completely covered by pronotal lobe. Elytra moderately narrowed apically, with sutural striae very fine and shallow, usually present in apical 1/3 of sutural length, or extending up to sutural mid-length. Epipleural striae distinct. Epipleura narrower than supra-epipleura, gradually narrowed posteriorly. Mesepimeral lines distinct, about as long as interval to mesocoxae. Mesocoxal lines arcuate, mesocoxal areas large, about as long as shortest intervals to metacoxae. Metepisterna moderately wide, with suture usually deeply impressed and punctate. Hind wings absent. Tibiae straight, metatibiae at apex about 1.5× as wide as at near base.

**Male.** Protarsomeres 1–3 slightly widened, with tenent setae. Abdominal ventrite 6 with triangular medio-apical lobe. Aedeagus (Fig. 42–45) with apical process slightly shorter than basal bulb, tapering, evenly arcuate ventrally, tip not curved. Internal sac with flagellum long, relatively narrow, sinuate, with striate section limited to apical area and not clearly visible. Flagellar guide-sclerite weakly developed, almost indistinct, accessory lateral sclerite absent. Membranes of internal sac lacking spine- or scale-like structures. Parameres distinctly sinuate at dorsal view, almost straight at lateral view.

**Female.** Coxites narrow with styli apical, bearing long setae.

**Comments.** This species is very similar to *B. sternalis*, with which it shares a sympatric distribution, and externally differs by the presence of a mesepimeral line.

**Distribution** (Map 8). Mainly eastern South Island, particularly Canterbury.

– / SD, BR, KA, NC, MC, DN.

**Material examined.** Holotype and 136 paratypes — see Appendix 1 for collection details of specimens. **Holotype** information: New Zealand, MC, Mt Somers, Petrifying Creek, 610 m, 2 Feb 1976, G. W. Ramsay, litter 76/37, barcode NZAC04011980 (NZAC).

**Etymology.** Named for the distinctive punctures present on the lateral margin of the metaventrite.

### *Baeocera sternalis* Broun, 1914

Fig. 15, 49–51, Map 9

*Baeocera sternalis* Broun, 1914: 173

**Diagnosis.** Body strongly convex dorsally. Antennomere 11 moderately elongate. Mesepimeral line absent. Lateral portion of metaventrite coarsely punctate. Elytron with sutural stria elongate, present in apical 1/2 or 1/3; epipleural stria present. Tibia narrow at base. Aedeagus with wide, elongate flagellum; length of basal bulb about equal to apical process; membranes of internal sac without very fine scale-like structures; guide-sclerite present. Gonocoxite elongate with apical stylus.

**Description.** Length 1.25–1.35 mm. Body strongly convex dorsally and ventrally, uniformly light reddish brown to very dark, almost black. Apical abdominal segments, femora, and tibiae slightly lighter than body, tarsi and antennae much lighter than body. Punctuation very fine to obsolete on dorsal side of body and on abdominal ventrites, distinct on middle part of metaventrite, coarse and dense on lateral sides of metaventrite. Pubescence of body short and recumbent, distinct on pronotum and on elytra. Thorax and elytra lacking microsculpture, abdomen with extremely fine microsculpture. Eyes moderately small, length about 1/2 shortest interocular space. Antennae as in *B. tekootii*. Lateral contours of pronotum and elytra continuously arcuate. Pronotum with basal angles obtuse, prominent, barely touching anterior part of metepisterna. Lateral pronotal margins arcuate in lateral view. Scutellum completely covered by pronotal lobe. Elytra moderately narrowed apically, with sutural striae fine and shallow, extending from apices about up to sutural mid-length. Epipleural striae distinct. Epipleura narrower than supra-epipleura, gradually narrowed posteriorly. Mesepimeral lines obsolete. Mesocoxal lines arcuate, mesocoxal areas small, barely as long as 1/2 shortest intervals to metacoxae. Metepisterna moderately wide, with suture impressed, straight and punctate. Hind wings completely reduced. Tibiae very weakly curved, metatibiae at apex about 1.5× as wide as at base.

**Male.** Protarsomeres 1–3 slightly widened, with tenent setae. Abdominal ventrite 6 with medio-apical lobe small, triangular. Aedeagus (Fig. 49–51) with apical process moderately shorter than basal bulb, tapering apically, evenly arcuate ventrally (lateral view). Internal sac with flagellum moderately long, widened apically, distinctly striate. Flagellar guide-sclerite moderately thick and annular at base, bent at middle and slender in overlapped apical half. Accessory lateral sclerite present. Membranes of internal sac lacking spine- or scale-like structures. Parameres weakly curved in apical part at dorsal view, weakly sinuate at lateral view.

**Female.** Coxites narrow with styli apical, bearing long setae.

**Comments.** This species is very closely related to *B. tekootii*, though this species has the flagellum of the internal sac of the aedeagus shorter and more curved and the sutural stria is longer. It is also very similar in appearance to the more commonly collected species *B. punctatissima*, but differs from this species by the absence of a mesepimeral line.

Broun (1914) described this species based on specimens from Pudding Hill, McLennans Bush, and from a series collected from leaf mould collected in April and May 1912 by Mr. T. Hall. We located three specimens labelled McClennands' (a misspelling of McLennans Bush in Broun's original paper), two specimens from Pudding Hill, and one specimen collected in 1912 from mould (two specimens labelled "3539," the reference number for *B. sternalis* in Broun (1914) are probably not syntypes). Pudding Hill and McLennans Bush are located to the west of Methven (MC) at the base of Mt Hutt (Watt 1977). The syntype series of 6 specimens represents 2 separate species. The specimens in the BMNH are designated as lectotype and paralectotype for *B. sternalis* (see below). The syntype specimens present in NZAC belong to a separate species, and are removed from the type series of *B. sternalis* and described under *B. punctatissima*.

**Distribution** (Map 9). Marlborough Sounds and eastern South Island.

– / SD, KA, MC.

**Material examined.** Lectotype, paralectotype, and 18 non-type specimens — see Appendix 1 for collection details of specimens. **Lectotype** information: SYN-TYPE [round, blue] /3539/ McLennans [=McLennans Bush] 23.4.1912 [handwritten]/*Baocera sternalis* Broun [handwritten]/New Zealand Broun Coll. Brit. Mus. 1922-482/*Baocera sternalis* Broun R.J.W. Aldridge det. 1975 SYNTYPE /*Baocera sternalis* Broun, LECTOTYPE, desig. by I. Löbl & R. Leschen [red label] (here designated, so as to assure correct and consistent application of the name in

the future) (BMNH). **Paralectotype:** Mt. C. [=McLennans Bush] Mould 23.4.12/Broun Coll./ *Baocera sternalis* Broun, PARALECTOTYPE, desig. by I. Löbl & R. Leschen [blue label] (BMNH).

### *Baocera tekootii* new species

Fig. 14, 46–48; Map 10

**Diagnosis.** Body strongly convex dorsally. Antennomere 11 moderately elongate. Mesepimeral line absent. Lateral portion of metaventrite coarsely punctate. Elytron with sutural stria short, extending to apical 1/4; epipleural stria present. Tibia narrow at base. Aedeagus with wide flagellum, flagellum elongate; length of basal bulb longer than apical process; membranes of internal sac without very fine scale-like structures; guide-sclerite present. Gonocoxite elongate with apical stylus.

**Description.** Length 1.25–1.55 mm. Body strongly convex dorsally and ventrally, usually uniformly reddish brown to black, elytra sometimes lighter or darker than pronotum, or partly darkened. Legs slightly lighter than body, antennae distinctly lighter than body. Apical abdominal segments brown. Punctuation extremely fine to obsolete on dorsal side of body and on abdominal ventrites, distinct on middle part of metaventrite, usually coarse on lateral sides of metaventrite. Pubescence of body short and recumbent, distinct on pronotum, barely visible on elytra. Pronotum, elytra, and abdomen microsculptured, pronotal microsculpture sometimes obsolete, elytral microsculpture usually very fine, rarely conspicuous. Eyes moderately small, length smaller about 1/2 that of shortest interocular space. Antennae with antennomere 3 narrowed basally; antennomere 4 subcylindrical, shorter than antennomere 3; antennomeres 5 and 6 each slightly wider than antennomere 4; antennomere 5 about as long as antennomere 3; antennomere 6 shorter, about as long as antennomere 4; antennomeres 7 and 8 each distinctly wider than antennomere 6, antennomere 7 about as long as antennomere 5, antennomere 8 slightly longer than wide, as long as antennomere 6; antennomeres 9 and 10 distinctly longer than wide, each about twice as wide as antennomere 8; antennomere 11 oval, longer than antennomere 10. Lateral contours of pronotum and elytra continuously arcuate. Pronotum with basal angles obtuse, prominent, covering anterior part of metepisterna. Lateral pronotal margins arcuate in lateral view. Scutellum completely covered by pronotal lobe. Elytra moderately narrowed apically, with sutural striae very fine and shallow, usually present in apical 1/4 of sutural length, rarely extending somewhat more anteriorly. Epipleural striae distinct. Epipleura narrower than supra-epipleura, almost parallel up to line of apex of abdominal ventrite 1, narrowed posteriorly.



Mesepimeral lines completely obsolete. Mesocoxal lines arcuate, mesocoxal areas large, about as long as 1/2–3/4 of shortest intervals to metacoxae. Metepisterna moderately wide, with suture sometimes impressed, usually indicated by straight puncture row. Hind wings reduced to very narrow, short rudiments. Tibiae straight, metatibiae at apex about 1.7–2.0× as wide as at near base.

**Male.** Protarsomeres 1–3 slightly widened, with tenent setae. Abdominal ventrite 6 with medio-apical lobe small, blunt-triangular. Aedeagus (Fig. 46–48) with apical process distinctly shorter than basal bulb, tapering, oblique to weakly arcuate ventrally (lateral view), not curved at tip. Internal sac with flagellum flat, long, evenly wide or slightly widened toward apex, distinctly striate. Flagella guide-sclerite bent, with base short, moderately robust and usually circular, apical part longer and slender, blunt at apex. Accessory lateral sclerite apparently absent. Membranes of internal sac lacking spine- or scale-like structures. Parameres sinuate in dorsal and lateral views.

**Female.** Coxites narrow with styli apical, bearing long setae.

**Comments.** Some specimens from Northland (e.g., Puketi State Forest, Waipoua State Forest, and Whangarei) have conspicuously strong elytral microsculpture, but the aedeagal and other characters demonstrate that these populations belong to this species. This species is relatively abundant and has been collected mainly in leaf litter (Kuschel 1990, listed as *Scaphisoma sternale*).

**Distribution** (Map 10). North Island and northern South Island.

ND, AK, CL, WO, BP, GB, TK, TO, HB, RI, WN / SD, KA.

**Material examined.** Holotype and 232 paratypes — see Appendix 1 for collection details of specimens. **Holotype** information: New Zealand, GB, Taikawakawa, 21 Sep 1992, G. Hall & R. Henderson, sifted litter 92/58, barcode NZAC04011917 (NZAC).

**Etymology.** Patronymic for Te Kooti, the famous Maori leader and warrior who was exiled to Chatham Islands, but later was pardoned.

### *Baeocera tensingi* new species

Fig. 57–59; Map 11

**Diagnosis.** Body strongly convex dorsally. Antennomere 11 moderately elongate. Mesepimeral line absent. Lateral portion of metaventrite coarsely punctate. Elytron with sutural stria short, extending to apical 1/5; epipleural stria present. Tibia robust at base. Aedeagus with wide, short flagellum; basal bulb long compared to apical process; membranes of internal sac with very fine scale-like structures;

guide-sclerite present, wide and robust. Gonocoxite elongate with apical stylus.

**Description.** Length 1.65–1.75 mm. In external characters very similar to *B. hillaryi*, but larger, with elytral punctuation extremely fine, as that on pronotum, and eyes barely as long as 1/2 shortest interocular space. Aedeagus (Fig. 57–59) with apical process much shorter than basal bulb, tapering, weakly sinuate ventrally (lateral view), slightly curved at tip. Internal sac with flagellum relatively short, widened apically, distinctly striate. Flagellar guide-sclerite conspicuously strongly sclerotised, with large basal portion, joined to oblique rod, not or irregularly narrowed at tip. Accessory lateral sclerite present. Membranes of internal sac with fine scale-like structures. Parameres weakly sinuate at dorsal view, curved in basal 1/2 and almost straight in apical 1/2 at lateral view.

**Comments.** This species can be distinguished from other members of the Nelson group by the features present in the aedeagus.

**Distribution** (see Map 11). Known only from the Buller area of the West Coast, South Island.

– / BR.

**Material examined.** Holotype and 2 paratypes — see Appendix 1 for collection details of specimens. **Holotype** information: male, New Zealand, BR, Tawhai SF, Big Red Rd 3 km S of Reefton, 28 Jan 1972, J. McBurney, litter 72/76, Beech Forest Utilization Project, barcode NZAC04011680 (NZAC).

**Etymology.** Patronymic for Sherpa Tensing Norgay who assisted Sir Edmund Hillary to the top of Mt. Everest in 1953.

### *Baeocera tenuis* new species

Fig. 16, 52, 53, Map 12

**Diagnosis.** Body moderately convex dorsally. Antennomere 11 moderately elongate. Mesepimeral line present. Lateral portion of metaventrite coarsely to finely punctate. Elytron with sutural stria short, extending to apical 1/3; epipleural stria present. Tibia robust at base. Aedeagus with wide flagellum, flagellum elongate; basal bulb slightly longer than apical process; membranes of internal sac without very fine scale-like structures; guide-sclerite present. Gonocoxite elongate with apical stylus.

**Description.** Length 1.20–1.30 mm. Body moderately convex dorsally, relatively flat ventrally, almost uniformly reddish brown, apical part of elytra and entire abdomen usually lighter. Legs and antennae lighter than body, ochreous to yellowish. Punctuation extremely fine but distinct on pronotum, almost obsolete on elytra and abdomen, fine to

moderately coarse on lateral parts of metaventricle. Metaventral punctation very sparse. Pubescence of body very short and recumbent, often indistinct on elytra. Prothorax and pterothorax lacking microsculpture. Elytra and abdomen with usually distinct microsculpture. Eyes moderately small, length about 1/3 that of the shortest interocular space. Antennae with antennomere 3 narrowed basally, antennomere 4 subcylindrical, about as long as antennomere 3; antennomeres 5 and 6 widened, distinctly wider than antennomere 4; antennomere 5 longer than 6, about as long as antennomere 4; antennomere 7 about as long as and wider than antennomere 6, elongate; antennomere 8 about as wide as and shorter than antennomere 7, barely longer than wide; antennomeres 9 and 10 short and wide, each about twice as wide as antennomere 8, antennomere 9 barely longer than wide, antennomere 10 distinctly longer than wide; antennomere 11 oval, longer than antennomere 10. Lateral contours of pronotum and elytra almost continuously arcuate. Pronotum with basal angles obtuse, prominent, touching metepisterna. Lateral pronotal margins arcuate in lateral view. Scutellum completely covered by pronotal lobe. Elytra weakly narrowed apically, with sutural striae very fine and short, visible in, or slightly anterior to, apical 1/3 of sutural length. Epipleural striae deep, converging to margins posteriorly. Supra-epipleura wider than epipleura, abruptly narrowed apically. Mesepimeral line distinct, longer than interval to mesocoxae. Mesocoxal lines strongly arcuate, length of mesocoxal areas about as, or longer than, shortest metacoxal interval. Metepisterna wide, almost parallel-sided, with suture deep, straight. Hind wings strongly reduced, present as minute rudiments. Tibiae straight, metatibiae at apex slightly wider than near base.

**Male.** Protarsomeres 1–3 slightly enlarged, with tenent setae. Abdominal antennomere 6 with mesal lobe minute, acute, triangular. Aedeagus (Fig. 52, 53) with apical process much shorter than basal bulb, tapering apically, very weakly sinuate ventrally, tip not curved, relatively robust. Internal sac with flagellum flat, long, not or moderately narrowed apically, distinctly striate. Flagella guide-sclerite short, with obtuse tip overlapped by flagellum. Accessory lateral sclerite present. Membranes of internal sac lacking spine- or scale-like structures. Parameres sinuate at dorsal view, arcuate at lateral view.

**Female.** Coxites narrow with styli apical, bearing long setae.

**Comments.** Among the species with robust tibiae, this is the only one having relatively long sutural striae, though these may not be clearly seen and must be observed in diffused light. The dorsoventrally compressed reddish body though is characteristic of this species. Note that the metaventral punctation is variable within this species.

**Distribution** (map 12). North Island.

AK, CL, WO, BP, GB, TO, HB, WN / –.

**Material examined.** Holotype and 23 paratypes — see Appendix 1 for collection details of specimens. **Holotype** information: New Zealand, TO, Ohakune Mountain Rd, near Mangowhero Lodge, 28 Nov 1985, R. C. Craw, sifted litter 85/70, barcode NZAC04011561 (NZAC).

**Etymology.** Named for the characteristic slender body form.

### **Scaphisoma Leach, 1815**

*Scaphisoma* Leach, 1815: 89. Type species: *Silpha agaricina* Linnaeus, 1758, by monotypy.

*Scaphosoma* Agassiz, 1846. Unjustified emendation.

*Scaphiomicrus* Casey, 1900: 58. Type species: *Scaphisoma pusilla* LeConte, 1860, by original designation.

*Pseudoscaphosoma* Pic, 1915b: 31. Type species: *Pseudoscaphosoma testaceomaculatum* Pic, 1915; by original designation. Synonymy by Löbl, 1975.

*Scutoscaphosoma* Pic, 1916b: 3 (subgenus of *Scaphosoma*). Type species: *Scaphosoma rouyeri* Pic, 1916, by monotypy. Synonymy by Löbl, 1981.

*Scaphella* Achard, 1924: 29. Type species: *Scaphosoma antennatum* Achard, 1919; by original designation. Synonymy by Löbl, 1970.

*Macrobaeocera* Pic, 1924: 195. Type species: *Scaphosoma phungi* Pic, 1922, by monotypy. Synonymy by Löbl, 1975.

*Mimoscaphosoma* Pic, 1928d: 49 (subgenus). Type species: *Scaphosoma bruchi* Pic, 1928; by monotypy.

**Diagnosis.** Last maxillary palpomere normal (tapering). Antennomere 3 usually short and triangular, 4 variable; 7–11 asymmetrical. Galea wider than long; brush apical and radulate. Mentum setose. Anterior margin of pronotum without a bead. Hypomeron without fovea. Prothoracic corbiculum absent. Mesocoxal lines present on metaventricle. Metendosternum with dorsal arms branching at base. Membranes of abdomen not brick-wall patterned. First abdominal ventrite with metacoxal bead. Profemoral ctenidium absent. Mesotibia with 2 ventral spines. Metacoxae separate. Empodium unisetose.

**Description** (characters which are variable in the genus but are present in all New Zealand species are indicated by an asterisk (\*) with the exceptions indicated). Body length usually 1–3 mm. Body moderately convex dorsally, ventrally more convex than dorsally. Dorsal vestiture reduced\* or well developed. Labral setae present and simple (reduced)\* or apically notched. Mandible unidentate apically, subapical serrations absent or present. Maxillary palpus normal (tapering); palpomere 4 elongate, at base about as thick as apex of preceding palpomere, tapering towards apex, not expanded and lacking marginal sulcus; 1, 2, or more setae present on palpus 2. Galea wider than

long; brush apical and radulate. Inner and basal setae present on mesal margin of lacinia. Hypopharynx with 2 setae on the adoral surface (absent in *S. hanseni*). Labial palp 3-segmented; palpomere 2 short and wide, 3 elongate and curved, longer than palpomeres 1 and 2 combined; terminal palpomere not aciculate, inserted subapically and strongly curved; subapical palpomere with 1 seta. Mentum with anterior edge straight; surface setose\* or with spines. Submentum with anterior margin invaginate. Submaxillary area of head with or without\* microtubulate ducts. Gular area with or without\* transverse clusters of pores. Frontoclypeal suture present. Eye entire or notched; interocular distance small. Antennal insertion below slight ridge or completely exposed (*S. corcyricum*); present at midline of eye. Antenna filiform; antennomere 3 usually shortened and triangulate\*, or rarely elongate; 4 elongate\* or short; antennomeres 7, 9, and 10 asymmetrical. Anterior tentorial tendon present. Prothoracic corbiculum absent. Anterior margin of procoxal cavity setose. Hypomeron concavely impressed and in lateral view completely visible; apex projecting beyond pronotum or not\*; fovea absent. Prothoracic carina prominent with a bead; visible in dorsal view (*S. hanseni*) or not completely visible; straight or ventrally curved\* in lateral view. Pronotum with basal lobe well developed; anterior margin with bead obliterated at middle; posterior angle acute; extending below ventral edge of elytra\* or not; extending to anapleural suture\* or not. Prosternum with spine present. Mesoventrite with prepectus; secondary lines present or absent\*; median lines present and open, or absent\*. Mesoventral lines present or not\*; connecting with mesocoxal cavity, impunctate or punctate; not parallel with outer margins of procoxal rests. Mesepimeron present\*, fused with mesoventrite, or absent; length variable. Mesocoxa wider than intercoxal process; coxa round. Meso- and metaventrites fused without an internal ridge; sulcus present or absent\*. Mesocoxal lines arcuate or parallel to coxae; impunctate or punctate (*S. hanseni*). Metaventrite without setose patch; primary setae present and located on the disc; transverse premetacoxal lines or bead present or absent (*S. hanseni*); discrimen absent; intercoxal plate absent. Metepisternal suture present and impunctate. Metepisternum visible in ventral view; posterior line present or absent\*. Metendosternum with stem absent. Scutellum visible or concealed\* below elytra; width of scutellum about 1/3 entire width of pteronotum; transverse basal line or carina complete and forming a trapezoid. Metacoxae widely separate. Brick-wall membranes absent between abdominal ventrites 1–4. Abdominal process on ventrite 1 without intercoxal line; metacoxal lines present and arcuate or parallel (*S. hanseni*) to coxa; metacoxal bead punctate; primary setae present. Primary setae present on ventrites 2–

4; 2 on each segment. Abdominal vestiture absent. Paratergites present or absent\* on segments 4 and 6. Hind wings present\* or absent. Elytron with basal stria present or absent\* (poorly developed in *S. hanseni*); sutural striae shortened or elongate; basal and sutural striae connected (*S. hanseni*) or not; epipleural stria present with interval between it and margin very narrow; sutural spines and apical serrations present\* or absent. Metacoxal process of metaventrite digitate. Profemoral ctenidium present. Mesofemora rounded in cross-section; subapical seta present and not spine-like. Tibiae smooth. Mesotibia distinctly longer than mesotarsus; 2 ventral mesotibial spines present, with spines subequal\* or equal to each other (the longest spine with its greatest length about as long as 2/3 of tarsomere 1). Metatarsi smooth; mesotarsomere 1 longer than tarsomere 2. Empodium unisetose. Female coxites with apical styli.

**Larval diagnosis.** Head with 5 stemmata present. Pseudomola present as a dense group of short strong teeth; never in the form of an elongate lobe. Urogomphus 2-segmented or sometimes 1-segmented.

**Comments.** *Scaphisoma* contains over 600 described species and has virtually a worldwide distribution, with a notable absence from Chile and southern Argentina, and the tundra of the northern New World. This species diversity is associated with a large degree of character variation as indicated in the above description.

The previous records of *Scaphisoma* from New Zealand were based on misidentifications (e.g., Kuschel 1990 lists 4 species of *Scaphisoma*). Nevertheless, at least 3 species of *Scaphisoma* occur in New Zealand, 1 of which is endemic and widely distributed. The remaining 2 species are introduced from the Mediterranean and Australia, respectively. The New Zealand *Scaphisoma* fauna is depauperate compared to the diverse faunas of New Caledonia (27 species) and Fiji (8 species) (Löbl 1980, 1981).

### Key to *Scaphisoma* species

- 1 Antennae with length of antennomeres 3 and 4 combined about as long as antennomere 5, antennomere 4 about 3× as long as wide (Fig. 17, 19). Elytra typically bicoloured. Punctuation very fine on elytra, lateral portions of metaventrite and abdominal ventrite 1. Body length 1.2–1.7 mm ..... 2
- Antennae with length of antennomeres 3 and 4 combined much shorter than antennomere 5, antennomere 4 about 2× as long as wide (Fig. 18). Elytra with subapical or apical, poorly delimited, pale fascia. Punctuation relatively coarse on elytra, lateral parts of metaventrite and abdominal ventrite 1. Body length 1.9–2.1 mm .. ..... (p. 40)... *corcyricum* Löbl

- 2(1) Abdominal ventrite 1 with punctation distinctly denser and coarser in middle than on lateral parts. Metacoxal lines parallel or subparallel ... (p. 41)... *hanseni* sp. n.  
 — Abdominal ventrite 1 with punctation evenly very fine and sparse throughout. Metacoxal lines strongly arcuate ..... (p. 40)... *funereum* Löbl

### ***Scaphisoma corcyricum* Löbl, 1964**

Fig. 18, 73; Map 21

*Scaphisoma corcyricum* Löbl, 1964: 1

*Scaphisoma corcyricum*; Löbl, 1970: 749

**Diagnosis.** Body colour generally black; elytron with subapical fascia. Antennae with length of antennomeres 3 and 4 combined shorter than antennomere 5. Eye weakly notched. Punctuation coarse on elytra. Metacoxal lines strongly arcuate.

**Description.** Length 1.9–2.1 mm. Body black or black with reddish lustre, apical portion of elytra usually dark reddish with a pale subapical fascia, mouthparts, apical abdominal segments, and appendages ochreous. Prothorax sometimes lighter than elytra and reddish brown. Punctuation dense, distinct, very fine on head, pronotum, and exposed abdominal tergites, relatively coarse on elytra, metaventrite, and first exposed abdominal ventrite. Following abdominal ventrites apparently impunctate. Thorax, elytra, and first exposed abdominal ventrite lacking microsculpture, following ventrites with conspicuous microsculpture consisting of punctures. Antennae moderately long. Length/width ratios of antennomeres as follows: III: 4/3.5; IV: 5/3.5; V: 11/4; VI: 10/4.5–5; VII: 19–20/7; VIII: 10–12/5; IX: 17–18/7; X: 16–18/7–8; XI: 20–23/8. Antennomere 4 flattened, almost parallel-sided, antennomere 5 barely widened mesally, following antennomeres distinctly widened mesally. Pronotum with lateral margins arcuate, lateral margin keels barely visible in dorsal view. Exposed tip of scutellum minute. Elytra with lateral margins arcuate, lateral margin keels not or barely exposed in dorsal view, apical margins slightly rounded, inner apical angle lying posterior to outer apical angles, sutural margin not raised anteriorly, raised in posterior 2/3, adsutural area flat anteriorly, sutural striae fine, parallel with suture in middle, converging apically, not or barely curved outward near base, reaching base at each side of pronotal lobe and not extending along basal margins of elytra. Hind wings fully developed. Mesepimeral line longer than interval to mesocoxa. Metaventrite flattened in middle, lacking mediobasal impressions, not microsculptured. Mesocoxal line arcuate, finely punctate; mesocoxal area 0.03–0.04 mm long. Metepisterna flat, in same plane as lateral part of metaventrite, strongly narrowed anteriorly,

with fine suture. Apex of pygidium emarginate. Ventrite 1 about as coarsely punctate as metaventrite except for very finely punctate apical area; metacoxal lines strongly arcuate, distinctly punctate; metacoxal area 0.13–0.14 mm long. Tibiae slender, straight.

**Male.** Protarsomeres 1–3 widened. Aedeagus symmetrical, moderately sclerotised. Median lobe with large basal bulb, distal process narrow, arcuate, tapering. Parameres narrow, sinuate in dorsal view, slightly curved in lateral view, slightly longer than basal bulb, lacking lobes or apophyses. Internal sac tubular, with weakly sclerotised rod.

**Distribution** (Map 21, New Zealand). **Europe:** Croatia, Greece, Turkey, Cyprus. **New Zealand:** AK.

**Material examined from New Zealand.** 4 non-type specimens — see Appendix 1 for collection details of specimens.

**Comments.** Comparison of New Zealand specimens with the type material from the Mediterranean confirms that this species is obviously introduced. *Scaphisoma corcyricum* is a member of the *S. agaricinum* group (Löbl 1970) which includes the widely distributed *S. agaricinum* (Linnaeus) and *S. inopinatum* Löbl and the more restricted species: *S. italicum* Tamanini, *S. loebli* Tamanini, and *S. palumboi* (Ragusa). These species are restricted to the Palaearctic region and are found widely throughout most of Europe and eastward to Eastern Siberia and Mongolia. The aedeagi of these species provide reliable diagnostic features for the group. *Scaphisoma corcyricum* may be separated from its relatives by its very short antennomere 4 in combination with its relatively large body size. These characters also serve to separate it from the species present in New Zealand.

**Present status of *S. corcyricum* in New Zealand.** The status is uncertain because there is only one collection made of the species, and it is unclear if the species has established. There have been many introductions of beetles and other invertebrates to New Zealand, especially from Australia and Europe (see Kuschel 1990), and *S. corcyricum* may have arrived to New Zealand with the cut flower or grape vine trades.

### ***Scaphisoma funereum* Löbl, 1977**

Fig. 19, 71, 72; Map 22

*Scaphisoma funereum* Löbl, 1977: 31

**Diagnosis.** Body colour generally dark brown to black; elytron with subapical fascia. Antennae with length of antennomeres 3 and 4 combined about as long as antennomere 5. Eye strongly-notched. Punctuation fine on elytra. Metacoxal lines strongly arcuate.



**Description.** Length 1.25–1.40 mm. Head and most of body very dark brown to almost black, hypomera sometimes slightly reddish. Elytra with pale, ochreous or yellowish, well delimited subapical fasciae, or with apical 1/4–1/3 light ochreous or yellowish. If apical area darkened, still much lighter than elytral centre. Antennae slightly infusate. Mouthparts and legs darker and more reddish than subapical elytral fasciae. Apical abdominal segments light ochreous. Punctuation of body entirely sparse and very fine, barely visible at high magnification. Body, apical abdominal segments excepted, lacking microsculpture. Antennae relatively long. Antennomere 4 cylindrical, following antennomeres widened mesally. Length/width ratios of the antennomeres as follows: III: 3/3; IV: 7/2; V: 10/2.5; VI: 12/3.5; VII: 14/4.5; VIII: 11/3.5; IX: 15/4.5; X: 15/4.5; XI: 18/5. Pronotum with lateral margins arcuate, lateral margin keels not exposed in dorsal view. Exposed tip of scutellum minute. Elytra with lateral margins arcuate, lateral margin keels exposed in dorsal view, apical margins slightly rounded, inner apical angle lying posterior to outer apical angles, suture not raised, adsutural area flat, sutural striae fine, parallel with suture in middle, converging apically, slightly diverging anteriorly, curved outward near base, reaching base at each side of pronotal lobe and not extending along basal margins of elytra. Hind wings fully developed. Mesepimeral line slightly shorter than interval to mesocoxa. Metaventricle weakly convex in middle, lacking mediobasal impressions, not microsculptured, very finely punctate. Mesocoxal line strongly arcuate, very finely punctate; mesocoxal area 0.04–0.05 mm long. Metepisterna flat, in same plane as lateral part of metaventricle, strongly narrowed anteriorly, with fine suture. Apical abdominal segments with microsculpture consisting of punctures. Propygidium with punctuation moderately dense, well delimited, coarser than that of elytra. Pygidium with punctuation similar to that of propygidium near base, becoming fine and sparser towards apical margin. Apical margin of pygidium truncate. Ventricle 1 lacking microsculpture, punctuation similar to metaventricle; metacoxal line strongly arcuate, distinctly punctate; metacoxal area 0.06–0.07 mm long. Tibiae slender, straight.

**Male.** Protarsomeres 1–3 widened. Aedeagus weakly sclerotised. Median lobe with strongly reduced basal bulb, distal process very narrow, arcuate, with acute tip. Parameres extremely slender, each bearing narrow, hyaline, apical apophysis.

**Comments.** Comparison between New Zealand specimens and the types from Australia confirms that this species is introduced. Based on aedeagal characters (aedeagal characters, such as the long parameres with apical part abruptly narrowed and weakly sclerotised), *Scaphisoma funereum* is closely related to other members of distinctive

group that includes *S. leai* Löbl and *S. glabripenne* Löbl from Lord Howe Island, and *S. coarctatum* Löbl from the Indonesian island of Buru (Löbl 1977). It may be easily distinguished from *S. leai* and *S. glabripenne* by the presence of the mesepimeral line, and from *S. coarctatum* by the sutural striae starting at the basal margin of the elytra, close to the pronotal lobe.

*Scaphisoma funereum* has been collected from *Amanita muscaria*, which tends to grow beneath pines in New Zealand, and was listed by Kuschel (1990) under the name *Scaphisoma* sp. 2, as well as among the grasses *Carex* and *Uncinia*. This species has also been collected from pastures in the Auckland area (Leschen *et al.* unpubl.) as is typical for many introduced taxa, including some species from Australia.

**Distribution** (map 22, New Zealand). **Australia:** New South Wales and Queensland. **New Zealand:** North Island.

ND, AK, CL, BP, TO / –.

**Material examined from New Zealand.** 15 non-type specimens — see Appendix 1 for collection details of specimens.

**Fungal hosts.** Basidiomycetes: *Amanita muscaria*, undetermined fleshy fungus.

### *Scaphisoma hanseni* new species

Fig. 17, 69, 70; Map 23

**Diagnosis.** Body colour generally dark brown to tan or light brown, never black; elytron without subapical fascia. Antennae with length of antennomeres 3 and 4 combined about as long as antennomere 5. Eye weakly notched. Punctuation coarse on elytra. Metacoxal lines parallel.

**Description.** Length 1.4–1.7 mm. Colour variable, most of body uniformly light to dark brown, or head and pronotum darker than elytra; apical and lateral parts of elytra usually lighter than inner part of elytral disc. Tip of abdomen, tarsi, mouthparts, and antennae similar as apical part of elytra or lighter. Thorax and elytra lacking microsculpture, very finely and sparsely punctate. Antennae relatively short. Antennomere 4 subcylindrical, following antennomeres widened. Length/width ratios of antennomeres as follows: III: 1/1; IV: 7/2.5; V: 10/3; VI: 10/4; VII: 15/6; VIII: 9/4; IX: 14/6; X: 13/6; XI: 18/7. Pronotum with arcuate lateral margins, lateral margin of carinae visible at dorsal view. Minute tip of scutellum exposed. Elytra moderately narrowed apically, with arcuate lateral and apical margins. Inner apical angle lying posterior to outer apical angles. Sutural striae distinct, parallel to sutural margin, curved along base and outwards, extending out to middle 1/3 or sometimes out to middle of the elytral base. Adsutural area (=area between sutural margin and



sutural striae) flat, with punctuation as fine as but denser than that on elytral disc. Hind wings fully developed. Mesepimeral line slightly shorter than interval to mesocoxa. Metaventricle without basomedian impressions, evenly convex in middle. Mesocoxal lines arcuate; mesocoxal area about 0.04–0.05 mm long. Metepisterna flat, in same plane with lateral parts of metaventricle, strongly narrowed anteriorly, with fine suture. Tibiae slender, slightly curved. Exposed abdominal tergites with microsculpture consisting of punctures. Punctuation of pygidium very fine and sparse near apex, becoming dense and relatively coarse toward base. Propygidium with very irregular, relatively coarse punctuation. Abdominal ventrite 1 lacking microsculpture, with punctuation moderately dense and fine on most of median area, very fine on medio-apical and lateral areas. Metacoxal lines entirely parallel or weakly arcuate internally and parallel to basal margin externally. Metacoxal areas narrower than mesocoxal areas, barely 0.02 mm long at largest point. Following ventrites with microsculpture consisting of micropunctures and very finely punctate.

**Male.** Protarsomeres 1–3 slightly widened. Aedeagus (Fig. 69, 70) 0.40–0.45 mm long, symmetrical. Median lobe moderately sclerotised. Basal bulb oval, margined apically, lacking ventral tubercle, with dorsal membrane large, not clearly delimited. Distal process of median lobe inclined, with straight ventral wall, slightly swollen dorsally, moderately narrowed apically, with blunt tip. Dorsal valves long, overlapping in middle portion. Internal sac with 2 slender, almost straight, rods and appearing transversally striate. Parameres slender, appearing almost straight in dorsal view, sinuate in lateral view, largely overlapped by

median lobe in dorsal view, extending slightly posterior to tip of median lobe, slightly widened apically.

**Comments.** The aedeagal characters of *S. hanseni* (such as the long and narrow median lobe, presence of a flagellum, and narrow parameres) indicate a possible relationship to *S. instabile* Lea and *S. neboissi* Löbl, both from Australia, and *S. notulum* Fauvel from New Caledonia. *Scaphisoma hanseni* can be easily distinguished from all Australian congeners, and *S. notulum*, by the extremely narrow metacoxal areas in combination with the abdominal punctuation and microsculpture.

Despite the wide distribution and common occurrence of this species, larvae have not been collected. Kuschel (1990) reported this species as *Scaphisoma* sp. 1 from *Phellinus punctatus* (= *Fuscoporia dryophila*) throughout the year.

**Distribution** (Map 23). Throughout New Zealand.

ND, AK, CL, WO, BP, TK, TO, WN / SD, NN, BR, WD, MB, DN, SL.

**Fungal hosts.** Basidiomycetes: *Auricularia polytricha*, *Ganoderma*, *Ganoderma australe*, *Phellinus gilvus*, *Phellinus kamahi*, *Phellinus punctatus* (= *Fuscoporia dryophila*), *Phellinus* sp., *Tyromyces*.

**Material examined.** Holotype and 232 paratypes — see Appendix 1 for collection details of specimens. **Holotype** information: New Zealand, WD, Okuku Reserve, 27 Jan 1998, R. A. B. Leschen, C. Carlton, ex *Phellinus* sp, barcode NZAC04011311 (NZAC).

**Etymology.** The species is named in honour of the late Michael Hansen, whose contribution to the knowledge of beetles, especially staphyliniforms, was very significant.

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**Appendix 1.** Collection details for specimens examined. Species listed in alphabetical order. Latitude and longitude coordinates for localities are in Appendix 2. (FIT = flight intercept trap). Abbreviations for main collectors: AKW — A. K. Walker; AN — A. Newton; ESG — E. S. Gourlay; GH — G. Hall; GK — G. Kuschel; GWR — G. W. Ramsay; JCW — J. C. Watt; JIT — J. I. Townsend; JAH — J. A. Hutcheson; JSD — J. S. Dugdale; JTN — J. T. Nunn; JWE — J. W. Early; JWMM — J. W. M. Marris; MT — M. Thayer; RABL — R. A. B. Leschen; RJBH — R. J. B. Hoare; RCH — R. C. Henderson; RME — R. M. Emberson; S&JP — S. & J. Peck; SP — S. Peck; SLS — S. L. Stephenson.

**Deposition of specimens:** these collectors have deposited their specimens in the following collections unless otherwise indicated: A. Newton, M. Thayer, S. L. Stephenson, S. & J. Peck — **FMNH**; J. A. Hutcheson — **FRNZ**; J. T. Nunn — **JNIC**; D. Burckhardt, E. Heiss & Permer — **MHNG**; R. M. Emberson, J. W. Early (pre-1990), J. W. M. Marris, C. A. Muir, H. M. Harman, J. M. Holland, M. H. Bowie, M. G. McPherson, M. R. Butcher, P. Syrett, R. R. Scott, S. P. Womer — **LUNZ**; E. Fairburn — **FWNZ**; J. W. Early (post 1989), K. Parsons, S. E. Thorpe, R. F. Gilbert, P. Sutton — **AMNZ**. All other specimens without a collection acronym are deposited in **NZAC**.

***Baeocera abrupta*** new species (p. 29)

68 paratypes. **North Island:** ND. 2, Fern Flat, Te Karoa SR, 15 Feb 2000, RABL, GH, RJBH, leaf litter, RL538; 4, Ngaioatonga SR Walkway, 3 Nov 1981, GK, litter & decayed wood 81/118 & 81/119; 1, Waipoua SF lookout, 29 Oct 1980, GK, decayed wood and litter; 4, Waipoua SF, Te Matua Ngahere, 400 m, 16–20 Mar 1978, S&JP, berl. frass under bark; 27 Nov 1984, AN, MT, hdwd-podocarp forest, 688; 27 Nov–6 Dec 1984, AN, MT, hdwd podocarp forest, 687; 2, Waipoua SF, Yakas Tk, 27 Jul–7 Aug 1998, RABL, GH, RJBH, FIT 1, RL235; 2 Aug–16 Sep 1998, RABL, GH, RJBH, FIT A, RL253. **AK. 1,** Clevedon, 9 Jul 1958, R. A. Cumber Collection; 31, Lynfield; 2 Nov 1974, beating at night; 23 Nov 1974, GK, litter 74/64 (1 MHNG); litter 74/67 (2 MHNG); 13 Apr 1975, GK, litter 75/74 (1 MHNG); 13 Dec 1975, GK, 24 Jul 1976, GK, decayed wood (2 MHNG); 31 Jul 1976, GK; 21 Aug 1976, GK (1 MHNG); 21 Aug 1976, GK, decayed wood; 9 Mar 1977, GK, soil under dead *Acacia mearnsii*; 17 Apr 1977, GK, soil under dead *Acacia mearnsii* (1 MHNG); 10 Dec 1977, GK; 30 Dec 1977, GK; 2 Mar 1980, GK, malaise trap (1 MHNG); 15 Feb 1981, GK, malaise trap 5; 5 Apr 1981, GK, malaise trap 5; 18 Apr 1981, GK, malaise trap 5. **CL. 1,** Coromandel Kauri Clump Forest, 13 Feb 1979, JSD. **WO. 1,** Waitomo, Maori Lake, Tumutumu Rd, 24 May 1983, JCW, wood mould 83/58. **BP. 4,** 20 Oct 1992, JSD, rotten wood and liverworts 92/68; Lottin Pt Rd, Waenga Bush, 10 Mar 1993, JSD, litter 93/37. **GB. 6,** Kakanui, 350 m, 1 Feb–16 Mar 1993, T. K. Crosby, pit traps. **TO. 1,** Opepe Res, 18 km SE Taupo, 11–26 Mar 1978, S&JP, podocarp bdlf forest, 716. **WN. 1,** Belmont, Korokoro Dam, 29 Aug 1994, JTN, in rewarewa litter; 1, Kaitoke, Pakuratahi Forks, 18 Jul 1993, JTN, in decayed wood; 3, Karori Reservoir, 8 Jan 1995, JTN, in decayed wood; 28 Mar 1997, JTN, in dead *Ganoderma* fungus; 10 Apr 1997, JTN, amongst moss on bole of fallen pine; 1, Rimutaka FP, Graces Stm Tk, 15 Aug 1993, JTN; 1, Rimutaka Hill, Jims Corner, 30 Aug 1992, JTN, in decayed wood; 1, Silverstream, Keith George Res, 5 May 1995, JTN, in decayed wood; 1, Tunnel Gully, The Plateau, 23 Sep 1993, JTN, in much decayed wood; 2, Wellington, Tinakori Hill, 10 Oct 1991, JTN, in soggy decayed wood; 20 Jun 1993, JTN, in decayed *Nothofagus* branch.

***Baeocera actiosa*** (Broun, 1881) (p. 30)

437 specimens. **North Island:** ND. 3, Fern Flat, Te Karoa SR, 15 Feb 2000, RABL, GH, RJBH, RL538; 1, Kaiwhetu, N of Hihii, Krause Property, 15 Feb 2000, RABL, GH, RJBH, ex corticioid, 536; 4, Mangamuka, 5 May–12 Jun 1999, RABL, E. Hilario, FIT A, RL422; 20 Jan–30 Mar 1999, RABL, GH, RJBH, FIT (A), RL366; 1, Mangamuka Gorge SR, 6.6 km NW Mangamuka, 70 m, 25 Nov–5 Dec 1984, AN, MT, hdwd-podocarp

forest, *Trichia* sp., AMT Lot No. 84-1; 8, Mangamuka Walkway, 28 Jul–1 Aug 1998, RABL, RJBH, FIT, RL223; 1 Aug–15 Sep 1998, RABL, GH, RJBH, FIT, RL252; 4, Ngaioatonga SR Russell Walkway, 3 Nov 1981, GK, litter and decayed wood 81/119; 1, North Cape, Te Paki Coastal Park, 7 Feb 1975, JCW, wood mould 75/82; 1, Omahuta Forest, Omahuta Kauri Sanctuary, 340 m, 29 Nov–5 Dec 1984, AN, MT, kauri-podocarp, window trap, 693; 1, Omahuta Forest, Picnic Area nr Kauri Sanctuary, 330 m, 29 Nov–5 Dec 1984, AN, MT, 2ny hdwd-podocarp forest, window trap, 694; 4, Omahuta Kauri Sanctuary, 4 Feb 1975, GK, litter 72/21 (2 MHNG); 1, Omahutu SF, 7–10 Oct 1974, JSD, malaise trap; 11, Opuia Forest, Paihia Walkway, 21 Jan 1999, RABL, GH, RJBH, ex *Lycogala* and *Ceratiomyxa* and fungus log, 266; 1, Paihia, Opuia Forest, 12 Jan 2000, RABL, RJBH, ex *Stereum* sp. (day), 508; 4 Nov 1981, GK, litter and decayed wood 81/125; 4, Parua Bay, 4 Dec 1937, E. Fairburn; 2, Puketia Forest, Nature Walk, 21 Jan 1999, RABL, GH, RJBH, ex *Lycogala epidendrum*, 263; 1, Puketia Forest, Waipapa River, River walk, 13 Jan 2000, RABL, ex *Bjerkanderia adusta*, 518; 1, Puketia SF, 3 May 1999, RABL, GH, RJBH, at large, RL398; 1, Puketia SF HQ, 21 Jan–31 Mar 1999, RABL, GH, RJBH, FIT A, RL368; 1, Puketona, 20 Jan 1972, GWR, litter 72/49; 3, Tangihua Ra, nr lodge, 13 Feb 2000, RABL, GH, RJBH, leaf litter, moss, rotting logs, RL530; 3, Te Paki Coastal Park, E Pandora Rd, 7 Feb 1975, AKW, litter 75/40; 6, Te Paki Trig, 23 Nov 1982, GK, sifted litter and decayed wood 82/118, 82/117; 1, Te Paki Trig Bush, 23 Nov 1982, GK, stream bank; 1, Trounson Kauri Park, 29 Mar 1999, RABL, RJBH, GH, ex *Schizopora paradoxa*, 354; 2, Trounson Kauri Park, 250 m, 7 Dec 1984, AN, MT, kauri-podocarp hdwd, 698; 1, Waipoua Forest, Te Matua Ngahere, 400 m, 16–20 Mar 1978, S&JP, kauri forest, berlese frass under bark; 3, Waipoua Forest, Waipoua Stm, 70 m, 16–21 Mar 1978, S&JP, kauri forest, bracket fungi; 6, Waipoua Kauri Forest, 13 Apr 1992, SLS, ex *Trichia floriformis* fruiting body; SLS, ex *Hemitricia serpulula* myxomycete fruiting body, 6719; 1, Waipoua Kauri Forest, Te Mata Ngahere, 30 Nov 1996, Heiss & Permer; 1, Waipoua SF, 25 Nov 1980, GK, decayed wood 80/120; 2, Waipoua SF, 0.8 km NW Wairau Summit, 350 m, 27 Nov 1984, AN, MT, hdwd-podocarp forest, leaf & log litter, forest floor, 689; 27 Nov–6 Dec 1984, AN, MT, hdwd-podocarp forest, window trap, 689; 4, Waipoua SF, 0.8 km S Waikohatu Stm Bridge, 270 m, 28 Nov 1984, AN, MT, leaf and log litter, hdwd podocarp forest, 692; 28 Nov–6 Dec 1984, AN, MT, hdwd-podocarp forest, window trap, 692; 28 Nov 1984, AN, MT, hdwd-podocarp forest, leaf & log litter, forest floor, 692; 4, Waipoua SF, 0.9 km E Forest HQ, 120 m, 26 Nov–4 Dec 1984, AN, MT, hdwd-podocarp forest, window trap, 686; 2, Waipoua SF, 100 m, 17 Mar 1976, S&JP, under kauri log bark (1 MHNG); 4, Waipoua SF, Kauri Ricker Tk, 120 m, 26 Nov–4 Dec 1984, AN, MT, kauri podocarp hdwd, 684; 1, Waipoua SF, lookout, 29 Oct 1980, GK, decayed wood and litter 80/94; 2, Waipoua SF, Te Matua Ngahere, 14 Oct 1967, JSD, beating; 31 Oct 1985, R. C. Craw, sifted litter 85/51; 1, Waipoua SF, Te Matua Ngahere Tk, 27 Jan 1998, RABL, A. Davelos, ex *Ganoderma applanatum* (rugose form), 174; 1, Waipoua SF, Te Matua Ngahere, 370 m, 19 Mar 1978, S&JP, kauri log; 2, Waipoua SF, Toronui Tk, 120 m, 26 Nov–4 Dec 1984, AN, MT, kauri-podocarp-hdwd, window trap, 685; 8, Waipoua SF, vic Wairau Summit, 460 m, 27 Nov 1984, AN, MT, berl. hdwd-podocarp forest, leaf & log litter, forest floor, 683, 683; 1 Dec 1984, AN, MT, hdwd-podocarp forest, on *Ganoderma* conk [brown pore surface], 688; 27 Nov 1984, AN, MT, hdw podocarp forest, 668; 4, Waipoua SF, Wairau Summit, 400 m, 27 Nov–6 Dec 1984, AN, MT, hdwd-podocarp forest, window trap, 687; 37, Waipoua SF, Yakas Tk, 27 Jul–2 Aug 1998, RABL, RJBH, FIT (1), RL235, FIT (2), RL236; 2 Aug–16 Sep 1998, RABL, GH, RJBH, FIT (A), RL253, FIT (B), RL254; 29 Mar–5 May 1999, RABL, GH, RJBH, FIT (A), RL409; 5 May–11 Jun 1999, RABL, E. Hilario, FIT, RL418; 29 Mar 1999, RABL, RJBH, GH, ex *Amanita muscaria* and *Hypomyces*, 356; 5 May 1999, RABL, GH, RJBH, *Favolaschia pustulosus*, 411; 14 Jan 2000, RABL, RL525; 6, Waitangi SF, 2 Nov 1981, GK, litter and decayed wood 81/116; 1, Whangarei Falls, 14 Feb 2000, RABL, GH, RJBH, rotting wood, RL531; 1, Whangarei, Abbey Caves, 19 Nov 1997, RABL, GH, rotten logs; 1, Whangarei, Tapuhi, 17 Feb 1927, Fairburn. **AK. 4,** Auckland, Grafton Gully, 26 Feb–14 Mar 1978, SP, berlese, litter under fish heads; 1, Avicé Millar SR, 15 Dec 1999, GH, litter 99/69; 13, Bethells, Mātuku Res, 29 Jan 1998, RABL, C. Carlton, ex *Auricularia polytricha*, 155; 7 Mar–16 Apr 1984, B. G. Bennett, M. F. Tocker, Pit trap 6; 21 Oct–25 Nov 1983, GH, P. A. Maddison, Pit trap 6; 37, Lynfield, 23 Nov 1974, GK, litter 74/67; 28 Jan 1975, GK, litter 75/8; 27 Jan 1975, GK, litter 75/6; 2 Mar 1975, GK, litter 75/17; 13 Apr 1975, GK, litter 75/74; 4 May 1975, GK, litter 75/101; 17 May 1975, GK, 75/110 pit traps; 7 Aug 1975, GK, soil, *Hebe* spp.; 30 Nov 1975, GK, decayed wood; 19 Feb 1976, GK, streambed; 27 Jan 1977, GK, *Salix fragilis*; 1 May 1977, GK, decayed wood; 15 May 1980, GK; 27 Jul 1980, GK (2 MHNG); 7, Manurewa, Murphy's Bush, 2 May 1981, GK, rotten wood 81/59; 2, McElroy SR, 15 Dec 1999, GH, litter 99/67; 2, nr Auckland, May 1985 (MHNG); 1, Piha, 10 Mar 1977, GK, rotten wood; 3, Pohuehue SR, 8–15 Dec 1998, P. Paquin, N. Duperre, pit traps; 1, The Dome, 270 m, nr Warkworth, 7



Jan 1983, JCW, wood mould 83/8; 2, Waitakere, Broun Coll (BMNH); 11, Waitakere Ra, Cascade-Kauri Park, Up. Kauri Tk, 170 m, 23 Nov–8 Dec 1984, AN, MT, kauri-podo-hdwd, window trap, 680; 8 Dec 1984–25 Jan 1985, AN, MT, kauri-podo-hdwd, window trap, 680; 2, Waitakere Ra, Cascades, 100 m, 22–30 Mar 1978, S&JP, berlese forest litter; 22–30 Mar 1978, S&JP, bait trap [carrion]; 3, Waitakere Ra, Mill Bay, 7 Apr 1998, SLS, *Stemonitis*, 9502; 6, Waitakere Ra, near city of Auckland, 17 Mar 1992, SLS, ex *Stemonitis* sp. myxomycete, lot 6614; 17 Mar 1992, SLS, ex plasmodium of unidentified myxomycete fruiting body, lot 6601B, lot 6630; 17 Mar 1992, SLS, ex *Ceratiomyxa fruticulosa* myxomycete fruiting body, lot 6624; 8, Waitakere Ra, Fairy Falls, 21 Mar 1998, RABL, GH, ex *Fuligo*, 185; 21 Mar 1998, RABL, GH, ex *Hypoxylon* sp, 184; 1, Woodhill, T. Broun Collection (BMNH). **CL**. 1, Coromandel FP, Waiau Kauri Grove, 23 Mar 1998, SLS, Phasmodium of unidentified myxomycete, 9424D; 2, Coromandel Kauri Clump Forest, 13 Feb 1979, JSD, ex rotten logs on ground; 5, Gt Barrier Is, Mt Hobson, 21 Dec 2002–21 Jan 2003, K. Parsons, Malaise trap; 1, Gt Barrier Is, Mt Hobson, nr summit, 600 m, 7 Oct 2002, JWE, S. E. Thorpe, L11754; 1, Gt Barrier Is, Windy Canyon, 250 m, 20 Nov 2002, JWE, R. F. Gilbert, swept forest; 1, Wards Bush, N of Te Hope Stm, 2 Nov 1979, B. A. Holloway. **WO**. 2, Mt Maungatapu, 27 Oct 1930, Fairburn. **BP**. 5, L. Rotoma, 16 Feb 1979, JSD, on fungus coated logs; 1, Lotin Pt Rd, Waenga Bush, 27 Jan 1993, JIT, litter; 1, Mamaku, Capricorn Rd, 25 Dec 1986, JAH, malaise trap, mixed *Ixerba* & *Nothofagus truncata*; 2, Orete Forest, Te Puia, 19–22 Oct 1992, JSD, pan trap; 18 Sep–19 Oct 1992, GH, Malaise trap; 18, Papatea, 25 Jan–8 Mar 1993, JWMM, pitfall trap; 22 Oct 1992–25 Jan 1993, RME, pitfall trap; 24 Sep–19 Oct 1992, JSD, Malaise trap; 13 Oct–23 Nov 1992, GH, Pit traps; 10, Tapapa, 300 m, 25 Mar 1978, S&JP, litter; 24, Tapapa, Tukorehe Res, 25–29 Mar 1978, S&JP, berlese forest litter (1 MHNG); 3, Te Koau, 360 m, 26 Oct 1992, JWMM, forest litter 92/1; 2, Waiarohu, 10 Mar 1993, JSD, Litter 93/95. **GB**. 1, Kakanui, 300 m, 27 Oct 1992–1 Feb 1993, RME, pit fall trap; 1, L. Waikaremoana, 17 Jan 1972, GWR, litter 72/21; 1, Mt Maungapohatu, 762 m, 3 Mar 1971, JIT, litter; 11, Waitama V, Kaharoa Stm, 22 Nov 1993–10 Jan 1994, GH, Pit traps. **TK**. 1, Mt Egmont, Potaema Walk, 9 Dec 1995, JTN, in forest litter. **TO**. 2, 34 km SSE Taupo, Kaimanawa Forest Park, 850 m, 11–26 Mar 1978, S&JP, berlese forest litter; 1, Kaimanawa SF, 26 Mar 1978, S&JP, litter; 21, Kaingaroa, 16 Dec 1994, JAH, malaise trap, 30 yr *P. radiata*/Dic.squ/Kiokio-Pae sca; 16 Dec 1994, JAH, malaise trap, 5 yr *P. radiata*/pampas; 16 Dec 1994, JAH, malaise trap, 14 yr *P. radiata*/bracken-lotus; 23 Dec 1994, JAH, malaise trap, 5 yr *P. radiata*/pampas; 30 Dec 1994, JAH, malaise trap, 30 yr *P. radiata*/Dic.squ/Kiokio-Pae sca; 30 Dec 1994, JAH, malaise trap, 14 yr *P. radiata*/bracken-lotus; 8 Dec 1995, JAH, malaise trap, 30 yr *P. radiata*/wheki/kiokio forest; 22 Dec 1995, JAH, malaise trap, 6 year old *P. radiata*/toetoe-tutu forest; 22 Dec 1995, JAH, malaise trap, 15 year old *P. radiata*/bracken-lotus forest; 1, Ohinekuku, Ahimanawa Ra, 14 Jan 1972, GWR, litter; 2, Opepe, 27 Mar 1978, S&JP, litter; 1, Opepe Res, 18 km SE Taupo, 716 m, 11–26 Mar 1978, S&JP, forest litter; 2, Puerora Forest, Totara Walk, 18 Apr 1998, SLS, *Arcyria incarnata*, 9544; 1, Tongariro NP, Mahuia Camp, 875 m, 11 Nov 1976, GK, litter; 2, Waipapa Reserve, 28 Dec 1983, JAH, malaise trap, shrubland 570 m; 12 Jan 1984, JAH, malaise trap, shrubland 570 m. **HB**. 4, Boundary Stm SR, 20 Oct 1984, C. F. Butcher, sifted litter and rotten wood 84/71; 1, Kaweka Ra, Ngahere Catchment, 20 Dec 1983, P. M. Hammond, JCW, slime mould on rotten *Nothofagus* stump; 5, Waipatiki Res, 23 Dec 1983, JCW, sifted wood mould 83/144; 1, Waitere, 21 Oct 1984, C. F. Butcher, J. Paynter, litter 84/73; 1, White Pine Bush, 14 Oct 2001, RJBH, GH, litter 01/20. **RI**. 5, Taihape, Hautapu Gorge, 10 Nov 1982, JCW, wood mould 82/111. **WN**. 1, Akatarawa, 600 m, 7 Mar 1978, S&JP; 1, Ballance Bridge Res, Manawatu Gorge, 3 Jan 1975, JCW (MHNG); 1, Kaitoke, Pakuratahi Forks, 1 Aug 1993, JTN; 3, Orongorongo Valley, 1 Feb 1993, Hard Beech forest litter #20; 1, Rimutaka FP, near Wellington, 10 Apr 1992, SLS, ex *Fuligo* ?*septica* myxomycete fruiting body, lot 6696; 1, Silverstream, Keith George Res, 27 Dec 1996, JTN, in pulpy, decayed wood with *Ganoderma* fungus; 1, Waikawa V, 8 Mar 1978, JSD, ex sprayed twigs and branches with fungus; 5, Wellington, Tinakori Hill, 10 Oct 1991, JTN, in soggy decayed wood; 20 Oct 1991, JTN, litter under *Cordyline* etc; 1 Jan 1992, JTN, in decayed *Nothofagus* with white rot; 28 Aug 1992, J. T. Nunn, in decayed wood; 3 Oct 1992, JTN, in subhumid wood.

#### *Baeocera benolivia* new species (p. 31)

59 paratypes. **South Island**: **BR**. 6, Boatman Ck, 4.5 km Cronadun, Nov 1971, J. McBurney, litter 71/126 (4 MHNG); 34, Capleston, 8 Nov 1971, JCW, moss 71/137, Beech Forest Utilization Project (7 MHNG); 6 Apr 1973, JCW, Litter 73/108; 5, Capleston, Italians Creek, 12 Jan 1973, JCW, moss 73/11, Beech Forest Utilization Project, 12 Jan 1973, H. P. McColl, moss 71/113 (1 MHNG); 4, Fletchers Creek, 9 Nov 1971, JSD, litter 71/128; 7 Mar 1972, J. McBurney, litter 73/130; 1, Fletchers Creek, 1.5 km W Coll Ck, 26 Jan 1972, JSD, litter 72/92; 6; 1, Inangahua, 29 Nov 1961, JIT.

#### *Baeocera elenae* new species (p. 32)

104 paratypes. **South Island**: **NN**. 2, 13 km NW Takaka, Washbourn Res, 10 m, 19 May 1982, S&JP, beech log litter 82/7 (1 MHNG); 1, 6 km up Little Wanganui R, 24 Jun 1967, F. Alack, litter (MHNG); 1, 9 miles NW Karamea, 19 Jun 1967, F. Alack, litter; 3, Abel Tasman NP, Canaan Saddle, 850 m, 2 Jan 1985, AN, MT, *Nothofagus*-podocarp-hdwd forest on limestone, leaf & log litter, 729; 2, Arthur Ra, W side Flora Saddle, 950 m, 1 Jan 1985, AN, MT, *Nothofagus* spp, mossy forest, well-drained sphagnum nr stream, 725; 1, Cobb Ridge east of Cobb Reserve, 990 m, 2 Jan 1985, AN, MT, *Nothofagus* spp forest, berlese leaf & log litter, 728; 2, Dun Mt, Third House, 12 Jul 1966, JIT, moss; 1, Dun Mt, Wooded Pk E. Summit, 14 Sep 1971, GWR, litter 71/16; 2, Dun Tk Saddle, Wooded Peak, 14 Sep 1971, GWR, litter 71/109; 3, Heaphy Track, Goulund Downs Hut, 10 Nov 1999, RABL, GH, sifted leaf litter, RL453; 1, Lewis Hut, 7 Nov 1999, RABL, GH, leaf litter, RL443; 1, Mackay Hut, 8 Nov 1999, RABL, GH, sifted leaf litter, RL450; 4, Maungatapu Saddle, 2300', JIT, leafmould; 13, Mt Arthur, 20 May 1964, JIT, litter 64/37; Flora Clearing, 915 m, 19 May 1966, JIT, moss, 66/153; Flora Hut, 900 m, 21 Nov 1969, J. M. Jolly, litter; 11 Feb 1958, T. E. Woodward; Flora Saddle, 1000 m, 19 Feb 1992, D. Burckhardt, #58; Flora Tk, 1005 m, 20 Nov 1969, S. M. Silcock, litter; 1, Nelson, Dovedale, 11 Oct 1963, JIT, litter 63/26; 1, Nelson, Gordon's Knob, 1219 m, 16 May 1966, JIT, litter; 4, NW Nelson FP, Cobb Ridge, 1150–1300 m, 19 Feb 1992, D. Burckhardt, #59b; 1, Pakawau State Forest, 28 May 1971, JSD, litter; 1, Ridge above Onekaka, Iron Ore Pit, 20 May 1967, F. Alack, litter; 2, Takaka Hill, 2 Apr 1965, AKW, litter 65/134; 26 Feb 1949, A. E. Brookes Collection; 1, Takaka R, Cobb Dam Rd, Asbestos Forest Walk, 410 m, 2 Jan 1985, AN, MT, *Nothofagus*-podo-hdwd, berlese leaf & log litter, 727; 1, Tasman NP, Pigeon Saddle, 300 m, 20 km NE Takaka, 21 May 1982, S&JP (MHNG), mixed forest litter; 1, Wairoa Gorge, 20 Oct 1971, GWR, litter; 2, Westport, Lower Buller R, Norris Creek, 14 Oct 1970, JIT, litter. **BR**. 26, 1.5 km N Punakaiki, 50 m, 19 Dec 1984–20 Jan 1985, AN, MT, 2ny hdwd-nikau forest, window trap, 720 (10 MHNG); 4, Nelson Lakes NP, L. Rotoiiti, 27 Jul 1965, AKW, moss 65/402; 609 m, 8 Jun 1965, JIT, moss 65/357; St Arnaud Tk, 670 m, 4 Dec 1984–6 Jan 1985, AN, MT, *Nothofagus* spp forest, berlese leaf & log litter, forest floor, 706; 2, Nelson Lakes NP, L. Rotorua, 450 m, 3–7 Feb 1978, S&JP, *Nothofagus* forest, berlese forest litter; 1, Nelson Lakes NP, Mt Robert Road, 660 m, 26 Dec 1984–6 Jan 1985, AN, MT, *Leptospermum*-*Nothofagus* scrub, berlese leaf & log litter, forest floor, 772; 2, Nelson Lakes NP, N slope Mt Robert, Pinchout Tk, 1290 m, 18–26 Dec 1984, AN, MT, *N. solandri* forest, berlese leaf & log litter, forest floor, 716; 1, Okuku Scenic Res, 120 m, 8–19 Jan 1985, AN, MT, podocarp-hdwd forest, berlese leaf & log litter, forest floor, 731; 1, Punakaiki, 13 Jan 1983, JWE, coastal podocarp broadleaf litter; 1, Punakaiki Scen Res, Porari R, 20 m, 9 Jun 1985, JWE, in moss and litter; 1, Shenandoah Saddle, 12 Feb 1981, JWE, litter. **WD**. 1, 5 miles east of Kumara, 23 Aug 1974, RME, ex podocarp broadleaf litter; 3, Arthurs Pass NP, Otira, 580 m, 15 Nov 1986, RME, rata/kamahi litter; 1 Mar 1987, RME, rata/kamahi litter; Turiwahiti, 12 May 1965, JIT, litter 65/307; 2, Hokitika, L. Mahinapua Res, 28 Jan 1978, S&JP, litter; 5 m, 28 Jan 1978, S&JP, litter, berlese; 1, L. Mahinapua, 20 m, 23 Oct 1978, JWE, litter of mixed broadleaf punge second growth; 1, Loop Line Road Scen Res, SSE Kumara, 160 m, 8–19 Jan 1985, AN, MT, podocarp-hdwd forest, berlese leaf & log litter, forest floor, 730; 2, Okuku Scenic Res, 13 Sep 1981, RME, litter; 12 Jan 1998, RABL, C. Carlton, litter, *Laurelia novae zelandiae*, RL050. **KA**. 1, Kaikoura, Puhipuhi Reserve, 13 Oct 1966, AKW, litter 66/333; 1, Head Fabians Valley, 23 Oct 1963, JIT, litter 63/28; 1, Wairau Valley, St Rowans, 731 m, 7 Apr 1966, JIT, litter 66/297; 1, Wairau, Dip Flat, 30 Jun 1965, JIT, moss. **NC**. 1, Arthurs Pass, 850 m, 14 Apr 1984, JWE, moss in *Nothofagus solandri* forest.

#### *Baeocera epleuralis* new species (p. 32)

214 paratypes. **North Island**: **CL**. 1, Coromandel Peninsula, Kopu Rd, 18 Jun 1968, R. A. Cumber, leaf litter; 1, Coromandel Ra, 19 Jan 1972, GWR, litter. **BP**. 1, Horohoro SF, Mamaku Plateau, 550 m, 27 Jul 1976, JSD, litter 76/45; 1, L. Okataina, 9 Oct 1995, M-C. Lariviere & A. Larochelle, litter 95/12; 2, Mt Te Aroha summit, 3 Nov 1977, JSD, litter and liverworts 77/137; 27 Feb 1992, D. Burckhardt; 2, Raukumara Ra, Matu Rd, 27 Feb 1979, B. M. May, litter 79/36; 4, Rotorua, Mamaku Ra, 18 Jan 1972, GWR, litter. **GB**. 2, L. Waikaremoana, 16 Jan 1972, GWR, litter 72/14 (1 MHNG); 1, Urewera Ra, Orangihikoia Stream, 16 Feb 1968, A. W. Don, litter. **TK**. 1, Egmont National Park, Egmont Plateau 1172 m, 24 Jan 1987, S. Keiner, 1, Mt Egmont, Potaema Walk, 9 Dec 1995, JTN, in forest litter; 1, N Egmont, 23 Feb 1984, B. M. May, litter 84/51; 1, Pouakai Ra, 1006 m, Ahukawka Tk, 11 Jan 1978, JCW, litter 78/11; 4, 1372 m, Summit Ridge, 10 Jan 1978, JCW, litter 78/9; 2, 1400 m, litter 87/8 (1 MHNG); 1, W edge Hump Plateau, 2 Dec 1975, JSD, litter 75/200. **TO**. 1, Ahimanawa Ra, 609 m, 14 Jan 1972, GWR, litter 72/10; 1, Desert Rd, 10 ml N Waiouru, 17 Feb 1973, RME; 1, Summit, 26 Nov 1985, R.

C. Craw, moss 85/63; 1, Erua 2633; 24 Nov 1965, JIT, forest litter; 1, Ohakune Mt Rd, McCleans Clearing, 27 Nov 1985, R. C. Craw, sifted litter 85/68; 1, 1 km, 19 Nov 1995, JTN, in forest litter; 1, Mt Ruapehu, 9 km NE Ohakune 850 m, 22 Feb 1992, D. Burckhardt; 83, Mt Ruapehu, Blyth Hut, 1300 m, 22 Feb 1992, B. Burckhardt. **TO/BP**. 2, Huiarau Ra, 914 m, 17 Jan 1972, GWR, litter 72/22. **HB**. 1, Kaweka Ra, Makahu Spur, 1219 m, 29 Feb 1971, litter 71/22. **RL**. 1, Manawatu Forest, 12 Dec 1948, A. E. Brookes, leafmould; 3, Mangaweka, 1983, H. P. McColl, Litter 20/83; 29 Nov 1983, H. P. McColl, Litter 39/83. **WN**. 1, 5 ml N Upper Hut, 22 Apr 1965, N. A. Walker, 3, Akatarawa Saddle, Tararua SF, 500 m, 7–10 Mar 1978, SP, berlese forest litter; 1, Brooklyn, 142 Mitchell St, 15 Oct 1995, JTN, in soil and humus accumulated on forest patio; 1, Kaitoke, Pakuratahi Forks, 20 Jul 1995, in *Cortaderia* litter; 3, Karori Reservoir, 9 Oct 1994, JTN, in forest leaf litter; 15 Apr 1995, JTN, in twiggy flood debris; 1, Kimberly Res, 60 m, 8–10 Feb 1978, S&JP, berlese litter; 1, Mt Holdsworth, Donelly Flat, 30 Jan 1985, H. P. McColl, litter nr giant rata; 2, Mt Holdsworth 2000, 19 Nov 1968, S. E. Dridge, litter; 1, N of Upper Hut, 22 Apr 1965, N. A. Walker, litter 65/183; 10, Orongorongo Valley, 1 Dec 1992, hard beech forest litter #10; 1 Jan 1993, hard beech forest litter #14; 1 Feb 1993, hard beech forest litter #20; 15 Oct 1993, hard beech forest litter #22; 18 Oct 1994, hard beech forest litter #49; 16 Feb 1995, hard beech forest litter #67; 7 Jan 1992, JSD, litter of *Nothofagus truncata* by emergence trap; 2, Taita, Hutt Valley, 1958–1961, K. Lee, litter 61/16; 30 Aug 1965, M. S. Luxton, litter, *Leptospermum scoparium*; 1, Tararua FP, Waiotauru Rd, 21 Aug 1993, JTN, in leaf litter; 1, Tararua Ra, Dundas Hut Ridge, 3 Dec 1984, T. K. Crosby, sifted litter 84/85; 5, Wellington, Tinakohi Hill, 27 Jul 1991, JTN, in streamside mud and gravel; 20 Jun 1992, JTN; 9 Jun 1991, JTN, in forest litter. **WA**, I, Haurangi, Aorangi Mts, 670 m, 2 Sep 1965, J. I. Townsend, litter 65/460; 5, Hikurangi, 13 Sep 1982, JCW, Litter 82/77; 2, L. Wairarapa, 1 Sep 1965, JIT, litter 65/459; 8, Martinborough, Mahaki, 14 Sep 1982, JCW, litter 82/80; 1, Palliser Bay, Putangina Stm, 23 Oct 1995, JTN, in forest leaf litter; 1, Ruakokoputuna, Blue Creek, 29 Jul 1995, JTN, in *Nothofagus* litter; 1, Tuhitarata, 18 Jan 1984, H. P. McColl, Litter 1/84. **South Island: SD**. 1, Opouri Saddle, 22 May 1964, JIT, litter; 1, Opouri Saddle above Tennyson Inlet, 540 m, 15 Dec 1984–5 Jan 1985, AN, MT, *Nothofagus* spp forest, log & leaf litter; 1, Picton, Essens V, 1 Feb 1994, JTN, 2, Port Underwood Saddle, 3 km SSE Curious Cove, 15 Nov 1999, RABL, sifting leaf litter; 2, Tennyson Inlet, E side Duncan Bay, 30 m, 15 Dec 1984–5 Jan 1985, AN, MT, *Nothofagus* forest, decaying nikau palm leaf bases on ground; 1, Tennyson Inlet, W side Te Mako Bay, 125 m, 15 Dec 1984–5 Jan 1985, AN, MT, *Nothofagus*-podo-hdwd, window trap. **MB**. Kenepuru Sd, Mt Robinson Ridge, 13 Mar 1970, JIT; 2, NE Havelock, nr Portag, Mistletoe Bay Res. 26 May 1982, S&JP, beech forest litter (1 MHNG); 4, Pelorus Bridge, 10 Oct 1964, GK, litter 64/10; 17 Jun 1964, JIT, litter; 15 Sep 1964, J. I. Townsend, litter; 1, Pelorus Bridge SR, 60 m, 15 Nov 1984–4 Jan 1985, AN, MT, leaf and log litter forest hdwd podocarp forest; 1, Titirangi, 22 Oct 1969, F. A. Alack, litter 69/74; 1, Upper Wairau Val. SE side Wairau R, 2400' opp Rowans Well, 7 Sep 1966, JIT, litter *Nothofagus solandri* forest. **NN**. 1, 15 mile Ck, 30 km SW Collingwood, 23 May 1982, S&JP (5 MHNG); 2, Cable Bay, Maori Pa, 23 Jul 1964, J. I. Townsend, litter 64/64; 1, Collingwood, Aoreere V, Kaituna R, 3 Apr 1964, JIT, litter 64/35; 1, Dun Tk Saddle, Wooded Peak, 17 Sep 1971, GWR; 4, Dun Mt, 31 Aug 1966, AKW, 17, Dun Mt Tk, 6 Nov 1969, JCW, litter; 6 Dec 1969, GWR, litter; 5, Third House, 12 Jul 1966, JIT, moss in bush; 29 Mar 1966, JIT, moss 66/120; 14 Sep 1971, GWR, litter; 1, Dun Mt, Mineral Belt, 18 Nov 1964, JIT, moss 64/134; 1, Dun Tk, 14 Feb 1942, ESG; 9, Dun Tk Saddle, Wooded Peak, 14 Sep 1971, GWR, litter (3 MHNG); 11, Kaihoka Lakes, 20 May 1982, S&JP, nikau palm forest litter (5 MHNG); 9, Mangarakau, 50 m, 20 May 1982, S&JP, mixed forest litter; 9, Maungatapu Saddle, 2300', 15 Feb 1967, JIT, litter; 1, Pakawau SF, 28 May 1971, JSD, moss; 1, Patarau, 18 Aug 1964, ESG; 1, Saddle Hill, Doubles Tk, 770 m, 31 Dec 1984, AN, MT, *Nothofagus* spp forest, berlese leaf & log litter, forest floor; 1, Takaka Dist, Paramahoi, 26 Oct 1965, L. P. Marchant, litter 65/524; 1, Tennyson Inlet, 480 m, 27 May 1982, S&JP, beech forest litter; 8, Upper Maitai, 3 May 1950, ESG; 18 Mar 1950, ESG; 2, West Haven, 1 Apr 1965, G. W. Ransay, litter 65/292; 3, West Haven Inlet, Knuckle Hill, 2 Mar 1970, JSD, litter (1 MHNG); 1, Whangamoa, 13 Oct 1966, trap #2.

*Baocera hillaryi* new species (p. 33)

2 paratypes. **South Island: NN**. 2, Karamea, Oparara R, 27 Apr 1963, J. I. Townsend, litter 63/14 (1 MHNG).

*Baocera karamea* new species (p. 34)

3 paratypes. **South Island: NN**. 3, Karamea Bluff, 9 Feb 1999, RABL, RJBH, berlesate, RL275 (1 MHNG).

*Baocera punctatissima* new species (p. 34)

136 paratypes. **South Island: SD**. 1, Elie Bay, 30 Jul 1944, A. C. O'Connor, leafmould; 1, Ship Cove, 27–30 Nov 1972, J. McCurney, litter 72/265; 2, **BR**. 5, 14 miles East of Lewis Pass, 19 Nov 1961, GK, litter 61/4. **KA**. 1, Hapuku River, 3500', 25 Mar 1965, N. A. Walker; 2, Oaro, 17 Mar 1979, JWE, litter, coastal broadleaf; 21 Sep 1981, RME, coastal broadleaf forest litter; 1, SH1, 4 km N Conway R Bridge, 16 Sep 1977, RME, *Nothofagus* litter; 4, Upper Clarence River, Williams Stream, 30 Oct 1962, JIT, litter. **MC**. 4, Ashley Gorge, 12 Feb 1962, G. F. Woods, litter 62/9 (1 MHNG); 1 Mar 1965, N. A. Walker, litter 65/93; 1, Banks Peninsula, Hay Scenic Res, Pigeon Bay, 25 m, 11 Dec 1984–22 Jan 1984, AN, MT, podocarp-hdwd forest, berlese leaf & log litter, forest floor, 702; 7, Banks Peninsula, Hinewai Res, 7 Feb 1995, B. Brown, *Nothofagus fusca* forest (LUNZ); 7 Feb 1995, JWMM, litter ex fronds frm base of ferns; 4, Banks Peninsula, Kennedy's Bush, 15 Aug 1966, A. D. Lowe, forest litter; 1, Banks Peninsula, Peraki Saddle SR, 500 m, 11 Dec 1984–22 Jan 1985, AN, MT, hdwd-podocarp forest, berlese leaf & log litter, forest floor, 701; 2, Banks Peninsula, Prices V, 8–22 Nov 1989, JWE, yellow pan trap; 12, Banks Peninsula, Quail I, 1 Feb 2000, M. H. Bowie, pit traps; 11 Nov 1998, M. H. Bowie, pit traps; 7 Dec 1998, M. H. Bowie, pit traps; 11 Jan 2000, M. H. Bowie, pit traps; 3, Banks Peninsula, S of Little River, 5 Sep 1966, A. D. Lowe, litter under *Leptospermum*; 1, Cass, 4 Oct 1962, JIT, litter 62/12; 2, Christchurch, Sugarloaf, 22 May 1993, JTN; 7, Coopers Knob Res, 9 Nov 1977, M. R. Butcher, pitfall trap; 22 Nov 1977, M. R. Butcher, pitfall trap; 8–22 Nov 1978, M. R. Butcher, pitfall trap; 8, Kaituna Valley, 12 Sep 1954, R. R. Forster, 54/1; 4, Banks Peninsula, Kaituna, 28 Aug 1964, GK, litter 64/81; 3, Mt Algidius, 853 m, 16 Mar 1965, GWR, litter (MHNG); 5, Mt Hutt, 12 Apr 1912, T. Broun Collection, rata; 2, McClellands [=McLennans Bush], 25 Mar 1912, T. Broun Collection; 1 Apr 1936, E. Fairburn; 1, Mt Hutt Forest, 27 Dec 1997, JTN, in forest litter; 11, Mt Hutt, 1000 m, Scott Saddle, 27 Nov 1981, RME, litter; 3, Mt Hutt, Scott Saddle, 17 Jan 1999, JTN, in *Nothofagus* litter; 26 Dec 1999, JTN, amongst dead leaves from flax in forest; 3, Jit Somers, 12 Feb 1962, G. F. Woods, litter 62/9; 1, Mt Somers, 457 m, 20 Jan 1964, JIT, litter 64/4; 2, Mt Somers, Bowyers Stream, Sharpin Falls, 2 Feb 1976, GWR, litter 76/18; 14, Mt Somers, Petrifying Creek, 610 m, 2 Feb 1976, GWR, litter 76/37; 2, Peel Forest, 24 Oct 1983, JWE, litter from mature podocarp forest; 3 Feb 1953, A. E. Brookes collection; 2, Port Hills, Sign of the Kiwi, 12 Nov 1954, J. H. E. McAllum; 3, Prices Valley, 24 Mar–3 Apr 1981, JWE, yellow pan trap; 2, Pudding Hill, 4 May 1912, T. Broun Collection; 1, Rakaia, Nth Bank of Pudding Hill Str, 9 Sep 1966, A. D. Lowe, forest litter. **SC**. 3, Geraldine, Te Moana, 7 Feb 1953, A. E. Brookes, leafmould. **DN**. 4, Oamaru, Glen Warren Res, 22 May 1998, JTN, from bush litter. ?**DN**. 1, Moa (?Moa Flat), 20 Oct 1913, T. Broun Collection. No locality data, T. Broun Collection, 3539.

*Baocera sternalis* Broun, 1914 (p. 35)

20 specimens. **South Island: SD**. 5, Outer Chetwode Is, Te Kakaho, 11–16 Feb 1988, M. H. Bowie, yellow pan trap in shoreline vegetation; C. A. Muir, yellow pan trap in flax; C. A. Muir, litter under flax & ferns; 1, Queen Charlotte Sd, Bay of Many Coves, 6 Jan 1993, JWMM, in litter from *Nothofagus truncata* / mixed broadleaf forest. **KA**. 10, 7 km N Oaro, 9 Jan 1998, RABL, C. Carlton, *Coprosma*, *Macropiper* leaf litter; 3, Puhipuhi Res, Kairoua, 13 Oct 1966, AKW, 66/333 (1 MHNG). **MC**. 1 (lectotype), McLennan, 23 Apr 1912, Broun (BMNH).

*Baocera tekoiti* new species (p. 36)

232 paratypes. **North Island: ND**. 8, Hen & Chicken Is, Coppermine I, 28–31 Oct 1968, JCW, litter (MHNG); 2, Mair Park, Whangarei, 17 Aug 1977, GK, litter and wood (MHNG); 1, Mangamuka Ra, 17 Oct 1962, R. A. Cumber, litter; 2, Mangamuka Saddle, 400 m, 22 Sep 1976, GK; 2, Mangataipa SR, nr Mangamuka Bridge, 20 m, 29 Nov–5 Dec 1984, AN, MT, mixed hardwood forest, leaf & log litter, forest floor; 4, Mokohinau Is, Fanal I, 1 Mar 1978, GK, litter 78/114; 1, Mt Manaia, Whangarei Heads, 14 May 1970, B. M. May, *Vitex lucens* litter; 2, Ngaioatonga SR Russell Walkway, 12 Jan 2000, RABL, sifted leaf litter; 1, Parahaki Park, 5 Nov 1981, GK, litter & decayed wood 81/127; 1, Puketiti SF, 21 Jan 1972, GWR, litter; 2, Tangihua Ra, Mt Horokaka, 518 m, 16 Aug 1977, JSD, litter 77/97; 1, Waipoua Forest, 10 Jun 1966, JIT, litter 66/170; 1, Whangarei, 28 May 1968, R. A. Cumber, leaf litter. **AK**. 6, Bethells, Matuku Res, 21 Oct–25 Nov 1983, GH & P. A. Maddison, pit trap 2; 26 Jul–20 Aug 1983, GH & P. A. Maddison, pit trap 2; 1, Birkenhead Kauri Park, 4 Oct 1978, B. M. May; 1, Clevedon, A. E. Brookes collection; 1, Clevedon, Dudas Bush, 27 Nov 1982, P. A. Maddison, litter 82/127; 1, Duck Creek, 15 Dec 1999, GH, litter 99/70; 2, Epsom, 12 Feb 1912, T. Broun Collection; 1, Hunua Ra, 21 Dec 1962, GK, forest litter (MHNG); 1, Hunua Ra, 450 m, 4 Jan 1973, B. M. May, litter 73/2; 1, Kerr Taylor SR, 15–22 Dec 1998, P. Paquin, N. Duperré, pit traps; 4, Lynfield, 3 Oct 1976, GK, coastal litter; 24 Feb 1979, GK, litter; 5 Oct 1980, GK, coastal

litter; 5, McElroy SR, 15 Dec 1999, GH, litter 99/67; 1, Mill Bay, Manukau Harbour, 8 Jan 1976, L. L. Deitz, litter 76/37; 1, Mt Dome, 7 Mar 1978, S&JP (MHNG); 4, Noises Is, Otatai, 27 Aug–25 Oct 1979, G. H. C. F. Butcher, M. F. Tocker, B. Bradshaw, pit trap 2; 7 Dec 1979–20 Feb 1980, JCW, C. F. Butcher, D. Cunningham, pit trap 2; 2, Omeru SR, 15 Dec 1999, GH, litter 99/74; 2, Papakura, Kirks Bush, 26 May 1992, JTN; 5, Pohuehue SR, 24 Feb–2 Mar 1999, P. Paquin, N. Duperre, pit traps; 17 Nov 1999, GH, litter 99/44; 8–15 Dec 1998, P. Paquin, N. Duperre, pit traps; 1, Tawharanui RP, 22–29 Dec 1998, P. Paquin, N. Duperre, pit traps; 5, Waitakere Ra, Cascade-Kauri Park, Up. Kauri Tk, 170 m, 8 Dec 1984–25 Jan 1985, AN, MT, kauri-podo-hdwd, window trap; 1, Warkworth, Avic Miller SR, 14 Oct–17 Nov 1999, GH, pit traps; 2, Warkworth, Dome SF, 330 m, 15–21 Mar 1978, S&JP; 7, Wilsons SR, 8–15 Dec 1998, P. Paquin, N. Duperre, pit traps; 1 Apr–13 May 1999, GH, pit traps; 13 May–15 Jun 1999, GH, pit traps; 14 Sep–15 Oct 1999, GH, pit traps; 15 Oct–17 Nov 1999, GH, pit traps. **CL**. 1, Cuvier I, Lookout Spur, 28 Feb 1982, GH, litter 82/39; 1, Nikau Gorge, 27 Feb 1982, GH, litter 82/35; 1, Northwest Ridge, 26 Feb–2 Mar 1982, GH, pit trap 10; 2, Shooters Ridge, 2 Mar 1982, GH, litter 82/43; 1, Whau Saddle, 1 Mar 1982, GH, litter 82/42; 1, Great Barrier Is, Mt Hobson Summit, 621 m, 11 Apr 1982, JCW, litter 82/49; 1, Rangiahua Is, Broken I, 5 Jan 1985, A. B. Grace, litter 85/3; 3, Little Barrier I, 7 Apr 1984, C. T. Duval, sifted litter 84/62; 29 Dec 1931–10 Jan 1932, A. E. Brookes Collection; 1, 310 m, 4 Dec 1978, B. M. May, litter 78/283; 1, Awaroa Stream Ridge, 4 Oct 1975, B. M. May, litter 75/197; 1, lower Pohutukawa Flat, 3 Oct 1975, B. M. May, litter 75/195; 2, upper Pohutukawa Flat, 3 Oct 1975, B. M. May, litter 75/196; 1, Manaia Hill, 15 Mar 1967, R. A. Cumber, leaf litter; 1, Mercury Is, Middle I, 19 Feb 1984, GH, litter 84/29; 23, Mercury Is, Stanley I, 23 Nov 1972, GWR, litter 72/220; 1, Mt Moehau, 600 m, 16 Oct 1980, JCW, litter 80/89; 2, Mt Moehau, track, 11 Apr 1999, RABL, E. Hilario, sifted leaf litter 99/22; 2, Rakitu I, 7 Jan 1981, L. Roberts, litter 81/3; 7, Red Mercury Is, 24 Nov 1972, GWR, litter 72/227. **WO**. 1, Mahoenui, Gribbons Rd, 26 Jun 1977, GWR, litter 77/78; 2, Mt Karioi near base, 11 Oct 1981, C. F. Butcher, litter 81/96; 2, Okauia, 30 Dec 1945, A. E. Brookes Collection. **BP**. 1, Orete Forest, Te Puia Hut Bush, 19 Oct 1992, JSD, litter, moss & liverworts 92/67; 1, Papatea, 5 Nov 1993, RCH, litter 93/116; 1, Raukumara Ra, Motu Rd, 600 m, 27 Feb 1979, B. M. May, litter 79/35; 2, Rereauri, 9 Mar 1993, JSD, litter & moss 93/33; 2, Rereauri, Beech Ridge, 4 Dec 1992, GH, litter 92/89; 5, Rotorua, Mamaku Ra, 18 Jan 1972, GWR, litter; 2, Rotorua, Waimangu SR, 21 Nov 1974, AKW, litter 74/86; 4, Te Koau, 130 m, 15 Mar 1993, JSD, litter 93/45; 1, Tikitiki Stm, Horohoro SF, Mamaku Plateau, 24 Jul 1976, JSD, Litter 76/57 (MHNG); 1, Whakatane, 10 Oct 1965, M. S. Luxton, litter. **GB**. 2, East Cape, Light-house Tk, 30 Apr 1993, GH, litter 93/102; 3 Nov 1995, GH, litter & debris 95/16; 1, East Cape, Rangiatea, 28 Nov 1992–3 Feb 1993, RCH, pit traps; 5, L. Waikaremoana, 17 Jan 1972, GWR, litter 72/19; 2, Taikawakawa, 21 Sep 1992, GH, RCH, sifted litter 92/58. **TK**. 1, Mt Egmont, 29 Nov 1970, A. W. Don, litter (MHNG); 1, Mt Egmont NP, Nth Egmont Rd, 24 May 1986, C. H. C. Lyal, leaf litter; 1, Stratford Mtn House, 916 m, 23 May 1986, C. H. C. Lyal, leaf litter; 1, Whangamomona Saddle, 1025', 31 Oct 1967, B. M. May, *P. totara*, *B. tawa*, *Weinmannia* & *Knighitia*. **TO**. 1, 10 m N of Waiouru, Desert Rd, 17 Feb 1973, RME, beech litter; 1, Ahimanawa Ra, 609 m, 14 Jan 1972, GWR, litter; 1, Desert Road Summit, 26 Nov 1985, R. C. Craw, moss 85/69; 1, Erua, National Park, 16 Dec 1961, GK, litter; 1, Huiarau Ra, 17 Jan 1972, GWR, litter; 1, Kaimanawa North Forest Park, 850 m, 11 Mar 1978, JSD, litter & rotten wood 78/117; 2, Kaimanawa Ra, 975 m, 29 Mar 1975, B. M. May, litter 75/192; 1, Ohakune, 26 Jan 1982, C. F. Butcher, sifted litter 82/14; 1, Ohakune Mtn Rd, R. C. Craw, sifted litter 85/67; 5, nr Mangowhero Lodge, 28 Nov 1985, R. C. Craw, sifted litter 85/70; 1, Ohakune, Jubilee Park, 13 Jul 1996, JTN, in forest litter mainly *Nothofagus*; 5, Opepe Res, E Taupo, 14 Jan 1972, GWR, litter (MHNG); 2, Tongariro NP, 850 m Mt Ruapehu, 9 km NE Ohakune, 22 Feb 1992, D. Burckhardt; 1, Tongariro NP, Whakapapanui Stream, 28 Nov 1965, JIT, moss 65/634; 1, Turangi, Mangatawai Stm, 13 Jan 1972, GWR, litter; 1, Turangi, Pihanga SR, 13 Jan 1972, GWR, litter; 5, Wairere Stream, Mt Ruapehu 3800', 25 Feb 1965, JIT, moss under beech trees (MHNG); 1, Waituhi Saddle Rd, 670 m, 9 Oct 1979, JSD, litter & bryophytes 79/92; 1, Whanganui Forest, Edge of Whenuakura Flats, 12 Oct 1979, JSD, litter & bryophytes 79/93. **HB**. 2, Boundary Stream SR, 20 Oct 1984, C. F. Butcher, sifted litter & rotten wood 84/71; 1, Tangoio, White Pine Bush Res, 24 Dec 1983, JCW, sifted wood mould 83/147 (MHNG). **RI**. 1, Pohangina Valley, Totara Reserve, 4 Jan 1975, JCW, litter 75/28. **WN**. 1, N Upper Hutt, 22 Apr 1965, N. A. Walker, litter 65/183. **WA**. 1, Tuhiatarata, 18 Dec 1983, H. P. McColl, litter 47/83. **South Island: SD**. 14, 3 km NW Picton, Queen Charlotte Drive, 26 May 1982, S&JP, litter 82/23 (6 MHNG); 1, 30 km NE Havelock nr Portag Mistletoe Bay Res, 26 May 1982, S&JP, beech forest litter; 1, Ship Cove, 27–30 Nov 1972, J. McBurney, litter 72/265; 1, Tennyson Inlet, 22 May 1964, JIT, forest litter. **KA**. 1, Puhipuhi Res, Kaikoura, 11 Feb 1962, JIT, litter. 233 specimens.

### *Baeocera tensingi* new species (p. 37)

2 paratypes. **South Island: BR**. 1, Tawhai SF, 9 Nov 1971, JSD, litter 71/128; 1, Victoria FP, Rahu SR, Rahu Ck, 700 m, 18 Feb 1992, D. Burckhardt.

### *Baeocera tenuis* new species (p. 37)

23 paratypes. **North Island: AK**. 2, Kohukohunui, 550 m, 30 Mar 1974, GK, litter 74/199; 4, Waitakere Ra, Cascade-Kauri Park, up. Kauri Tk, 170 m, 8 Dec 1984–25 Jan 1985, AN, MT, kauri-podo-hdwd, window trap. **CL**. 1, Great Barrier I, Mt Hobson, Upper Kauri Dam, 11 Apr 1982, moss & litter 82/51; 1, Kirikiriki Saddle, 27 Oct 1981, C. F. Butcher, Litter 81/115. **WO**. 1, Te Mata Bridal Veil Falls, 19 Sep 1981, C. F. Butcher, litter 81/88 (MHNG). **BP**. 1, Mamaku/Kaimai Ra, Otanewaimuku, 640 m, 21 Sep 1981, B. M. May, litter 81/91. **GB**. 1, Kakanui, 350 m, 30 Apr 1993, JSD, litter 93/105; 4, L. Waikaremoana, 17 Jan 1972, GWR, litter 72/19; 1, Mt Maungapohatu 762 m, 3 Mar 1971, JIT. **TO**. 2, Kaimanawa SF, 26 Mar 1978, S&JP, litter. **HB**. 1, Ahimanawa Ra, 14 Jan 1972, GWR, litter 72/11; 1, Kaweka Ra, Makahu Hut, 975 m, 13 Mar 1980, C. F. Butcher, litter 80/38. **WN**. 1, Levin, 6 Nov 1980, C. F. Butcher, litter 80/103; 1, Tararua Ra, 19 Nov 1968, S. Elridge, litter (MHNG). Area uncertain. 1, Manuka Bush, 11 Jan 1931, A. E. Brookes Collection.

### *Brachynopos apicellus* (Broun, 1880) (p. 20)

23 specimens. **North Island: ND**. 1, Kaeo Hill, 10 Jul 1972, R. A. Cumber; 1, Mt Manaia, Broun Coll BMNH; 1, Omahuta Kauri Sanctuary, 21 Sep 1976, GK, decayed wood litter 76/73; 1, SH12, Waipoua SF, 20 Sep 1977, D. W. Helmore, rotten stumps/trees, litter 77/102; 1, Te Karoa SR, Fern Flat, 15 Feb 2000, RABL, GH, RJBH, leaf litter; 2, Waipoua, 24 Nov 1980, GK, on *Agathis australis* log; 2, Waipoua Forest, Waipoua Stm, 16–21 Mar 1978, S&JP, bracket fungi (MHNG); 1, Waitangi SF, 2 Nov 1981, GK, litter & decayed wood 81/117; 2, Whangarei, Mair Park, 17 Aug 1977, GK, litter & wood. **AK**. 1, Duck Creek, 15 Dec 1998, GH, litter 99/70; 4, Lynfield, 10 Nov 1993, GK; 29 Dec 1993, GK (MHNG); 1, Pohuehue SR, 8–15 Dec 1998, P. Paquin, N. Duperre, pit traps; 2, Waitakere Ra, Cascade Kauri Park, Andersons Tk, 85 m, 23 Nov–8 Dec 1984, AN, MT, window trap; 8 Dec 1984–25 Jan 1985, AN, MT, window trap. **BP**. 1, Orete Forest, Te Puia Hut, 25–29 Jan 1993, RCH, pan trap; 1, Te Koau, Howells Watching Dog Tk, 240 m, 24 Oct 1992, JSD, litter 92/78. **GB**. 1, Taikawakawa, 1 May 1993, GH, ex *Rhopalosiphum sapida*. 1, no locality data, no data, F. W. Hutton Collection (LUNZ); 1, Oruru (??not found), A. E. Brookes Coll.

### *Brachynopos latus* Broun, 1881 (p. 21)

988 specimens. **Offshore Islands: TH**. 24, Great I, Tasman Valley, Nov 1970, GK, litter (6 MHNG); 5, Castaway Pk, 1 Nov 1970, GWR (1 MHNG); 6, bush W of trig, 8 Dec 1996, JWMM, ex sieved litter from *Brachyglottis/Kunzea* forest; 3, Castaway Camp, 9 Dec 1996, JWMM, ex sieved litter from *Brachyglottis/Kunzea* forest. **North Island: ND**. 1, 1.5 mls N Pandora Forest 400'–700', 2 Jan 1950, I. V. Gardiner; 3, Bay of Islands, Waikare, 12 Oct 1967, R. A. Cumber, leaf litter; 2, Brynderwyn, 26 Feb 1959, R. A. Cumber; 5, Cape Reinga, Tapotupotu Bay, 4 May 1999, RABL, GH, RJBH, litter, RL406; 3, Fern Flat, Te Karoa SR, 15 Feb 2000, RABL, GH, RJBH, leaf litter, 538; 4, Hen & Chicken Is, Coppermine I, 28–31 Oct 1968, JCW, litter; Oct 1968, G. Rogers, ex midden sample; 1, E Chicken I, 22 Nov 1965, litter; 1, Lady Alice I, 1 Jan 1982, L. Roberts, R. Hay, litter 82/5; 1, 30 m, 18 Oct 1971, B. M. May, litter 71/119; 1, Kaeo, 19 Sep 1958, R. A. Cumber; 1, Kaeo Hill, 10 Jul 1972, R. A. Cumber; 4, Kaiwhetu, N of Hihii, Krause Property, 15 Feb 2000, RABL, GH, RJBH, leaf litter, 533; 1, Kamo, 19 Jan 1966, AKW, litter; 1, Kohoronaki, 270 m, 24 Nov 1982, GK, sifted litter & decayed wood 82/123; 1, Mangamuka, 20 Jan–30 Mar 1999, RABL, RJBH, GH, FIT A, 366; 1, Mangamuka Gorge SR, 12.0 km NW Mangamuka, 400 m, 25 Nov–5 Dec 1984, AN, MT, hdwd podocarp forest, window trap, 683; 1, 6.6 km NW Mangamuka, 70 m, 25 Nov 1984, AN, MT, hdwd podocarp forest, sifted ex rotting epiphytes at treefall, 682; 1, Mangamuka Summit, 400 m, 13 Dec 1976, B. M. May, litter 76/108; 9, Mangatapere, 20 Jan 1972, GWR, litter; 2, Maunganui Bluff SR, 410–460 m, 3 Dec 1984, AN, MT, coastal mixed hardwood forest, leaf & log litter, forest floor, 697; 1, Mt Camel, 20 Oct 1982, C. F. Butcher, sifted litter 82/100; 1, Mt Manaia, 300–400 m, 4 Nov 1981, GK, litter & decayed wood 81/121; 1, Ngaioatonga Res Walkway, 3 Nov 1981, GK, litter and decayed wood 81/118; 1, Ngaioatonga SF, 20 Jan 1972, GWR, litter 72/52; 10, Ngaioatonga SR Russell Walkway, 3 Nov 1981, GK, litter & decayed wood 81/120; 12 Jan 2000, RABL, sifted leaf litter, 507; 1, North Cape, 18 Feb 1967, R. A. Cumber, leaf litter; 5, Omahuta Forest, Omahuta Kauri Sanctuary, 340 m, 29 Nov 1984, AN, MT, kauri-podocarp-hdwd, leaf & log litter, forest floor, 693; 29 Nov–5 Dec 1984, AN, MT, kauri-podocarp-hdwd, window trap, 693; 1, Omahuta Kauri Sanctuary, 21 Jan 1972, GWR, litter; 1, Paihia, 20 Jan 1972, GWR, litter 72/45; 1, Paihia



- Opua turnoff, 20 Jan 1972, GWR, litter 72/46 (MHNG); 1, Paihia, Opua Forest, 12 Jan 2000, RABL, RJBH, ex *Stereum* sp. [night], 509; 2, Parahaki Park, 5 Nov 1981, GK, litter & decayed wood 81/127; 1, Parakao, nr Mangakahia R, 19 Oct 1962, R. A. Cumber; 4, Parua Bay, 4 Nov 1981, GK, litter & decayed wood 81/124; 4 Dec 1937, E. Fairburn; 32, Poor Knights Is, Aorangi, Puweto Valley, 11 Sep 1980, JCW, litter 80/70; 1 Dec 1980, GK, sifted decayed wood 80/128; 2 Dec 1980, GK, sifted litter on plateau 80/129; 3–10 Dec 1980, JCW, pit trap 80/177; 4 Dec 1980, GK, sifted litter 80/133; 5 Dec 1980, GK, soil from burrow *Puffinus bulleri* 80/135; 6 Dec 1980, GK, sifted rotten wood 80/140; 8 Dec 1980, GK, sifted litter 80/143; 9 Dec 1980, GK, sifted litter and decayed wood 80/146; 10 Dec 1980, GK, sifted litter 80/148; 14 Nov 1981, JCW, sifted wood mould 81/131; 4, Puketiki Forest, Nature Track, 13 Jan 2000, RABL, RJBH, ex leaf litter, 511; 1, Puketiki Nature Tk, 13 Jan 2000, RABL, RJBH, ex *Aseroe*, 512; 15, Puketiki SF, 21 Jan 1972, GWR, litter 72/55 (4 MHNG); 31 Mar 1999, RABL, RJBH, GH, sifted leaf litter, 378; 1, Ranfurly Scenic Reserve, 29 July 1998, RABL, RJBH, under rotting wood, rain pool, 201; 2, Russell Forest, Ngaioitonga Scenic Res, 22 Jan 1999, RABL, GH, RJBH, *Phellinus* sp, 268; 1, SH12, Waipoua SF, 20 Sep 1977, L. L. Deitz, mosses & liverworts 77/103; 1, Spirits Bay, Pandora, 11 Nov 1967, JIT, ex ferns; 1, Spirits Bay, Waitanouiu Stm, 7 Nov 1967, J. McBurney, litter; 3, Tauranganui Estate, nr Kaiwhetu, 19 Nov 1985, B. A. Holloway, litter 85/57a; 1, Te Huka, Tom Bowling Bay, 15 Nov 1967, JIT, at night; 1, Te Paki Coastal Reserve, 19 Oct 1982, C. F. Butcher, sifted litter 82/97; 2, Te Paki Trig, 23 Nov 1982, GK, sifted litter & decayed wood; 1, Trounson Kauri Park, 11 km S Waipoua, 6–16 Dec 1976, pit trap; 1, Tutukaka, 12 Sep 1980, JCW, litter and nest 80/74; 3, Unuwhao, 270 m, 25 Nov 1981, GK, litter & decayed wood 81/125; 1, Waikare, 24 Sep 1958, R. A. Cumber; 2, Waipoua, 13 Jun 1966, JIT, larvae under bark; 14 Jun 1966, JIT, under pine bark; 1, Waipoua Forest, 24 Nov 1997, JTN, in leaf litter; 1, Waipoua Forest, Headquarters Rd, 16 Dec 1976, B. M. May; 4, beside river, 16 Dec 1976, V. A. May, litter 76/110; 3, Waipoua Stm, 70 m, 16–21 Mar 1978, S&JP, kauri forest, berlese forest litter; 5, Waipoua SF, 7–16 Jun 1966, JCW, in dead *Rhopalostylis sapida* sheath; 19 Jan 1972, GWR, litter; 2, vic Wairau Smt, 460 m, 27 Nov 1984, AN, MT, hwd podocarp forest, 668; 2, 0.8 km NW Wairau Summit, 350 m, 27 Nov 1984, AN, MT, hwd-podocarp forest, leaf & log litter, forest floor, 689; 27 Nov–6 Dec 1984, AN, MT, hwd-podocarp forest, window trap, 689; 3, 0.8 km S Waikohatu Stm bridge, 270 m, 28 Nov 1984, AN, MT, hwd-podocarp forest, berlese leaf & log litter, forest floor, 692; 28 Nov 1984, AN, MT, hwd-podocarp forest, berlese leaf & log litter, forest floor, 692; 28 Nov–6 Dec 1984, AN, MT, hwd-podocarp forest, window trap, 692; 4, 0.9 km E Forest HQ, 120 m, 26 Nov 1984, AN, MT, hwd-podocarp forest, leaf & log litter, forest floor, 686; 26 Nov–4 Dec 1984, AN, MT, hwd-podocarp forest, window trap, 686; 9, 1 km E Headquarters, 15 Apr 1980, JCW, litter 80/50; 5, Kauri Ricker Tk, 120 m, 26 Nov–11 Dec 1984, AN, MT, kauri-podocarp-hdwd, window trap, 684; 7, Toronui Tk, 120 m, 26 Nov–4 Dec 1984, AN, MT, kauri-podocarp-hdwd, window trap, 685; 5, vic. Wairau Summit, 460 m, 27 Nov–4 Dec 1984, AN, MT, hwd-podocarp forest, carrion trap [squid], 688; 27 Nov 1984, AN, MT, hwd-podocarp forest, berlese leaf & log litter, forest floor, 688; 1 Dec 1984, AN, MT, hwd-podocarp forest, on *Ganoderma* conk [brown pore surface], 688; 2, Waikohatu Stm, 27 Jan 1998, RABL, A. Davelos, kauri forest leaf litter, 177; 1, Waikohatu Stream Bridge, 300 m, 28 Nov–6 Dec 1984, AN, MT, kauri-hdwd-podocarp, carrion trap [squid], 690; 5, Waipoua Stm, 70 m, 16–21 Mar 1978, S&JP, forest litter, kauri forest; 1, Wairau Summit, 390 m, 14 Apr 1980, JCW, sifted litter 80/51; 8, 400 m, 27 Nov–6 Dec 1984, AN, MT, hwd-podocarp forest, carrion trap [squid], 687; 3, Waipoua Stm, 100 m, 19 May 1978, S&JP, litter; 2, Waipu, Broun Collection, 288; 9, Waitangi SF, 2 Nov 1981, GK, litter & decayed wood 81/117; 22 Sep 1981, R. Kleinpaste, litter 81/93; 3, Whangarei Falls, 14 Feb 2000, RABL, GH, RJBH, rotting wood, 531; 1, Whangarei Heads, Mt Manaia, 14 May 1970, B. M. May, *Vitex lucens* litter; 1, Whangarei, Mair Park, 17 Aug 1977, GK, litter & wood. AK, 4, Auckland, Dec 1908, Broun Collection; 25 Feb 1941, D. Spiller; 3, Auckland, Grafton Gully, 26–28 Feb 1978, SP, forest litter; 1, Awhitu Central, Kemp Rd, 28 Oct 1982, M. F. Tocker, litter 82/103; 27, Bethells, Matuku Res, 26 Jul–20 Aug 1983, GH & P. A. Maddison, pit traps; 20 Aug–19 Sep 1983, GH & P. A. Maddison, pit traps; 21 Oct–25 Nov 1983, GH & P. A. Maddison, pit traps; 7 Mar–16 Apr 1984, B. G. Bennett, M. F. Tocker, pit traps; 1, Cascades, 27 Aug 1981, JCW; 4, Clevedon, T. Broun Collection; 9 Jul 1958, R. A. Cumber; 1, Clevedon, Kawakawa Bay, 9 Jul 1958, R. A. Cumber; 1, Epsom, T. Broun Collection; 13, Grafton Gully, Auckland, 26 Feb–14 Mar 1978, SP, berlese, litter under fish heads; 26 Feb–14 Mar 1978, SP, bait trap [carrion]; 26–28 Feb 1978, SP, litter 1 MHNG; 1, Greenhitch, Nov 1947, Hipkins; 2, Howick, Broun Collection; 1, Hunua Falls, 2 Dec 1961, JCW, ex stems of *Cyathea*; 1, Hunua Ra, 2 Dec 1961, GK; 3, Hunua Ra, 150 m, 4 Jan 1973, B. M. May, litter 73/2; 30, Hunua Ra, Kohukohuni, 600 m, 30 Mar 1974, GK, litter 74/19; 3, Hunua Ra, Mangatangi, 8 Feb–8 Mar 1977, I. Barton, pit traps; 5 Apr–5 May 1977, I. Barton, pit trap 14; 5 May–5 Jun 1977, I. Barton, pit traps; 2, Hunua Suspension Bridge Tk, 10 Oct 1999, RABL, GH, ex *Phanerochaete sordida*, 437; 3, Hunua, Waharau Reserve, 23 May 1999, RABL, RJBH, leaf litter and fungi/berlesate, 412; 1, Kawau Is, Boyds Hill, 26 Feb 1984, JCW, ex rotten *Pinus* logs; 47, Lynfield, 23 Nov 1974, GK, litter 74/68; 23 Dec 1978, GK, *Gahnia*; 1 Jan 1979, GK, *Trametes cinnale* on *Knighitia*; 22 Apr 1979, GK; 4 May 1979, GK, rotten *Acacia decurrens*; 17 Nov 1979, GK, *Phormium cookianum*; 5 Apr 1980, GK, *Phellinus* fungus; 30 Apr 1980, GK; 15 May 1980, GK; 6 Jul 1980, GK, *Gahnia* litter coastal; 27 Jul 1980, GK, litter in stream; 24 Aug 1980, GK, litter; 8 Oct 1980, GK, coastal litter; 19 Apr 1981, GK; 26 Apr 1981, GK; 2 May 1981, GK; 11 Oct 1981, GK, litter 81/100; 2, Lynfield, Subritzky's Bush, 1 Mar 1979, GK, ex rotten *Melicthus*; 19 Mar 1977, GK, *Sophora* base; 75, Lynfield, Tropicana Drive, 9 Jun 1974, GK; 6 Jul 1974, GK, litter 74/39; 1 Sep 1974, GK, paddock; 14 Sep 1974, GK, litter 74/53; 28 Sep 1974, GK, litter 74/56; 20 Oct 1974, GK; 2 Nov 1974, GK, beating at night; 23 Nov 1974, GK, litter 74/63; 12 Feb 1975, GK, litter 75/12; 2 Mar 1975, G. Kuschel, 75/17; 2 Mar 1975, GK, litter 75/18; 15 Mar 1975, GK, litter 75/61; 13 Apr 1975, GK, litter 75/74; 25 Apr 1975, GK, litter 75/76; 25 Apr 1975, GK, litter 75/78; 4 May 1975, GK, litter 75/80; 17 May 1975, GK, trap; 13 Dec 1975, GK, ground plants; 27 Dec 1975, GK, blind weevil site (26 MHNG 1974–75); 8 May 1976, GK; 10 May 1976, GK, litter 75/106; 24 Jul 1976, GK, decayed wood; 31 Jul 1976, GK, nr ground; 28 Aug 1976, GK, ground plants; 3 Oct 1976, GK, coastal litter; 30 Oct 1976, GK; 6 Jan 1977, GK; 8 Jan 1977, GK, coastal; 19 Feb 1977, GK, streambed; 17 Apr 1977, GK, decayed wood; 7 May 1977, GK, decayed wood; 14 Jan 1979, GK, *Trametes cinnale* on *Knighitia*; 85, Lynfield, Wattle Bay, 24 Jan 1977, C. F. Butcher, pit trap nr log in bush; 30 Dec 1977, GK; 11 Feb 1979, GK, pine, in bark; 10–17 Mar 1979, GK; 6 Nov 1979, C. F. Butcher, ex pitfall trap (banana baited); 2 Mar 1980, GK; 5 Apr 1980, GK, on *Phellinus*; 21 Apr 1980, GK, rotten wood; 3 May 1980, GK, pit trap at fallen *Metrosideros*; 17 May 1980, GK; 29 Jun 1980, GK, litter at malaise trap 2; 29 Jun 1980, GK, litter at hollow *Metrosideros excelsa*; 19 Jul 1980, GK, litter, *Gahnia* at *Metrosideros excelsa*; 16 Aug 1980, GK, litter under *Gahnia*; 30 Aug 1980, GK, litter at *Gahnia*; 7 Sep 1980, GK, *Gahnia* litter; 22 Feb 1981, GK, in rotten *Melicthus ramiflorus*; 19 Nov 1987, GK, litter 87/17; 19 Nov 1987, GK, litter 87/18; 19 Nov 1987, GK, litter 87/19; 27 Nov 1991, M. A. & L. L. Ivie, GK, beating & under bark; 10 Nov 1993, GK; 8, Maketu Stm, 28 Dec 1972, B. M. May, litter 73/3; 5, Manurewa, Murphys Bush, 30 Aug 1977, GK, litter & wood; 2 May 1981, GK, rotten wood 81/59; 2, Manurewa, Olive Davis Reserve, 3–7 Aug 1983, JCW, pit traps; 1 Mt Dome, 7 Mar 1976, S&JP (MHNG); 4, Mt William, 25 Apr 1999, GH, RJBH, *Nothofagus* sifted litter, 385; 1, N of Maketu, 4 Jan 1973, B. M. May, litter 73/5; 5, Ponga Bush, 300 m, 4 Jan 1973, B. M. May, litter 73/1; 2, Pukapuka, 18 Mar 1959, A. C. Eyles; 5, Pukekohe, 9–16 Nov 1989, Heiss; 1, Riverhead, 12 Jul 1966, R. A. Cumber, leaf litter; 2, Riverhead Forest Reserve, 30 Aug 1982, P. A. Maddison, litter 82/72; 16 Jul 1983, P. A. Maddison, litter 83/81; 1, Swanson, 8 Feb 1942, D. Spiller; 6, Titirangi, 15 Jun 1946, M. W. Carter, ex fungus; 30 Jan 1915, T. Broun Collection; 31 Jul 1915, T. Broun Collection; 5, Waikowhai, Captains Bush, 10 Feb 1982, GH, Litter 82/3; 22 Sep 1986, GWR & P. A. Maddison, litter 86/17; 1, Waimauku, Kerr Taylor Res, 5 Jan 1998, RABL, C. Carlton, ex resupinate polypore; 1, Waitakere, 26 Oct 1914, T. Broun Collection; 6, Waitakere Ra, Apr 1955, A. G. Smith, litter; 6, Waitakere Ra, Cascade Kauri Park, up Kauri Tk, 170 m, 8 Dec 1984–25 Jan 1985, AN, MT, kauri-podo-hdwd, window trap, 680; 2, Anderson Tk, 85 m, 23 Nov–8 Dec 1984, AN, MT, hwd-podocarp, window trap, 681; 8 Dec 1984–25 Jan 1985, AN, MT, kauri-podocarp-hdwd, carrion trap [squid], 680; 1, Waitakere Ra, Fairy Falls Tk, 3 Apr 1960, K. A. J. Wise, ex dead nikau sheath; 1, Waitakere Ra, Kauri Park, 6 Dec 1980, A. W. Don, under rotting pond in bush, ants nest 80/127, ACC No 80/7; 1, Waitakere Ra, near city of Auckland, 17 Mar 1992, SLS, ex *Semonitis* sp. myxomycete, lot 6615; 1, Waitakere Ra, Nohoanga Scenic Res, 260 m, 8 Dec 1984–25 Jan 1985, AN, MT, hwd-podocarp forest, carrion trap [squid], 679; 1, Waitakere Ra, Cascade Tk, 21 Mar 1998, RABL, GH, sifted litter from fallen *Collospermum*, 180; 2, Waiwera, 12 Jul 1966, R. A. Cumber, leaf litter; 2, Warkworth, Dome St. Forest, 330 m, 15–21 Mar 1978, S&JP, berlese forest litter; 1, Wellsford, Dome Valley, 12 Jul 1966, R. A. Cumber, leaf litter. CL, 2, Coromandel Forest Park, Waiu Kauri Grove, 23 Mar 1998, SLS, *Arcyria demudata*, 9433; 2, Coromandel Range, 19 Jan 1972, GWR, litter; 2, Coromandel, Kauri Clump Forest, 13 Feb 1979, JSD, ex rotting logs on ground; 8, Coromandel, Mt Moehau Tk, 11 Apr 1999, RABL, E. Hilario, berlesate, 384; 5, Coromandel, Tapu-Coroglen Rd, Maumaupaki Tk, 17 Oct 1999, RABL, E. Hilario, berlesate, 438; 5, Cuvier I, 25 Feb–2 Mar 1982, GH, pan trap in fern & bracken; 1, 150 m, 24 Jan 1972, B. M. May, litter under shrubs (MHNG); 2, summit, 250 m, 24 Jan 1972, B. M. May, litter under *Nestegis apetata* (MHNG); 4, Main Ridge, 1 Mar 1982, GH, litter 82/41; 26 Feb–2 Mar 1982, GH, pit trap 6; 5, Nikau Grove, 27 Feb 1982, GH, dead flowers 82/34; 1, Northwest Ridge, 27 Feb 1982, GH, litter 82/36; 4, Radar Point, 27 Feb 1982, GH, litter 82/37; 1, Shooters Ridge, 2 Mar 1982, GH,

litter 82/43; 1, Whau Saddle, 1 Mar 1982, GH, litter 82/42; 1, Great Barrier I, Port Fitzroy, 8–12 Apr 1982, JCW, pit trap 82/54; 6, Kaiarara Valley, 12 Apr 1982, JCW, litter 82/52; 27 Nov 1957, JCW, ex flowering *Leptospermum scoparium*; 9, Little Windy Hill, 23 Oct–21 Nov 2002, K. Parsons, pitfall trap forest; 19 Dec 2002–26 Jan 2003, K. Parsons, pitfall trap forest; 26 Jan–25 Feb 2003, K. Parsons, pitfall trap forest; 17–21 Feb 2003, JWE, pitfall trap forest; 3, Mt Hobson, Upper kauri Dam, 11 Apr 1982, JCW, moss and litter 82/51; 1, Kaueranga V Rd, Wangaite Stm, 6 Dec 1993, A. Larochelle, litter 93/134; 1, Kirikirii Saddle, 27 Oct 1981, C. F. Butcher, litter 81/115; 1, Kopu Rd, 27 Sep 1967, R. A. Cumber; 2, Little Barrier I, Awaroa Stm Ridge, 4 Oct 1975, B. M. May, litter 75/197; 4, Pohutukawa Flat, 6 Dec 1978, litter 78/284; 1, Summit Tk, 7–10 Mar 1974, JCW, pit trap 5; 2, 335 m, 10 Mar 1974, JCW, litter 74/24; 1, 7 Apr 1984, C. T. Duval, sifted litter 84/62; 20, Mercury Is, Stanley I, 23 Nov 1972, GWR, litter 72/219; 23–24 Nov 1972, GWR, litter 72/221, 72/223, 72/224 (4 MHNG); 1, Mt Moehau, 457 m, Wards Bush, 1 Nov 1979, B. A. Holloway, litter 79/137; 2, 800 m, 21 Dec 1986, S. Kiener (MHNG); 1, nr Tairua Forest, 30 Sep 1965, A. E. Marsack, litter; 3, Rakitu I, 7 Jan 1981, L. Roberts, litter 81/3; 2, Tapu Hill, 9 Jul 1958, R. A. Cumber; 1, Tapu-Coroglen Rd summit, 23 Nov 1995, JTN, in forest litter; 1, Whangapoua, 347 m, 31 Aug 1975, AKW, litter 75/161; 4, Whitianga, 29 Jan–2 Feb 1987, S. Kiener (MHNG). **WO**, 3, 5 ml NE Awakino, 16 Apr 1965, N. A. Walker, litter; 1, Awakino Mouth, 13 Sep 1960, R. A. Cumber; 2, Hapuakohe Ra, 3 km SW Kaihere, 29 Jan 1984, JCW, sieved wood mould 84/8; 3, Herangi Ra, 500 m above Mangatoto Saddle, 9 Dec 1982, JSD, litter 82/136; 1, Kaimai Ra, 18 Jan 1972, GWR, litter 72/30 (MHNG); 3, Mahoenui, Gribbons Rd, 26 Jun 1977, GWR, litter 77/81; 2, Mt Karioi near base, 11 Oct 1981, C. F. Butcher, litter 81/96; 3, Mt Pirongia, 800 m, Tk 2 to Whararoua, 9 Jun 1977, B. A. Holloway, sifted litter 77/61; 2, 962 m, 16 Jan 1977, AKW, litter; 1, Ngauruwahia, C. E. Clarke Coll (BMNH); 2, Okauia, 28 Dec 1947, A. E. Brookes Collection, leaf mould; Jun 1914, T. Broun Collection; 2, Pirongia, T. Broun Collection, 289; Dec 1909, Broun Collection; 1, S. Waitomo, 16 Apr 1965, N. A. Walker, litter 65/156; 1, Te Anga, Taumatatara, 31 Oct 1967, B. M. May, tawa & *Hedycarya* (MHNG); 2, Upper Kaimai, Matamata, 26 Dec 1943, A. E. Brookes; 3, Waipuna Res, nr Waitomo, 28 Oct 1977, A. R. Ferguson, litter 77/134. **WO/BP**, 4, Kaimai Ra, 18 Jan 1972, litter; 3, no locality data, H. Swale; T. Broun Collection, 288. **BP**, 1, Hicks Bay, 26 Nov 1992–3 Feb 1993, RCH, pit traps; 1, Horohoro SF, Mamaku Plateau, 550 m, 27 Jul 1976, JSD, litter 76/45; 1, Kaimai, 12 Apr 1941, A. E. Brookes Collection; 2, Kaimai Ra, Leyland Tramline 427 m, 22 Sep 1981, B. M. May, litter 81/92; 26, Lottin Pt Rd, Waenga Bush, 16 Sep 1992, RCH (1 MHNG); 20 Oct 1992, JSD, rotten wood, moss & liverworts; 20 Oct 1992, JSD, pit traps; 20 Oct–24 Nov 1992, GH, pit traps; 24 Nov 1992–27 Jan 1993, RCH, pit traps; 27 Jan 1993, JIT, litter; 27 Jan–11 Mar 1993, JSD, pit trap; 10 Mar 1993, JSD, litter 93/37; 1, Mamaku Kaimai Ra, Otanewainuku, 640 m, 21 Sep 1981, B. M. May, litter 81/91; 1, Mamaku Plateau, Tarukenga Scenic Res, 23 Dec 1977, JSD, on polypore and under fungus covered log, *Beilschmedia tawa*; 3, Mamaku Ra, 18 Jan 1972, GWR, litter; 1, Mt Te Aroha, 800 m, 27 Feb 1992, D. Burckhardt, silver beech forest; 1, 950 m, 27 Feb 1992, D. Burckhardt, silver beech forest, #69; 1, 1000 m, 3 May 1951, A. E. Brookes Collection; 2, Mt Te Aroha, Dog Kennel Flat, 13 Nov 1983, JCW, in lichen; 3, Orete Forest, Te Puia Hut, 13 Apr 1992, GH (1 MHNG); 25 Jan–8 Mar 1993, JSD, pit traps; 25 Jan 1993, JSD, litter 93/3; 10, Papatea, 18 Oct 1992, JSD, sifted litter 92/66; 13–23 Nov 1992, GH, pit traps; 31 Jan–15 Mar 1993, JWM, pitfall trap, mixed lowland broadleaf forest; 8 Mar 1993, JSD, litter 93/32; 9 Mar–28 Apr 1993, JSD, pit traps; 28 Apr 1993, JSD, litter 93/94; 1, Papatea, Waiti Stm, 27 Nov 1992, GH, under logs by stream; 1, Rereauira, 9 Mar 1993, JSD, litter 93/33; 6, Rotorua, Lake Tikitapu (Blue Lake), 14–18 Jan 1987, S. Kiener (MHNG); 2, Tauranga side, 20 Oct 1921, A. E. Brookes Collection; 7, Te Koa, 24 Oct–1 Dec 1992, GH, lincoln pit trap; 15 Mar–29 Apr 1993, JSD, pit traps; 15 Mar 1993, JSD, litter 93/43; 16, Te Koa, 243 m, 24 Oct 1992–31 Jan 1993, RME, pitfall traps, mixed broadleaf/podocarp forest; 31 Jan–15 Mar 1993, RME, pitfall traps, mixed broadleaf/podocarp forest; 4, Te Koa, Hovells Watching Dog Tk, 500 m, 31 Jan 1993, JSD, litter 93/12; 4, Te Koa, Twin Puriris, 24 Oct–1 Dec 1992, GH, pit traps (1 MHNG); 23–24 Oct 1992, JSD, pit traps; 31 Jan–15 Mar 1993, RCH, pit trap; 3, Waenga Bush, 28 Jan 1993, RME, ex mixed broadleaf/nikau forest litter; 6, Waiaroho, 25 Nov 1992–26 Jan 1993, JSD, pit traps; 21 Oct–25 Nov 1992, GH, pit traps; 21 Oct 1992, JSD, litter and mosses 92/70; 1, Waikare (locality not found), 12 Oct 1967, R. A. Cumber, leaf litter (MHNG). **TK**, 1, Mt Egmont, 823 m, 29 Nov 1970, A. W. Don, litter; 1, Mt Messenger, 182 m, 23 Jan 1972, GWR, litter; 1, Whangamomona Saddle 650', 18 Apr 1965, N. A. Walker, litter; 6, White Cliffs Walkway, 5 km S Tongaporutu, 7 Dec 1982, JSD, litter 82/133. **TK/WO**, 6, Awakino Gorge, 23 Jan 1972, GWR, litter. **TO**, 1, Desert Rd, Mangatawai Stm, 21 Nov 1977, JSD, in open at side of main stm; 3, Erua, Jan 1914, Broun Collection; 27 Jan 1982, C. F. Butcher, sifted litter & moss 82/18; 6, Kaimanawa North FP, 850 m, 11 Mar 1978, JSD, litter and rotten wood 78/117; 2, Kaimanawa SF, 26 Mar

1978, S&JP, litter; 3, Ohakune Mt Rd, nr Mangawhero Lodge, 28 Nov 1985, R. C. Craw, sifted litter 85/70; 1, Ohakune, Main Trunk, 3 Apr 1924, T. R. Harris; 1, Pokaka, 22 Feb 1917, Broun Coll (BMNH); 1, Tongarirou NP, 1 km NE Ohakune, 740 m, 16 Dec 1985, RME, under log podocarp/broadleaf forest; 4, Turangi, Pihanga SR, 13 Jan 1972, GWR, litter; 2, Waituhi Saddle, 2 Sep 1993, JTN, leaf litter. **GB**, 2, East Cape, Lighthouse Tk, 17 Mar 1993, RCH, litter 93/47; 3 Nov 1995, GH, litter & debris 95/15; 2, East Cape, Rangiatea, 3 Feb–17 Mar 1993, RCH, pit traps; 30 Apr 1993, GH, litter 93/103; 2, L. Waikaremoana, 21 Jun 1991, C. F. Morales, litter 91/51; 2, Paoneone, 13 Mar 1993, JSD, ex *Agropyron* on fallen *Beilschmedia tawa*; 2, Rangitukia Rd, Te Awha Stm, 24 Nov 1993, GH, under logs and *Rhopalostylis sapida* fronds; 1, Taikawakawa, 2 Feb–18 Mar 1993, RCH, pit traps; 6, Waimata V, Kaharoa Stm, 30 Nov 1994–9 Jan 1995, GH, pit traps 60 year old kanuka site 3; 22 Nov 1994–10 Jan 1995, GH, pit traps. **RI**, 1, Te Kawa, 19 Mar 1959, R. A. Cumber. **HB**, 1, Kaweka Ra, Makahu Hut, 975 m, 13 Mar 1980, C. F. Butcher, litter 80/38; 1, S Arowhana Stn, 762 m, 28 Feb 1971, A. C. Eyles, litter 71/25. **South Island**: **WD**, 1, Waiho Gorge, 14 Jan 1923, C. E. Clarke [mislabelled?].

*Brachynopus rufus* (Broun, 1881) (p. 22)

51 specimens. **North Island**: **ND**, 2, Kaiwhetu, N of Hihii, Krause Property, 15 Feb 2000, RABL, GH, RJBH, leaf litter; 1, Puketoto, 20 Jan 1972, GWR, litter 72/49; 10, Trounson Kauri Park, 27 Jan 1998, RABL, A. Davelos, ex flood debris (from stream); 5, Waipoua SF, vic Wairau Summit, 450 m, 27 Nov 1984, AN, MT, forest floor and log litter; 1, Whangarei, Abbey Caves, 19 Nov 1997, RABL, GH, rotten logs. **AK**, 1, Waitakere Ra, Cascade Kauri Park, Andersons Tk, 85 m, 8 Dec 1984–25 Jan 1985, AN, MT, hdw-podocarp forest. **CL**, 3, Great Barrier I, Little Windy Hill, 19 Dec 2002–23 Jan 2003, K. Parsons, Malaise trap, coastal forest; 13 Dec 2002–17 Jan 2003, P. Sutton, Malaise trap, forest edge; 25 Feb–19 Mar 2003, K. Parsons, Malaise trap, coastal forest. **WO**, 1, Mahoenui, Gribbons Rd, 26 Jun 1977, GWR, beating; 1, Waharoa, Gordon Gov. Res, 23–29 Mar 1978, S&JP, swamp forest (MHNG). **BP**, 2, Onaia Ecol Area, 6 Jan 1992, JAH, tawa forest; 30 Dec 1991, JAH, tawa forest; 1, Rotorua, May 1985, Wachtel (MHNG). **TO**, 16, Opepe, 27 Mar 1978, S&JP (4 MHNG, 4 NZAC). **GB**, 7, Waimata V, Kaharoa Stm, 22 Nov 1993–10 Jan 1994, GH, pit traps.

*Brachynopus scutellaris* (Redtenbacher, 1867) (p. 23)

863 specimens. **Offshore Islands**: **TH**, 1, Great I, Castaway Camp, 1 Nov 1970, GK, litter (MHNG); 4, Tasman V, 1 Nov 1970, JCW, ex rotten *Leptospermum* branch. **North Island**: **ND**, 1, Paiaka, 20 Oct 1949, R. A. Cumber, *Phormium* survey; 3, Puketiti Forest, Waipapa River, River walk, 13 Jan 2000, RABL, ex *Bjerkandera adusta*; 1, Waipoua, 14 Jun 1966, JIT, under pine bark; 4, Waipoua SF, 7–16 Jun 1966, JCW, JIT, under bark of kauri log; Oct 1967, JCW, under bark decaying *Pinus* logs; 1, Yakas Tk, 29 Mar 1999, RABL, RJBH, GH, ex yellow *Hyphodontia* sp; 1, Waipu, Jan 1914, T. Broun Collection, 288; 1, Whangarei, Hikurangi, 24 Apr 1926, E. Fairburn; 1, Whangarei, Mair Park, 17 Aug 1977, GK, litter & wood. **AK**, 1, Auckland, Jan 1942, D. Spiller; 2, nr Auckland, May 1986, F. Wachtel (MHNG); 5, Lynfield, 1 May 1977, GK, floodings; 7 May 1977, GK, decaying wood; 17 Jul 1977, GK, ex rotten *Pinus radiata* (1 MHNG); 3 Apr 1980, GK, Malaise trap; 6, Lynfield, Tropicana Drive, 13 Apr 1975, GK (3 MHNG); 29 Jan 1977, GK, *Salix fragilis*; 27 Nov 1991, M. A. & L. L. Ivie, GK, rotten log & tree hole; 26, Lynfield, Wattle Bay, 2 Mar 1980, GK, decayed *Corynocarpaceae* in swamp; 8 Feb 1981, GK, *Melicope ternata* stump; 8 Oct 1986, GK, sifted rotten wood 86/21; 27 Nov 1991, M. A. & L. L. Ivie, GK, beating & under bark; 1, Oratia, 6 Nov 1941; 2, Owairaka, 6 Jan 1949, J. S. Edwards; 16, Swanson, 8 Feb 1942, D. Spiller; 2, Titirangi, 20 Mar 1913, T. Broun; 1, Waitakere Ra, 13 Jul 1941, D. Spiller; 1, Waitakere, Anawata Rd, 4 Aug 1948, G. Payne. **CL**, 1, 10 km N Kennedy Bay, 24 Mar 1977, GK, ex rotten wood; 1, Great Barrier I, Mt Hobson, nr summit, 600 m, 7 Oct 2002, JWE, S. E. Thorpe; 2, Little Barrier I, Awaroa Stream Ridge, 4 Oct 1975, B. M. May, litter 75/197; 2, Tairua (BMNH). **WO**, 1, Mahoenui, 4 Oct 1987, P. Herbert, under dead wood; 1, Ohaupo, 11 Jan 1985, P. G. Alexander, blueberry punnets (PANZ); 1, Otewa Gorge, Waipa Rd, C. E. Clarke (BMNH); 4, Taumatotara, Te Anga, 11 Oct 1967, B. M. May; 1 Oct 1961, D. Gardiner, ex dead dry wood (1 MHNG). **BP**, 2, L. Rotoiti, Otaramarae, 29 Dec 1977, JSD, ex dead log in secondary growth bush; 2, Mamaku Plateau, Horohoro SF, Tikitiki Stm, 24 July 1976, JSD, litter 76/49; 5, Papatea Beach, 23 Nov 1992, GH, under driftwood; 1, Papatea, Waiti Stm, 27 Nov 1992, GH, under logs by stream; 1, Rotorua, Lake Tikitapu (Blue Lake), 14–18 Jan 1987; 1, Waiaroho Bush, 25 Nov 1992, B. I. P. Barratt (BPBC). **TK**, 3, Awakino, 26–27 Jan 1987, S. Kiener (MHNG). **TO**, 2, National Park, 24 Nov 1965, JIT, litter. **GB**, 1, Kakanui, 350 m, 1 Feb 1993, JSD, litter 93/14; 3, Paoneone, 2 May 1993, GH, rotten wood; 2, Rangiatea, East Cape, 20 Sep 1992, GH; 1, Waimata V, Kaharoa Stm, 11 Jan 1994, GH, under logs. **HB**, 4, Hastings, 18 Nov 1941, D. Spiller. **WI**, 1, Ashurst Domain, 25



- Oct 1993, JTN. **WN**. 1, Karori Reservoir, 8 Jan 1995, JTN, in decayed *Nothofagus* wood; 1, Levin, 10 Dec 1961, L. G. Morrison, on timber (PANZ); 1, Pakuratahi Forks, 26 Mar 1995, JTN, in fallen, decayed *Nothofagus* branch with 'white rot'; 1, Stokes Valley, 23 Jan 1950, B. A. Holloway; 1, Upper Hutt, 31 Mar 1956, D. Manson, under bark (PANZ); 5, Wellington, 22 Sep 1956, D. Manson, under bark (PANZ); 3, Wellington, Tinakori Hill, 5 Jun 1991, JTN, in decayed wood; 14 Apr 1992, JTN, in decayed wood; 23 Jun 1991, JTN, in decayed wood; 4, Wellington (BMNH). **WA**. 1, Tauherenikau Valley, 24 Apr 1921; 2, West L. Wairarapa Res, 11 Jun 1995, JTN, in *Nothofagus* log with rich black humus. **South Island: SD**. 3, D'Urville I, gully behind Ohana Bay, 14 Feb 1974, RME; 1, Elie Bay, 10 Nov 1949, ESG; 1, Opouri Saddle above Tennyson Inlet, 540 m, 15 Dec 1984–5 Jan 1985, AN, MT, *Nothofagus* spp forest, under bark, fallen *Nothofagus* branches; 7, Picton, Helms (BMNH); 1, Picton, Shakespeare Bay, 11 Aug 1969, J. McBurney, litter; 2, Queen Charlotte Sd, Bay of Many Coves, 26 Dec 1992, JWMM, under log; 26 Dec 1992–6 Jan 1993, JWMM, ex light intercept trap, *Kunzea* coastal broadleaf forest; 4, Mistletoe Bay, 13 Feb 1985, JWE, at night, coastal bush; 4, Maud I, 6 Nov 1949, ESG; 1, Rarangi, Whites Bay, Pukatea Bush Walk, 16 Nov 1999, RABL, RJBH, *Schizopora*; 5, Road Havelock-Picton, 20 Nov 1996, E. Heiss & Perner; 3, Stephens I, 14–28 Jan 1933, ESG; 3, Tennyson Inlet Road, 115–135 m, 30 Dec 1984–5 Jan 1985, AN, MT, streams, hdwd-podo-nikau forest, resupinate white polypore under log bark (1 MHNG); 3, Tennyson Inlet, E side Duncan Bay, 30 m, 15 Dec 1984–5 Jan 1985, AN, MT, podo-*Nothofagus* forest, window trap; 1, Tennyson Inlet, W side Te Mako Bay, 125 m, 15 Dec 1984–5 Jan 1985, AN, MT, *Nothofagus*-podo-hdwd, window trap. **NN**. 11, Abel Tasman NP, Bark Bay, 5 Feb 1981, R. R. Scott, under logs; S. P. Worner, under bark *Pinus*; 9, Marahau, 19 Nov 1996, E. Heiss & Perner; 1, Onetahuti Beach, 6 Feb 1981, JWE, sandy beach under driftwood; 1, Tinline Nature Walk, 11 Dec 1986, RME, on trees and logs at night; 1, Tonga I, 5 Feb 1981, RME, under bark; 1, Aniseed V, 23 Mar 1922, A. Philpott; 5, Aorere Valley, 7 Oct 1964, ESG; 3 Apr 1967, JCW, under bark *Nothofagus* log; 1, Big Bush SF, Hope Saddle, 12 May 1979, JCW; 1, Botanical Hill, 10 Sep 1964, JTT, litter 64/92; 1, Boulder Lake, start of Tk 1250, L. P. Marchant; 4, Canaan, 2800', 18 Apr 1966, JCW, under bark *Nothofagus menziesii* (1 MHNG); 2, Canaan, Moor Park, 25 Nov 1965, GWR; 1, 800 m, 22–28 May 1982, S&JP, beech stump litter; 1, Cobb Ridge, E of Cobb Reservoir, 990 m, 2 Jan 1985, AN, MT, *Nothofagus* spp forest; 1, Dun Mt, 5 Feb 1973, B. A. Holloway; 1, Dun Mt Tk, Third House, 1850', 4 Apr 1966, JCW, in rotten *Nothofagus* logs; 1, Dun Mt, 2000', 10 Jan 1942, ESG; 20, Eves Valley, 30 Mar 1955, ESG (2 MHNG); 5, Flora Hut, 12 Nov 1969, S. Silcock, *Nothofagus* logs; 12 Nov 1969, JTT, *Nothofagus* logs (1 NHMG); 1, Gowandridge, 0.6 km E, 330 m, 18 Dec 1984–7 Jan 1985, AN, MT, *Nothofagus* spp forest, berlese leaf & log litter, forest floor; 3, Harwoods Hole, 17 Feb 1999, RABL, RJBH, *Fuligo septica*; 2, Heaphy River, Lewis Hut, 26 Feb 1971, GWR; 2, Heaphy River mouth, 26 Feb 1971, GWR; 1, L. Rotoiti, 26 Mar 1949, A. E. Brookes Collection; 1, L. Sylvester Tk, 900 m, 8 Feb 1995, RME, under log; 1, Maitai Saddle, 22 Nov 1961, W. P. Thomas; 5, Mangarakau, 31 Mar 1965, GWR, under log; 4, Mangarakau, 1 km S, 9 Nov 1981, RME, under bark podocarp; 1, Mangarakau, 50 m, 20 May 1982, S&JP, mixed forest litter; 1, Moa Park, Canaan, 25 Nov 1965, GWR (MHNG); 1, Mt Arthur, 13–19 Nov 1969, JTT, moss; 2, Mt Burnet, 600 m, 8 Feb 1981, RME, in rotten log; 8, Nelson, 9 Sep 1941, ESG; 19 Jul 1944, ESG, ex bush; 1, Nelson Botanical Hill, 16 Dec 1990, J. Martens (SMNS); 5, Nelson Lakes NP, 5 Mar 1998, SLS, *Physarum cf. leucophaeum*; 18, Nelson Lakes NP, nr West Bay, L. Rotoiti, 23–26 Feb 1987, S. Kiener (MHNG); 1, Nelson, Brooklyn Domain, 5 Feb 1971, RME, under bark; 4, Oparara Gorge, 9 Feb 1999, RABL, RJBH, berlesate; 6, Pakawau, 30 km W, 20 May 1982, S&JP, logs on beach; 12, Pigeon Saddle, 300 m, 21 May 1982, S&JP, mixed forest litter; 7 Feb 1999, RABL, RJBH, ex resupinate polypore; 7–18 Feb 1999, RABL, RJBH, FIT; 15 Feb 1999, RABL, RJBH, ex polypore; 1, Pretty Bridge Valley, 17 Nov 1965, G. Hitchings, pit trap in pasture; 2, Puponga Farm Park, 26 Mar 1978, R. R. Scott, under bark; 1, Quartz Range, Bainham 1250'; 2, Riwaka River Res, 100 m, 28 May 1982, S&JP, mixed forest litter; 3, Ruby Bay, 9 May 1965, G. J. H., under *Pinus* Bark (1 MHNG); 6, Slaters Road, 0.7 km S Whangamo Saddle, 410 m, 13 Dec 1984–4 Jan 1985, AN, MT, *Nothofagus* spp forest, window trap; 6, Takaka Hill, 2000', Jan 1943, ESG; 19 Feb 1957, ESG; 2500', 7 May 1957, ESG; 1, 2600', 2 Apr 1965, AKW, moss sp; 1, Takaka, Canaan, 17 Sep 1964, L. D. Marchant, litter; 2, Third House Mt Tk, Nelson, 4 Apr 1966, JCW, in rotten *Nothofagus* (MHNG); 3, Upper Maitai, 21 Nov 1925, ESG; 25 Mar 1998, ESG; 2, Waiharakeke Tk, 16 Feb 1999, RABL, RJBH, berlesate; 1, Wakefield, Baigents Bush, 26 Aug 1965, GK, beaten from dead siver beech branches; 11, Washbourn Res, 13 km NW Takaka, 10 m, 19 May 1982, S&JP, beech log litter (1 MHNG); 1, West Haven Inlet, 1 mi W Mangarakau, 31 Mar 1965, N. A. Walker; 3, West Haven, Mangarakau, 31 Mar 1965, N. A. Walker; 21 Aug 1967, F. Alack; 2, Westport, Lyell Monument, 11 Dec 1990, J. Martens (SMNS); 6, Whangamo Saddle, 30 Mar 1970, JSD, ex dead *Weinmannia racemosa*; 31 Jan 1978, AKW, sprayed rotten wood; 27 Jan–3 Feb 1979, AKW, pan trap in *Nothofagus* forest. **BR**. 2, 1.5 km N Punakaiki, 50 m, 19 Dec 1984–20 Jan 1985, AN, MT, hdwd-podo-nikau forest, window trap; 8, 14 km SE Reefton, 250 m, 29 May 1982, S&JP, beech forest litter; 2, 5 mls E of Kumara, 23 Aug 1974, RME, ex podocarp broadleaf litter; 1, Ahaura, 24 Jan 1935, ESG; 3, Big Red Rd, 3 km S Reefton, 9 Nov 1971, JCW, fungus 71/124; 1, Bullock Creek, 14 May 1976, RME, under rotten log; 1, Butchers Creek, 7 Mar 1972, JCW, ex *Franates* on burnt *Nothofagus* (MHNG); 1, Cape Foulwind, Okari R, 29 Oct 1970, Ento. Dep. Field Trip, under bark (LUNZ); 3, Capleston, 8 Nov 1971, JCW, decaying *Nothofagus*; 1, Capleston, Flowers Ck, 25 Jan 1972, JCW, under bark logs; 21, Fletchers Ck, 10 Jan 1973, JCW, under bark dead standing matai; 27 Jan 1972, J. McBurney, litter 72/88; 7 Mar 1972, JCW, under bark fallen *Nothofagus* trunk; 7 Mar 1972, JCW, under bark ex *Franates* on burnt *Nothofagus*; 18 Apr 1972, JCW, under bark dead *Libocedrus bidwillii*; 41, Greymouth, Helms (BMNH), 1 MHNG); Broun Coll (BMNH); Sharp Coll (BMNH); 19–21 Jan 1957, ESG; 1, Hochstetter SF, 11 Nov 1971, JCW, under bark, dead branches; 2, L. Rotoiti, 13 Nov 1999, RABL, RJBH, beating 'at large'; 25 Mar 1977, AKW, ex rotten wood; 4, L. Rotoiti, 600 m, 8 Feb 1978, S&JP, under bark of old logs, frass (1 MHNG); 7 Feb 1978, AKW, ants nest in beech forest; 2, 0.6 km S Lewis Pass, 870 m, 17 Dec 1984–21 Jan 1985, AN, MT, *Nothofagus* spp forest, window trap; 1, 11.9 km ESE Springs Junction, 540 m, 17 Dec 1984–21 Jan 1985, AN, MT, *Nothofagus* spp forest, leaf & log litter forest floor; 1, 13.2 km S Lewis Pass, 650 m, 17 Dec 1984–21 Jan 1985, AN, MT, *Nothofagus* spp forest, window trap; 2, Mawhera SF, 11 Nov 1971, JCW, decaying rimu logs; 4, mouth of Buller River, on beach, 11 Feb 1999, RABL, RJBH, ex corticioid; 3, Nelson Lakes NP, L. Rotoiti, 600 m, 4–9 Feb 1978, S&JP, *Nothofagus* forest, fungi; 5, St Arnaud Tk, 645 m, 14 Dec 1984–6 Jan 1985, AN, MT, *Nothofagus* spp forest, window trap; 14 Dec 1984–6 Jan 1985, AN, MT, *Nothofagus* spp forest, pyrethrin fogging fungusy logs; 4, 670 m, 14 Dec 1984–6 Jan 1985, AN, MT, *Nothofagus* spp forest, on gilled mushrooms; 14 Dec 1984–6 Jan 1985, AN, MT, *Nothofagus* spp forest, carrion trap [squid]; berlese leaf & log litter, forest floor; pyrethrin fogging fungusy logs and on *Ganoderma* (3 MHNG); 1, L. Rotorua, 450 m, 3–7 Feb 1978, S&JP, bait trap, carrion; 1, N slope Mt Robert, Pinchout Tk, 950 m, 14 Dec 1984–6 Jan 1985, AN, MT, *Nothofagus* spp forest, window trap; 1, Speargrass Tk, 880 m, 21 Dec 1984, AN, MT, *Nothofagus* spp forest, under bark *Nothofagus* logs; 2, Nelson Lakes NP, nr Rotorua, 19 Nov 1996, E. Heiss & Perner; 1, nr Murchison, Victoria forest, 24 Nov 1996, E. Heiss & Perner; 1, Punakaiki, 10 Dec 1990, J. Martens (SMNS); 1, Rapahoe, 20 Jan 1957, ESG; 1, Reefton, 11 Nov 1971, J. McBurney; 1, Shenandoah Saddle, 22 Sep 1972, JCW, under bark *Nothofagus*. **WD**. 1, Arthurs Pass NP, Kellys Creek, 460 m, 11 Nov 1985, RME, under logs, kamahi/rata forest; 5, Haast R, 100 m Sunny Flat, 25 Jan 1978, GK, sifted litter 78/54 (1 mhng); 4, Hokitika, 25–30 Jan 1978, S&JP; 3, nr Kumara (BMNH), 1, L. Mahinapua, 28 Jan 1978, S&JP, bracket fungi; 1, Mahinapua SF, 9 Mar 1972; 7, L. Mahinapua, Jum Michel Tk, 12 Feb 1999, RABL, RJBH, undet polypore; 2, L. Paringa, 6–10 Dec 1960, JTT, P. R. Kettle; 1, Okuku Scenic Res, 75 m, 12 Jan 1998, RABL, C. Carlton, *Laurelia novae-zelandiae* leaf litter; 8, Rimu Forest lanthe SF, 1 Oct 1977, RME, under bark logging area; 2, Rimu, Hokitika, 12 Dec 1928, A. F. Clark, on fresh wind thrown *Dacrydium cupressinum*; 3, Waitaha, 27 Oct 1966, JTT; 1, Waitangitona R mouth, 23 Sep 1984, RME, under logs. **WDOL**. 1, Haast Pass 550 m, 24 Jan 1978, GK, litter 78/52; 1, 650 m, 22 Jan 1978, GK, in old *Nothofagus menziesii* with *Ganoderma*. **MB**. 2, Hanmer Springs, 28 Oct 1974, R. H. Blank (LUNZ); 5, Havelock, 12 Dec 1990, J. Martens (1 MHNG 4 SMNS); 3, Molesworth, Mt Murphy, 1816 m, 20 Mar 1968, JTT (1 MHNG); 2, Onamalutu SR, 15 Nov 1999, RABL, RJBH, ex *Ganoderma*; 9, Pelorus Bridge, 16 Jan 1949, A. E. Brookes Collection; 25 Jul 1967, JCW, ex decaying *Fomes* sp; 15 Nov 1999, RABL, RJBH, ex *Trametes versicolor*; 10, Pelorus Bridge SR, 30 m, 25–28 Jul 1982, S&JP, mixed forest litter; 60 m, 15 Dec 1984–4 Jan 1985, AN, MT, under bark podocarp logs (1 MHNG); 1, Pine Valley, 19 Nov 1999, RABL, RJBH, leaf litter; 2, Titirangi, 22 Oct 1969, P. Alack; 10 Dec 1969, P. Alack (MHNG). **KA**. 4, 7 km N Oaro, 9 Jan 1998, RABL, C. Carlton, *Coprosma*, *Macropiper* leaf litter; 1, Blue Duck Creek, Scientific Res, 18 Nov 1999, RABL, RJBH, leaf litter; 1, Goose Bay, 17 Sep 1977, RME, in rotten log; 19, Half Moon Bay, Ohau Stm Walk, 17 Nov 1999, RABL, RJBH, night rotting logs/ at large; 2, Hawk Ra, E 300 m on road, 12 Apr 1973, GK, J. McBurney; 1, Kaikoura, South Bay, 16 Dec 1995, JTN, under bark near beach; 4, Oaro, 14 Nov 1972, RME, bracket fungus; 27 Sep 1980, RME, beating coastal scrub; 18 Mar 1985, RME, on fungus under log, coastal forest; 1, Puhipuhi Res, 600 m, 13 Aug 1966, AKW, moss in open nr bush edge. **NC**. 1, Oxford, 22 May 1971, A. Falkingham, ex rotten beech (LUNZ); 6, Rangiora, 30 Nov 1941, D. Spiller, under bark and stones; 2 Dec 1941, D. Spiller; 1, Waipara, 21 Oct 1970, M. G. McPherson. **NC**. 3, Mt Grey (FD?), 16 Jan 1958, ESG **MC**. 12, Akaroa, Long Bay, 9 Sep 1970, RME, ex rotted log; 2, Algidus, 15 Sep 1913, T. Broun Collection; 25 Sep 1913, T. Broun Collection; 1, Ashley Gorge, 1 Mar 1966, N. A. Walker; 1, Banks Peninsula, Hinewai Res, 7 Feb

1995, JWMM; 1, Prices V, 40 m, 11 Dec 1984–22 Jan 1985, AN, MT, hdwd-podocarp forest, window trap; 1, Tumbledown Bay, 28 Sep 1963, W. P. Thomas; 1, Christchurch, 8 Sep 1984, JWMM, removed from spider web; 1, Coes Ford, Lincoln, 20 Jan 1970, M. G. McPherson, ex rotted log; 1, Craigieburn, 850 m, 9 Jan 1998, RABL, C. Carlton, *Nothofagus solandri* leaf litter and logs; 1, Dyers Pass, 20 Jan 1958, M. J. Esson; 1, Kaituna V Scenic Res, 13 Jul 1976, RME, in rotten log; 3, Methven nr 1481, Dec 1911, T. Broun Collection; 1, Mt Hutt, 14 Feb 1912, T. Broun Collection; 2, Mt Hutt, McLennans Bush, 11 Dec 1973, GK, litter 73/141; 1, Prices Valley, 75 m, 18 Oct 1979, RME, beaten ex mixed broadleaf/podocarp forest; 1, Stavelly, Sharplin Falls, 25 Oct 1997, JTN. **OL**. 1, L. Wanaka, Makarora, Kamahi Beh, 11 Dec 1966, F. Alack, under ferns; 19, Makarora, 22–25 Jan 1978, S&JP, berlese bracket fungi & treehole debris; 21–24 Jan 1978, S&JP, malaise *Nothofagus* forest edge; 22 Jan 1978, S&JP, bracket fungi (3 MHNG); 21 Jan 1978, GK, litter 78/46; litter 78/47 (4 MHNG); 7–9 Nov 1997, JTN, in decayed wood; 2, Matukituki Valley, 350 m, 18 Jan 1998, RABL, C. Carlton, ex *Inonotus nothofagi*; 8, Mt Aspiring NP, 5.5 km NNE Makarora, 330 m, 11–17 Jan 1985, AN, MT, fogging fungus logs, *Nothofagus* forest (5 MHNG); 1, Arawata Biv, 845 m, 1–6 Feb 1989, JWE, malaise trap for scrub; 1, Glacier Burn, 490 m, 30 Jan 1987, R. R. Scott, sweeping in beech forest; 1, L. Sylvan, 21 Sep 1997, JTN, in humus under bark of dead *Nothofagus*; 1, Mt Aspiring Hut, 430 m, 31 Jan 1987, C. A. Muir, under moss on tree; 4, Mt Dick, 16 Feb 1933, E. Fairburn; 3, Mt Eamslaw, 9 Jan 1945, ESG (1 MHNG); 2, Te Anau, 23 Mar 1996, K. Renner (MHNG). **SC**. 1, Mesopotamia, 6 Dec 1978, RME, under bark of *N. cliffortioides*. **DN**. 1, Abbotsford, 5 Jul 2000, JTN, under bark dead pine; 2, Lower Clutha, 75 m, Tuapeka West, opp Birch I, 21 Dec 1985, B. I. P. Barratt, ex rotten wood (BPBC); 1, Moeraki (BMNH); 1, Mt Maungatua, 16 Oct 1999, JTN, under bark decaying beech log; 1, Saddle Hill, 10 Dec 1950, ESG; 1, Taieri, T. Broun Collection; 6, Waipori Falls, 19 Aug 1998, JTN, in thick humus under bark of dead *Nothofagus*; 23 Dec 1984, B. I. P. Barratt, ex rotten wood. **FD**. 2, Bauza I, 26 Nov 1981, C. F. Butcher, litter & moss 81/187; 3, Borland Nature Walk, nr Borland Lodge, 9 May 2000, RABL, *Schizopora*; 3, Fiordland NP, Eglinton V, Deer Flat, 23 Dec 1984, RME, under logs; 1, Fiordland NP, S Arm L Manapouri, 4 Nov 1982, RME, under bark of *Nothofagus cliffortioides*; 1, End of Hollyford Rd, 10 Dec 1966, AKW, ex dead log; 1, Hollyford Tk, 22 Jan 1998, RABL, C. Carlton, leaf litter coastal forest; 3, Kepler Tk, 18 Feb 1998, SLS, *Trichia floriformis*; 9 Mar 2001, RABL, ex Agricales; 3, nr Control Gates, 10 May 2000, RABL, ex *Schizopora*; 1, Te Anau, Kepler Tk; 2, Knobs Flat, 11 May 2000, RABL, leaf litter; 1, L. Hauroko, Thicket Burn, 4 Jan 1996, JTN; 3, Milford Sound, 22 Mar 1996, K. Renner (MHNG); 1, Percy Pass Rd lower end, 13 Dec 1998, JTN, under bark of *Nothofagus* logs; 1, Resolution I, May 1982, C. F. Butcher, rotten wood; 1, Disappointment Cove, 29 May 1982, C. F. Butcher, baited sifted litter 82/63; 1, Secretary I, Gut Bay, 23 Nov 1981, C. F. Butcher, sifted litter around hut 81/177; 3, 26 Nov–2 Dec 1981, C. F. Butcher, reared 81/18; 3, Te Anau Control Gates Tk, 24 Jan 1998, RABL, D. M. Gleeson, GH, headlamp; 3, Te Anau, 40 mi N, 19 Feb 1965, N. A. Walker; 2, Te Anau, Brods Bay, 21 Feb 1965, N. A. Walker. **SL**. 1, Bluff, Greenhills, 17 Jan 1959, ESG; 2, Invercargill, Thomsons Bush, 20 Jun 1997, JTN, in decayed wood; 2, Longwood Ra, 19 Jan 1965, GK, JIT. **SI**. 9, Bungaree, 12–19 Mar 1987, S. Kiener (MHNG); 3, Christmas Village, 8 Feb 1991, J. M. Holland, on moss at night; 5 Feb 1991, P. Syrett, on mossy tree trunks at night; 8 Feb 1991, RME, at night; 1, Freds Camp, 5 Feb 1991, H. M. Hamman, sweeping *Blechnum discolor*, coastal bush; 1, Golden Bay, 8 Jan 1996, JTN, in forest litter; 7, Mason Bay, 2 Feb 1991, B. M. Hamilton, beaten from coastal scrub behind hut (LUNZ); 3 Feb 1991, H. M. Hamman, rotten log at night, track to Mason Bay Hut; 3 Feb 1991, J. M. Holland, in bush opposite Island Hill Homestead; 2 Nov 1991, S. P. Worner, on tree trunks at night; 3, Port William, 9 Feb 1991, P. Syrett; 2, Port Pegasus, Old Hut, 24 Feb 1968, GK, litter (MHNG); 1, Port Underwood Saddle, 1 Sep 1969, GK, litter; 1, W. side Little River, 26 Dec 1976–2 Jan 1977, A. C. Harris, Malaise trap. **Offshore Islands**: **CH**. 1, Chatham I, Awatotara Tableland, 450', 16–19 Feb 1967, GK, beating; 1, Awatotara 600', 21 Feb 1967, GWR, litter 65/139; 45, Hapupu, Feb 1967, bracket fungus; 14 Nov 1991, JSD, litter 91/61; 2, Limestone Quarry, 11 Feb 1967, GK, litter; 2, Mananea, 3–8 Mar 1991, R. C. Craw, pit trap under *Olearia* & rushes; 2, North Coast, 2 Mar 1967, GWR (2 MHNG); 19, Pitt I, 16–26 Jan 1944, ESG (2 MHNG); 9, Rangaitira, 29 Nov 1992, JWMM, litter ex *Olearial Macropiper/Melicystus* forest; 27 Nov 1992, P. Syrett, on tree at night; 28 Nov 1992, RME, under log; 28 Nov 1992, RME, on tree at night; JWMM, litter ex *Olearial Macropiper/Melicystus* forest; 27–30 Nov 1992, JWE, pitfall trap, *Olearial Macropiper/Plagiathus* forest; 34, South East I, 20 Feb 1967, GWR; 90 m, 9 Nov 1970, JIT (1 MHNG); 31 Dec 1998, RME, on tree trunks at night; East Clears, 22 Jan 1998, R. M. Emberson, ex damp litter, *Coprosma*, *Myrsine*, *Olearia* forest; 20 Jan 1998, RME, on *Fomes*-type fungus; Thinornis Bay, 14 Jan 1997, RME, under polypore fungus on track; Top Bush, Fran & Rua Tk, 21 Jan 1998, RME, on tree trunks at night; Woolshed Bush, 13–17 Jan 1997,

RME, pitfall traps in coastal broadleaf forest; 14 Jan 1997, JWMM, on fungus at night; 16 Jan 1997, RME, on *Formes* fruitification; Whalers Bay Tk, 18 Jan 1997, JWMM, on trees and logs at night; 12, Taiko Camp, 10 Nov 1991, JSD, sifted rotten wood 91/57; 3 Jan 1988, G. Messenger; 5 Mar 1991, R. C. Craw; 7, Tuku, 20 Feb 1967, GWR (2 MHNG); 2, Tuku Res, Taiko Camp, 5 Dec 1992, JWMM, under loose bark. 1, no locality data (PANZ). 866 specimens.

#### *Cyparium earlyi* new species (p. 16)

Holotype only. **South Island**: **FD**.

#### *Cyparium thorpei* new species (p. 17)

1 paratype. **North Island**: **ND**. 1, Mangamuka Gorge SR, 70 m, 25 Nov–5 Dec 1984, AN, MT, hdwd-podocarp forest, leaf & log litter, forest floor. **TO**. holotype.

#### *Notonewtonia thayerae* new species (p. 25)

16 paratypes. **North Island**: **ND**. 1, Mangamuka, 20 Jan–30 Mar 1999, RABL, RJBH, GH, FITA; 1, Mangamuka Walkway, 1 Aug–15 Sep 1998, RABL, RJBH, GH, FIT. **BP**. 1, Papatea, 100 m, 15–25 Sep 1982, JSD, malaise trap. **TO**. 1, Waipapa Reserve, 570 m, 15 Dec 1983, JAH, malaise trap, podocarps. **HB**. 1, Puketitiri, Little Bush, 15 Mar 1986, T. H. Davies, Malaise trap. **South Island**: **NN**. 1, Arthur Ra, Graham River road, 530 m, 1 Jan 1985, AN, MT, wet moss in splash zone of small waterfall, forest remnant; 1, Slaters Road, 0.7 km S Whangamo Saddle, 410 m, 13 Dec 1984–4 Jan 1985, AN, MT, *Nothofagus* spp forest, window trap. **BR**. 1, Flagstaff Res, Hochstetter SF, 9 Nov 1972, JSD (MHNG); 2, Greymouth, 1905, Helms Reitter (BMNH); 2, Punakaiki, 1.5 km N, 50 m, 19 Dec 1984–20 Jan 1985, AN, MT, 2ny hdwd-podocarp forest, window trap. **WD**. 1, Fox Glacier, 14 Dec 1960, JIT & P. R. Kettle (MHNG); 1, Magister Ridge, Westland, 11 Dec 1964, A. V. Spain, ex light trap. **MB**. 1, Pelorus Bridge SR, 60 m, 15 Dec 1984–4 Jan 1985, AN, MT, window trap hdwd podocarp forest (MHNG). **OL**. 1, Makarora, 24 Jan 1978, GK, litter 78/46.

#### *Notonewtonia watti* new species (p. 26)

5 paratypes. **North Island**: **ND**. 1, Mangamuka, 20 Jan–30 Mar 1999, RABL, RJBH, GH, FIT B. **CL**. 2, Great Barrier I, Little Windy Hill, 220 m, 7 Nov–11 Dec 2001, P. Sutton & J. Gilbert, forest edge, malaise trap L11043; 17 Jan–27 Feb 2003, K. Parsons, forest edge, malaise trap L21056. **WO**. holotype. **TO**. 2, Waipapa Ecol Area, 24 Dec 1987, JAH, Malaise trap 7, 1987 fire disturbed rimu, tawa, supplejack, pigeonwood forest. 6 specimens.

#### *Scaphisoma corcyricum* Löbl, 1964 (p. 40)

4 specimens. **North Island**: **AK**. 4, Lynfield, 3 Oct 1976, GK, coastal (1 MHNG).

#### *Scaphisoma funereum* Löbl, 1977 (p. 40)

15 specimens. **North Island**: **ND**. 3, Puketiti SF, 31 Mar 1999, RABL, RJBH, GH, ex *Amanita muscaria* (1 MHNG); 3 May 1999, RABL, GH, RJBH, ex *Boletus* sp; 1, Waipoua SF, 7–16 June 1966, JCW, JIT, moss. **AK**. 1, Henderson, 10 May 1941, D. Spiller, ex fleshy fungi (MHNG); 2, Lynfield, 10 May 1979, GK, *Uncinia banksii* (1 MHNG); 9 Nov 1980, GK, Malaise trap; 2, Woodhill Park Rd, 8–15 Dec 1998, P. Paquin & N. Duperre, pit traps #77. **CL**. 1, Gt Barrier I, Rosalie Bay, Benthorn Farm, 2 Nov–11 Dec 2001, P. Sutton, malaise trap boggy forest edge. **BP**. 1, Onaia Ecol Area, 30 Dec 1992, JAH, malaise trap, tawa forest 1080 drop. **GB**. 1, Taikawakawa, 2 Feb–18 Mar 1993, JSD, malaise trap. **TO**. 3, Kaingaroa, 30 Dec 1994, JAH, malaise trap.

#### *Scaphisoma hanseni* new species (p. 41)

232 paratypes. **North Island**: **ND**. 6, Kaiwhetu, N of Hihii, Krause Property, 15 Feb 2000, RABL, GH, RJBH, ex *Phellinus* sp; 3, Parua Bay, 26 Sep 1936, E. Fairburn; 21, Puketiti Forest, 1 Aug 1998, RABL, RJBH, ex *Phellinus cf givus* (MHNG); 6, Puketiti Forest, Nature Walk, 21 Jan 1999, RABL, GH, RJBH, ex *Phellinus givus*; 8, Puketiti SF HQ, 31 Mar 1999, RABL, RJBH, GH, ex *Phellinus givus*; 3, Russell Forest, Ngaioatonga Scenic Res, 22 Jan 1999, RABL, GH, RJBH, *Phellinus* sp; 3, Trounson Kauri Park, 11 Jun 2000, RABL, GH, RJBH, ex *Auricularia polytricha*; 4, Waimea Forest, Hauturu Tk, 13 Jun 2000, RABL, GH, RJBH, ex ?*Phellinus*; 14, Waipoua Forest, Te Matua Ngahere, 400 m, 16–20 Mar 1978, S&JP, kauri forest, berlese frass under bark; 8, Waipoua Stm, 70 m, 16–21 Mar 1978, S&JP, kauri forest, bracket fungi; 1, 0.8 km NW Wairau Summit, 460 m, 1 Dec 1984, AN, MT, hdwd-podocarp forest, pyrethrin fogging fungus logs; 2, Toatoa Tk, 26 Jan 1998, RABL, A. Davelos, ex *Phellinus cf. givus*; 1, Toronui Tk, 120 m, 26 Nov–4 Dec 1984, AN, MT, kauri-podocarp-hdwd forest, window trap; 1, vic. Wairau

Summit, 460 m, 27 Nov–4 Dec 1984, AN, MT, hdwd-podocarp forest, window trap. **AK**. 2, Huia, Farley Tk, 3 May 1998, RABL, GH, ex resupinate *Phellinus*; 3, Hunua Range, Managatangi V, 9 Dec 1982, B. A. Holloway, bracket fungus; 2, Lynfield, Tropicana Drive, 1 Feb 1976, GK, *Fuscopha dryophila*; 23, Lynfield, Wattle Bay, 12 Mar 1981, 5 Apr 1980, 7 Apr 1980, GK, on *Phellinus* (16 MHNG); 13 Apr 1980, GK; 1, Waitakere Ra, Cascade-Kauri Park, Up. Kauri Tk, 170 m, 23 Nov–8 Dec 1984, AN, MT, kauri-podocarp-hdwd forest, window trap. **CL**. 2, Coromandel, Mt Moehau Tk, 11 Apr 1999, RABL, E. Hilario, ex *Auricularia polytricha*; 1, Great Barrier I, Little Windy Hill, 220 m, 21 Feb–26 Mar 2002, P. Sutton, Malaise trap forest edge. **WO**. 3, Mt Pirongia, Rangitukia Stream, 13 Jun 2001, RABL, leaf litter; 1, Waitomo, 24 May 1983, GK, decayed wood & litter, 83/56. **BP**. 1, Lottin Pt Rd, Waenga Bush, 16 Sep 1992, GH, spraying dead trunks. **TK**. 5, Mt Egmont NP, Potaena picnic area, 650 m, 24 Dec 1985, RME, P. Syrett, at night on mossy trees and logs. **TO**. 1, Kaingaroa, Cmp. 368, 9 Dec 1994, JAH, malaise trap, 5 yr old *Pinus radiata*, pre 1080 drop. **WN**. 3, Waikawa V, 8 Mar 1978, JSD, ex sprayed twigs and branches with fungus. **South Island: SD**. 1, Tennyson Inlet, E side Duncan Bay, 30 m, 15 Dec 1984–5 Jan 1985, AN, MT, podo-*Nothofagus* forest, window trap. **NN**. 1, Tasman NP, Pigeon Saddle, 21 May 1982, S&JP, mixed forest litter (MHNG); 2, Heaphy Track, Aorere Saddle-Brown Hut, 11 Nov 1999, RABL, GH, ex *Ganoderma*; 2, Kohaihai Shelter to Heaphy Hut, 6 Nov 1999, RABL, GH, Polyporeaceae; 6, Lewis Hut, 7 Nov 1999, RABL, GH, *Phellinus* sp.; 3, Lewis Hut-MacKay Hut, 8 Nov 1999, RABL, GH, ex *Ganoderma*; 5, Nelson, Bryant Rd, Slater Creek, 23 Nov 1999, L. R. Millar, underside of bracket fungus tawa/beechn forest; 3, Slatters Rd, 0.7 km S Whangamo Saddle, 410 m, 13 Dec 1984–4 Jan 1985, AN, MT, window trap, *Nothofagus* sp forest. **BR**. 2, Punakaiki, 1.5 km N, 50 m, 19 Dec 1984–20 Jan 1985, AN, MT, hdwd-podo-nikau forest, window trap. **WD**. 12, Hokitika, L. Mahinapua Res, 28 Jan 1978, S&JP, berlese bracket fungi (2 MHNG); 23, L. Mahinapua, Jum Michel Tk, 12 Feb 1999, RABL, RJBH, ex *Phellinus kamahii*; 14, Okuku Reserve, 27 Jan 1998, RABL, C. Carlton, ex *Phellinus* sp.; 14 Jan 1998, RABL, C. Carlton, ex *Ganoderma australe*. **MB**. 5, Pelorus Bridge, 11 Jun 1999, RABL, RJBH, *Phellinus* sp. **DN**. 11, S of Akatore, Allison Res, 24 Feb 2001, JTN, on bracket fungus. **SL**. 3, Tutuku, SW of Owaka, 19 Jan 1978, GK, on *Weinmannia*. 1, no locality data, 2 Sep 1971, M. Warabi.

**Appendix 2.** Geographical coordinates of collecting localities for specimens. Coordinates should read as 00°00'S/000°00'E (W for Chatham Islands (CH)). The 2-letter area codes follow Crosby *et al.* (1998).

15 Mile Creek, NN	4045/17225
Abbey Caves, ND	3543/17419
Abbotsford, DN	4553/17030
Ahaura, BR	4221/17132
Ahimanawa Range, TO/HB	3905/17635
Akatarawa, WN	4058/17506
Akatore, Allison Reserve, DN	4607/17011
Algidus, MC	4314/17121
Aniseed Valley, NN	4123/17309
Aorangi, Poor Knights Islands, ND	3529/17444
Aorere Saddle, Heaphy Track, NN	4053/17226

Aorere Valley, NN	4101/17230
Arthurs Pass, MC	4255/17133
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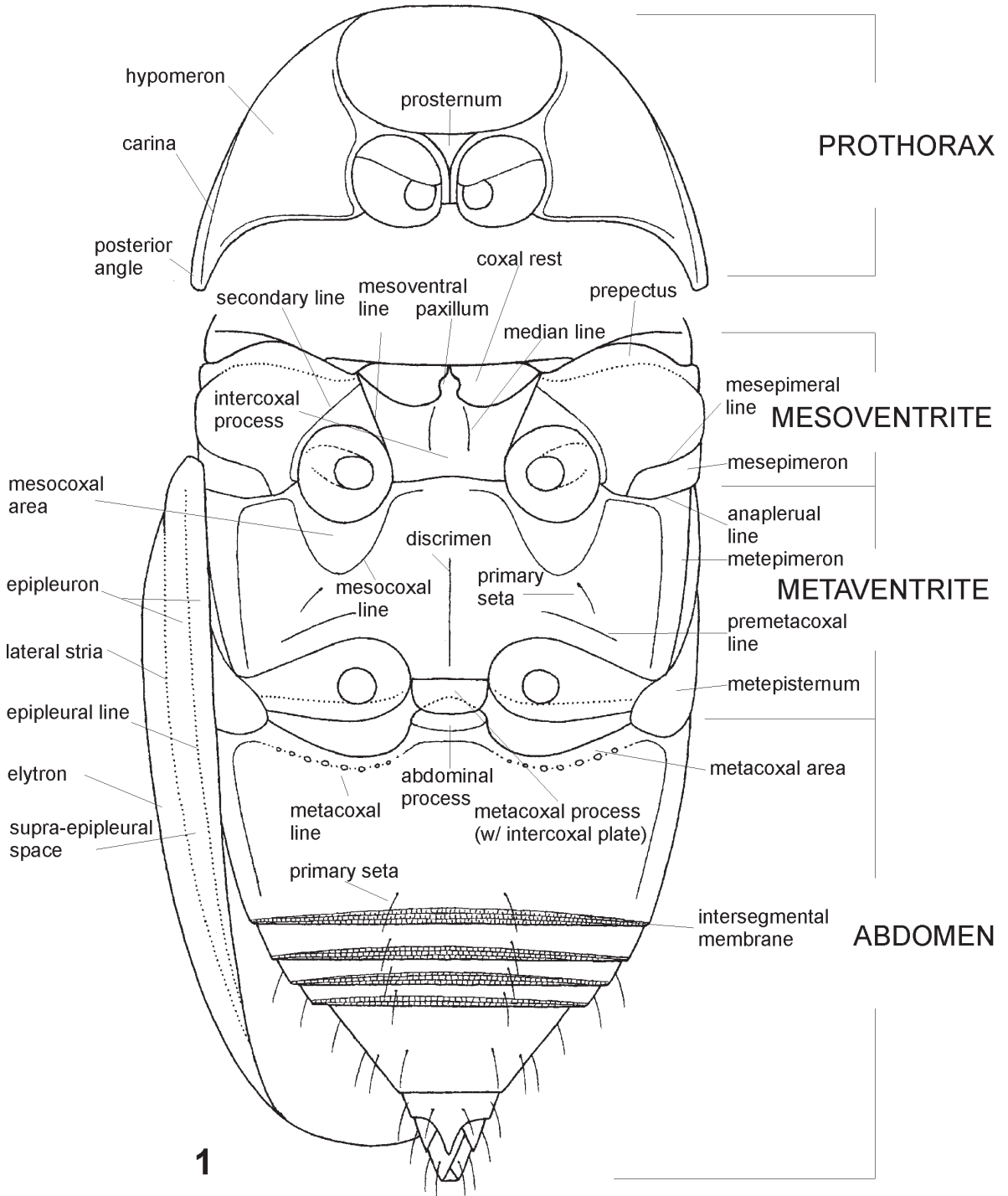
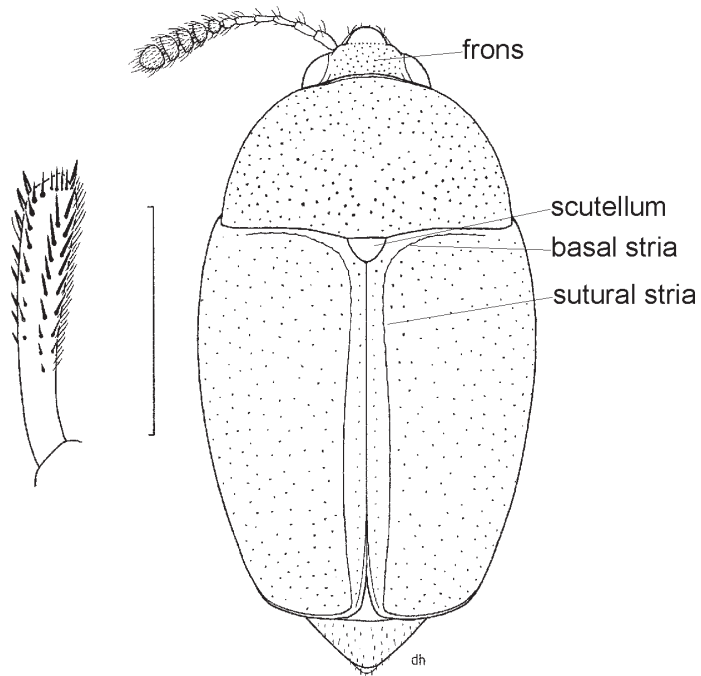
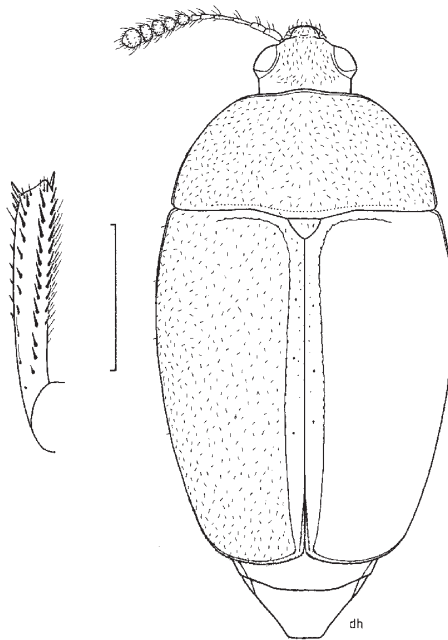


Fig. 1 Ventral view of schematic scaphidiine.

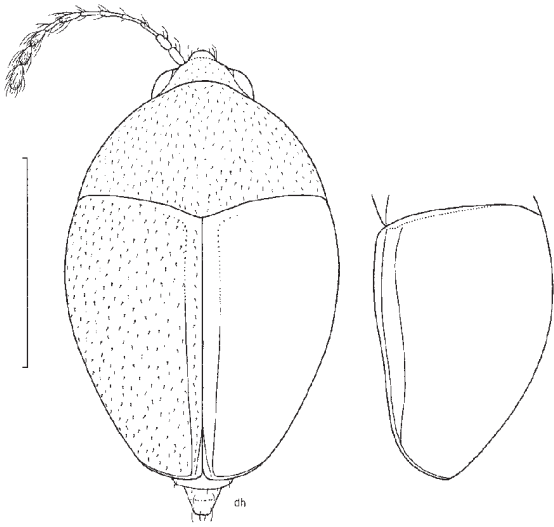


**2** *Cyparium earlyi*

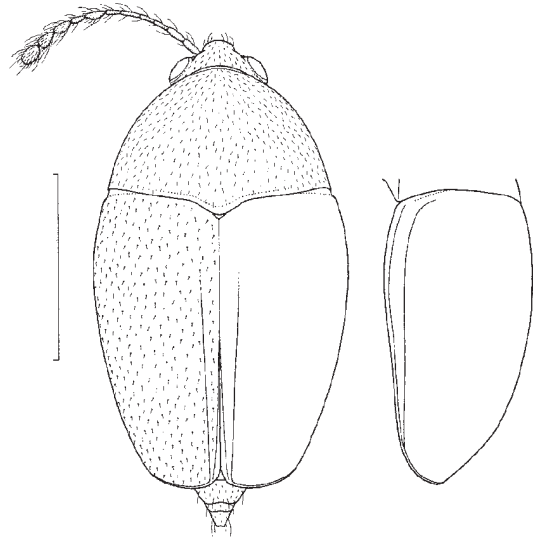


**3** *Cyparium thorpei*

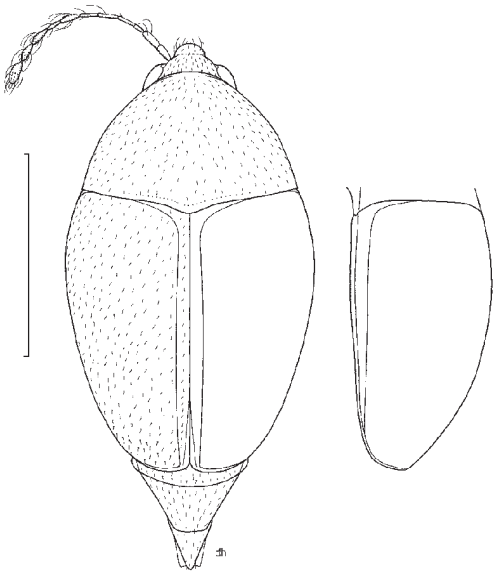
**Fig. 2–3** Dorsal outline of body; lateral view of protibia on left. Scale bar = 1 mm.



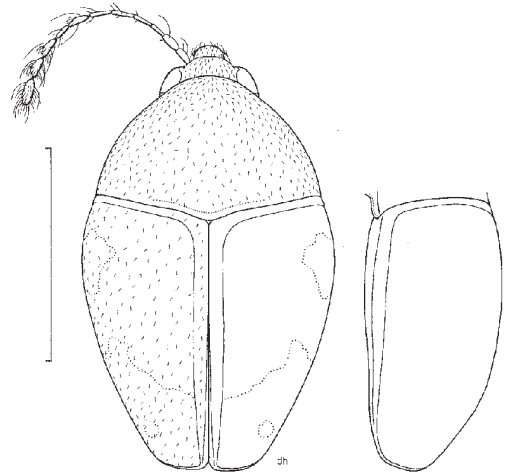
4 *Brachynopus latus*



5 *Brachynopus scutellaris*



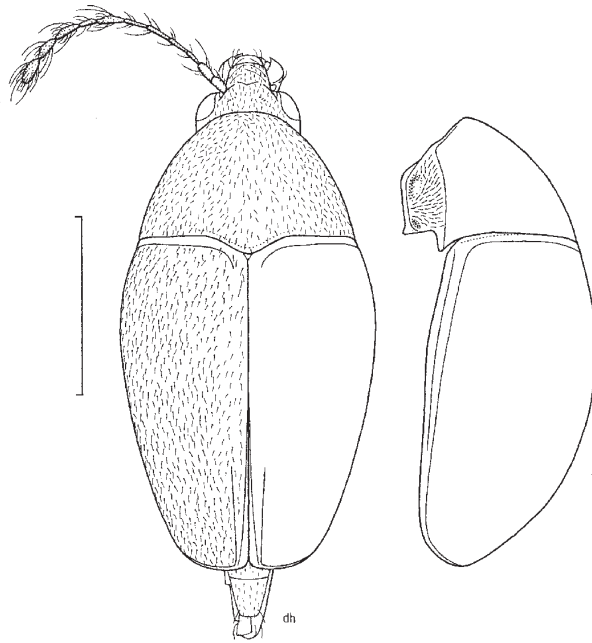
6 *Brachynopus rufus*



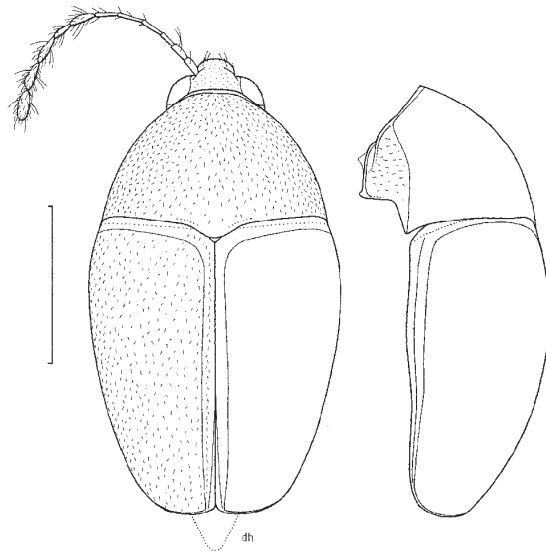
7 *Brachynopus apicellus*

Fig. 4-19 Dorsal outline of body; lateral to right. Scale bar = 1 mm.

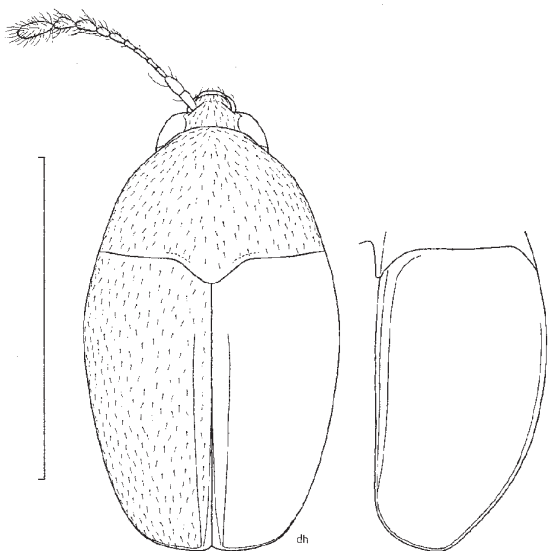




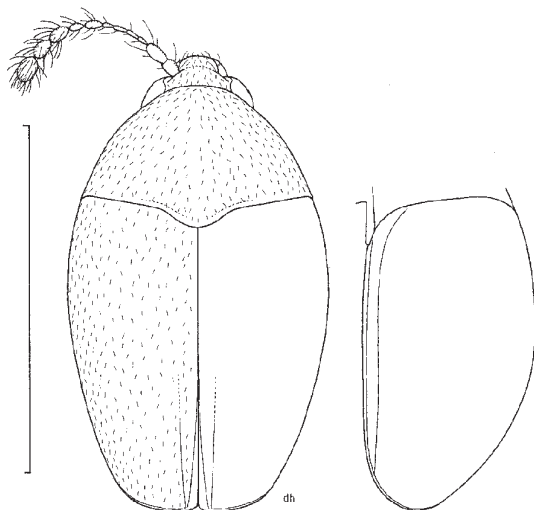
**8** *Notonewtonia thayerae*



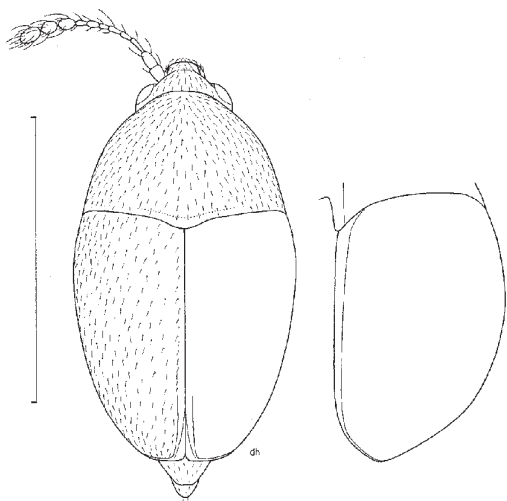
**9** *Notonewtonia watti*



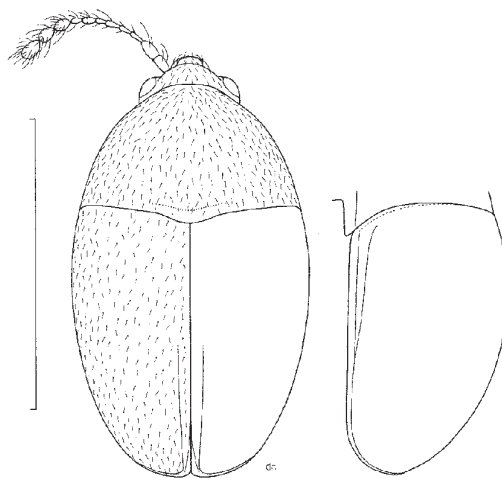
10 *Baeocera actuosa*



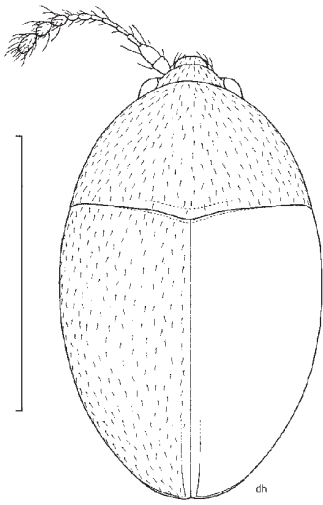
11 *Baeocera abrupta*



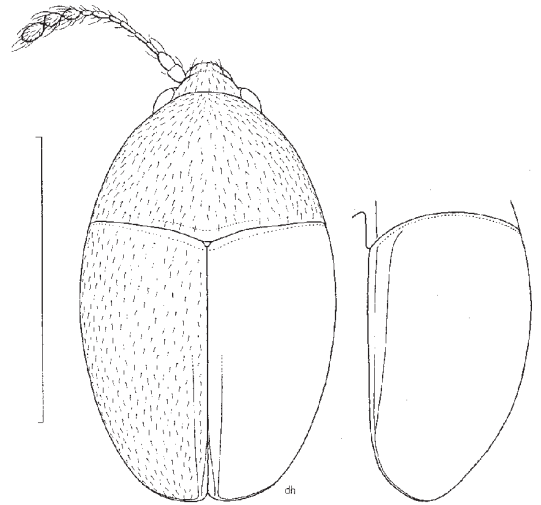
12 *Baeocera epipleuralis*



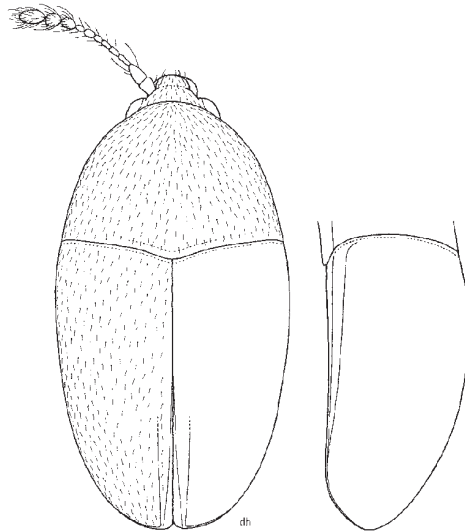
13 *Baeocera punctatissima*



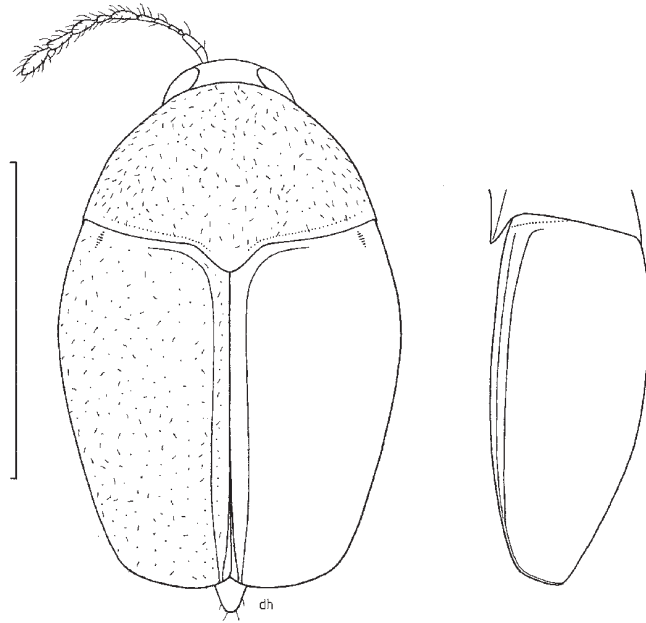
**14** *Baeocera tekootii*



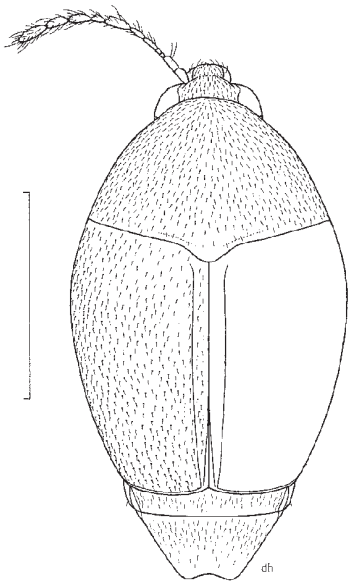
**15** *Baeocera sternalis*



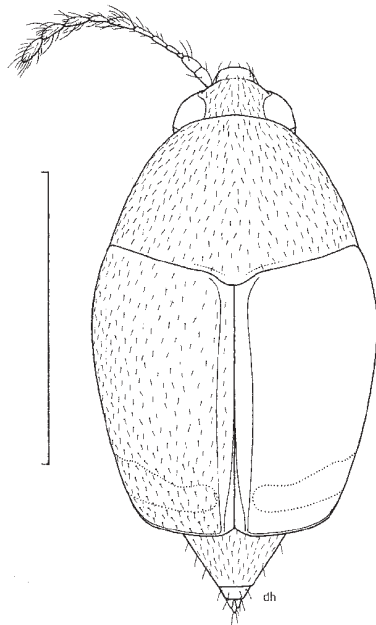
**16** *Baeocera tenuis*



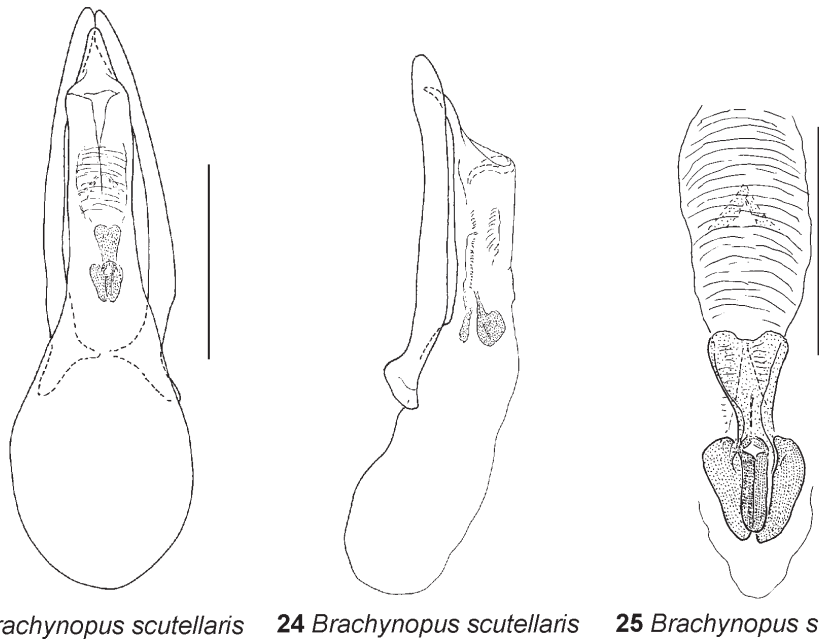
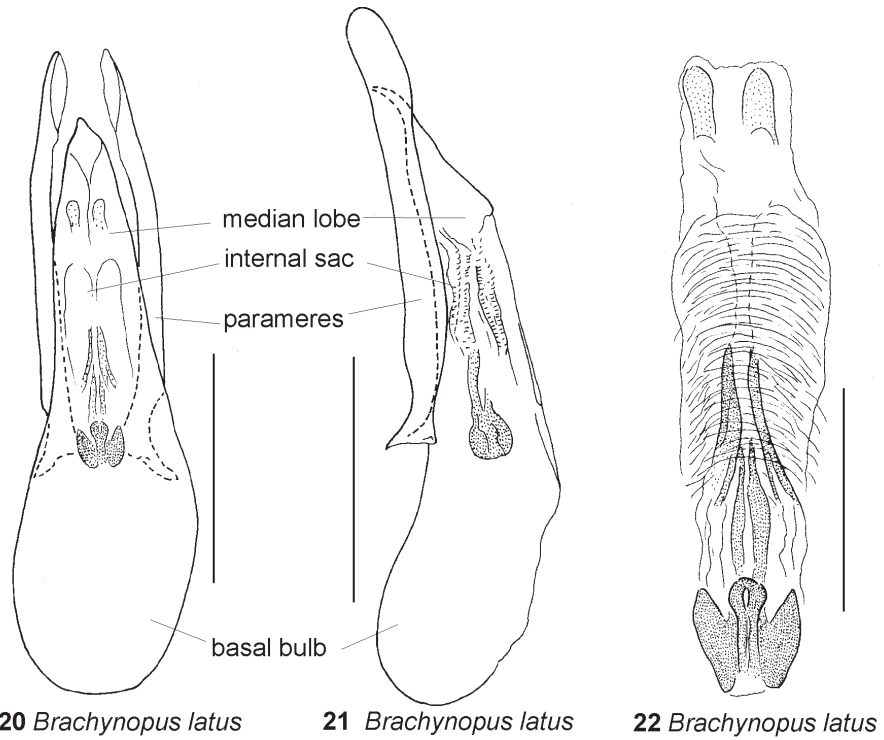
**17** *Scaphisoma hanseni*



**18** *Scaphisoma corcyricum*

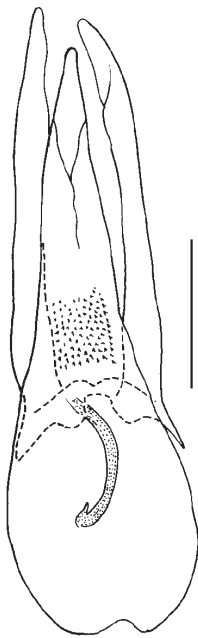


**19** *Scaphisoma funereum*

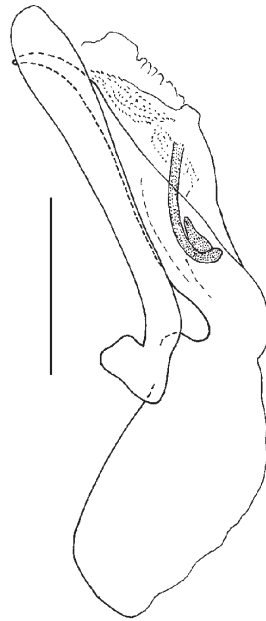


**Fig. 20–25** Aedeagi and internal sacs. (20–22) *Brachynopus latus*: (20) aedeagus, dorsal; (21) aedeagus, lateral; (22) internal sac, dorsal. (23–25) *Brachynopus scutellaris*: (23) aedeagus, dorsal; (24) aedeagus, lateral; (25) internal sac, dorsal. Scale bar: 20, 21, 23 = 0.2 mm; 22, 25 = 0.1 mm.

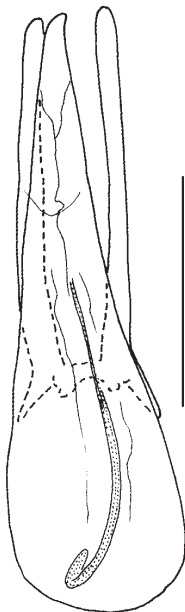




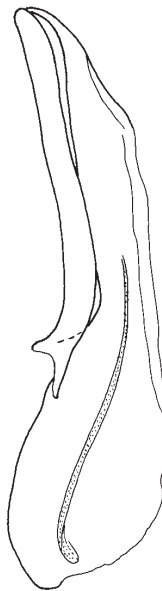
26 *Brachynopus rufus*



27 *Brachynopus rufus*

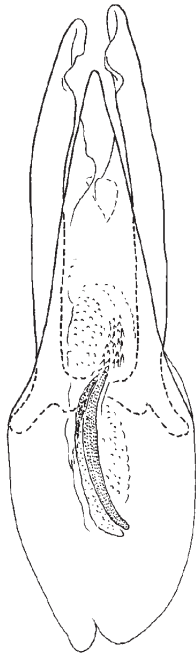
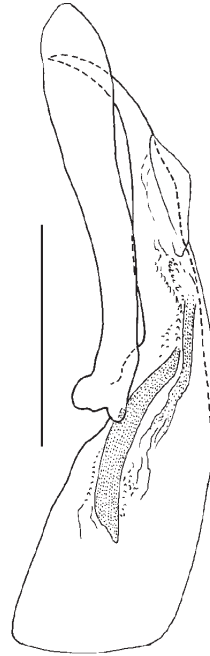
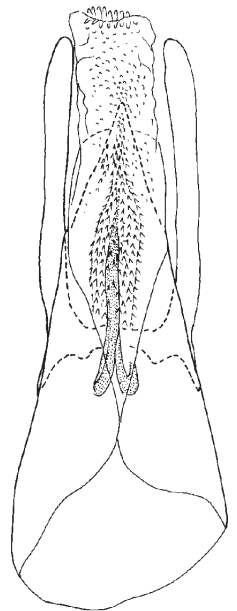


28 *Brachynopus apicellus*

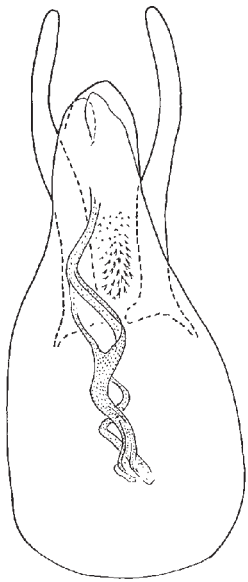
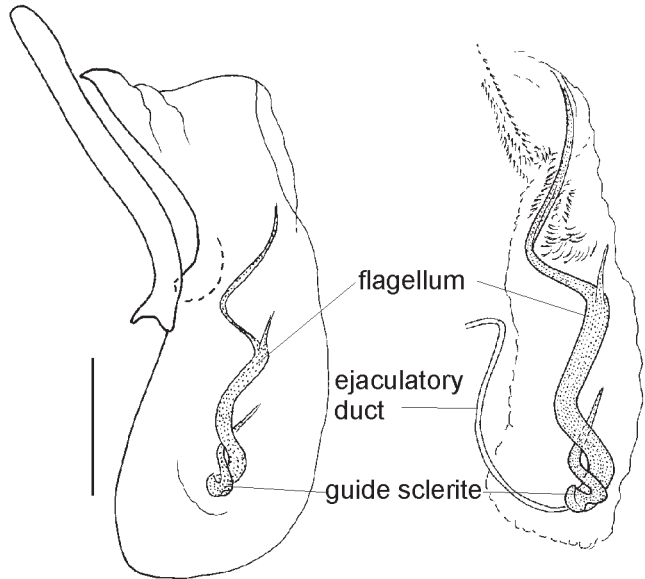
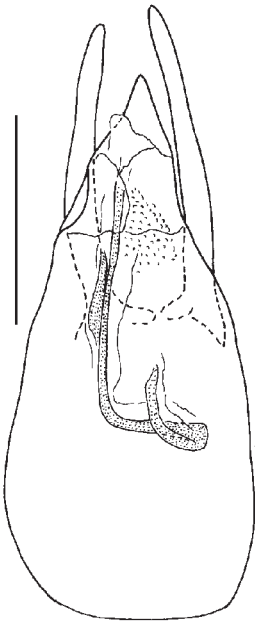
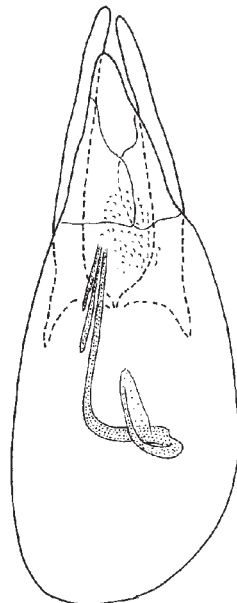
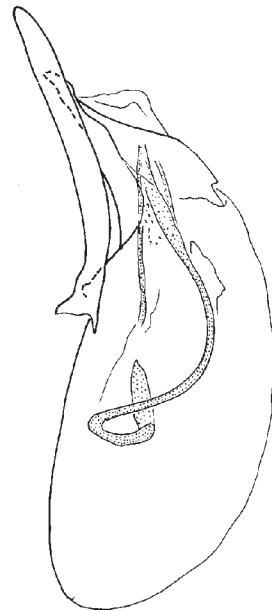


29 *Brachynopus apicellus*

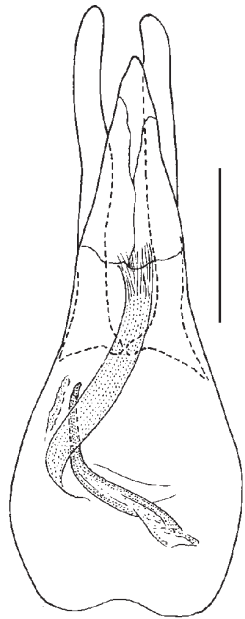
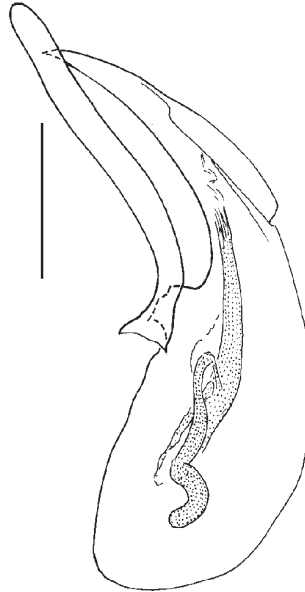
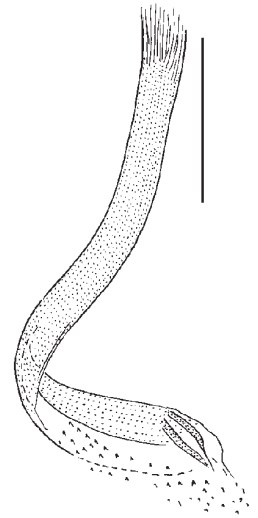
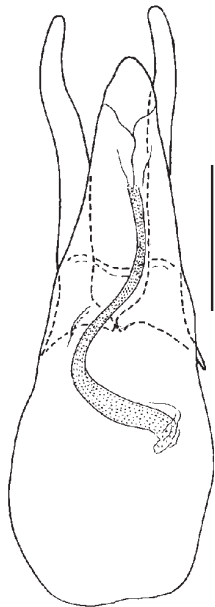
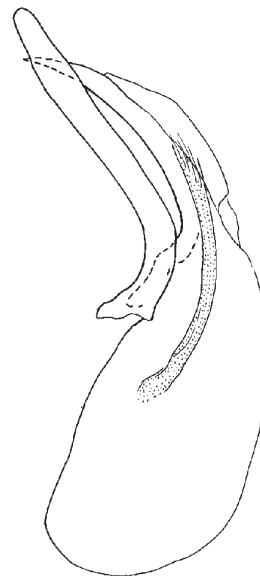
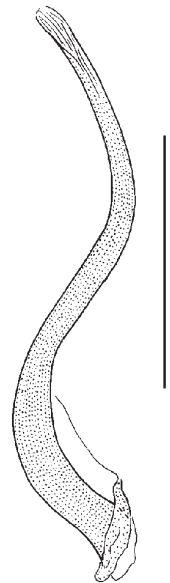
**Fig. 26–29** Aedeagi. (26–27) *Brachynopus rufus*: (26) dorsal; (27) lateral. (28–29) *Brachynopus apicellus*: (28) dorsal; (29) lateral. Scale bar = 0.2 mm.

30 *Notonewtonia thayerae*31 *Notonewtonia thayerae*32 *Notonewtonia watti*33 *Notonewtonia watti*

**Fig. 30–33** Aedeagi. (30–31) *Notonewtonia thayerae*: (30) dorsal; (31) lateral. (32–33) *Notonewtonia watti*: (32) dorsal; (33) lateral. Scale bar = 0.2 mm.

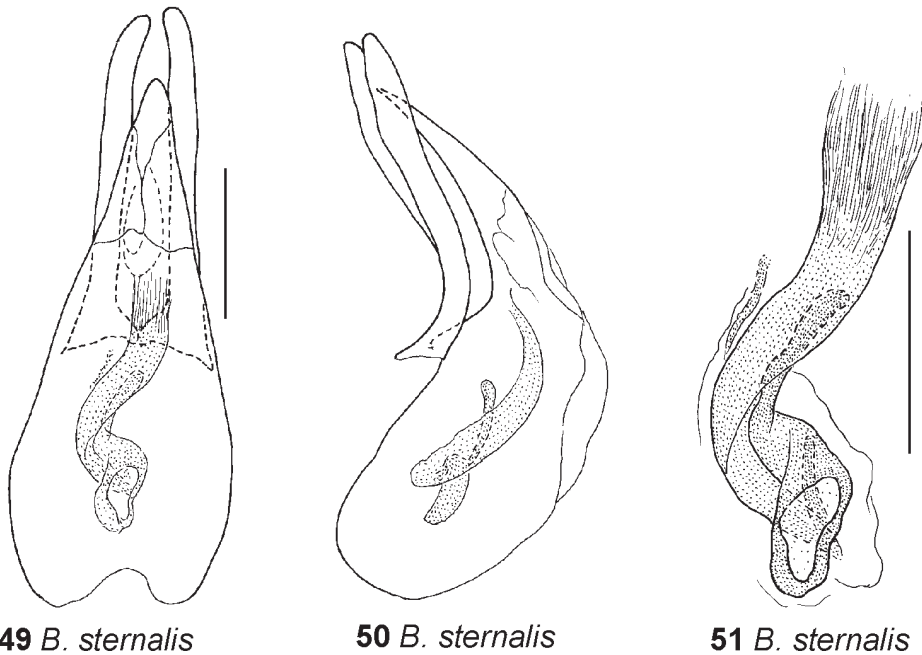
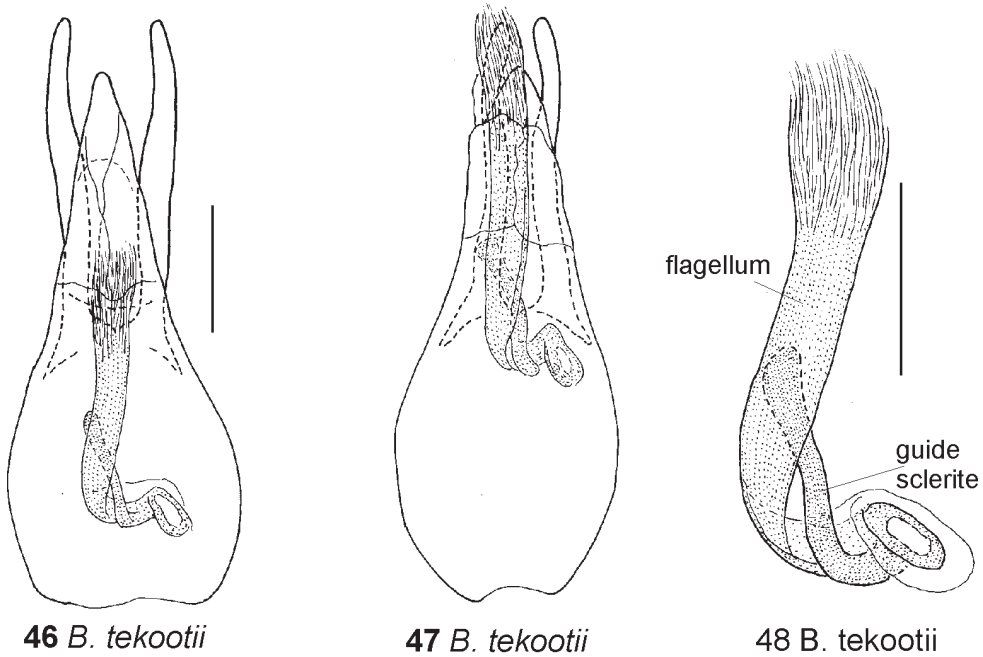
34 *B. actuosa*35 *B. actuosa*36 *B. actuosa*37 *B. abrupta*38 *B. abrupta*39 *B. abrupta*

**Fig. 34–39** Aedeagi and internal sac. (34–37) *Baeocera actuosa*: (34) aedeagus, dorsal; (35) aedeagus, lateral; (36) internal sac, lateral. (37–39) *Baeocera abrupta*: (37–38) aedeagus, dorsal; (39) aedeagus, lateral. Scale bar = 0.1 mm.

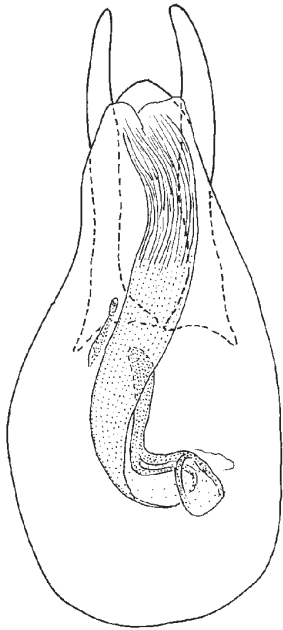
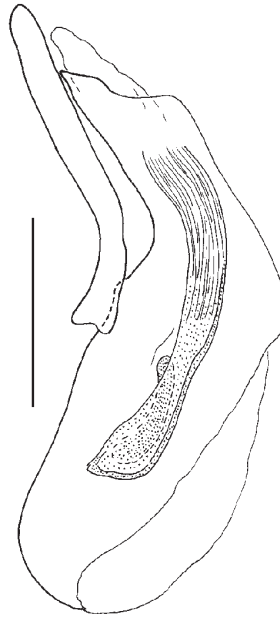
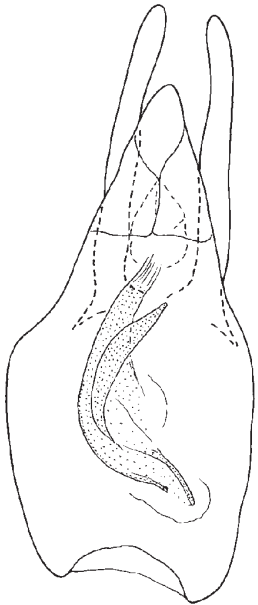
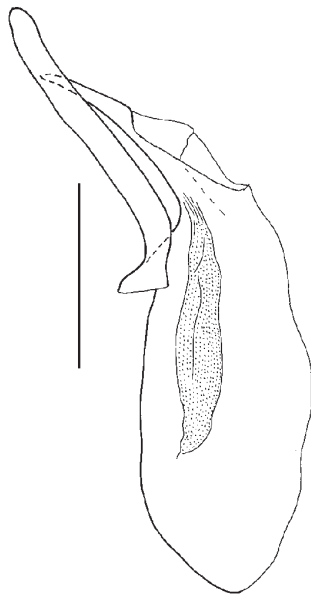
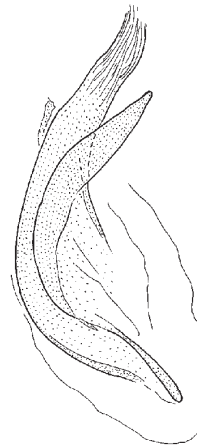
40 *B. epipleuralis*41 *B. epipleuralis*42 *B. epipleuralis*43 *B. punctatissima*44 *B. punctatissima*45 *B. punctatissima*

**Fig. 40–45** Aedeagi and internal sacs. (40–42) *Baeocera epipleuralis*: (40) aedeagus, dorsal; (41) aedeagus, lateral; (42) internal sac, dorsal. (43–45) *Baeocera punctatissima*: (43) aedeagus, dorsal; (44) aedeagus, lateral; (45) internal sac, dorsal. Scale bar: 42 = 0.05 mm; others = 0.1 mm.

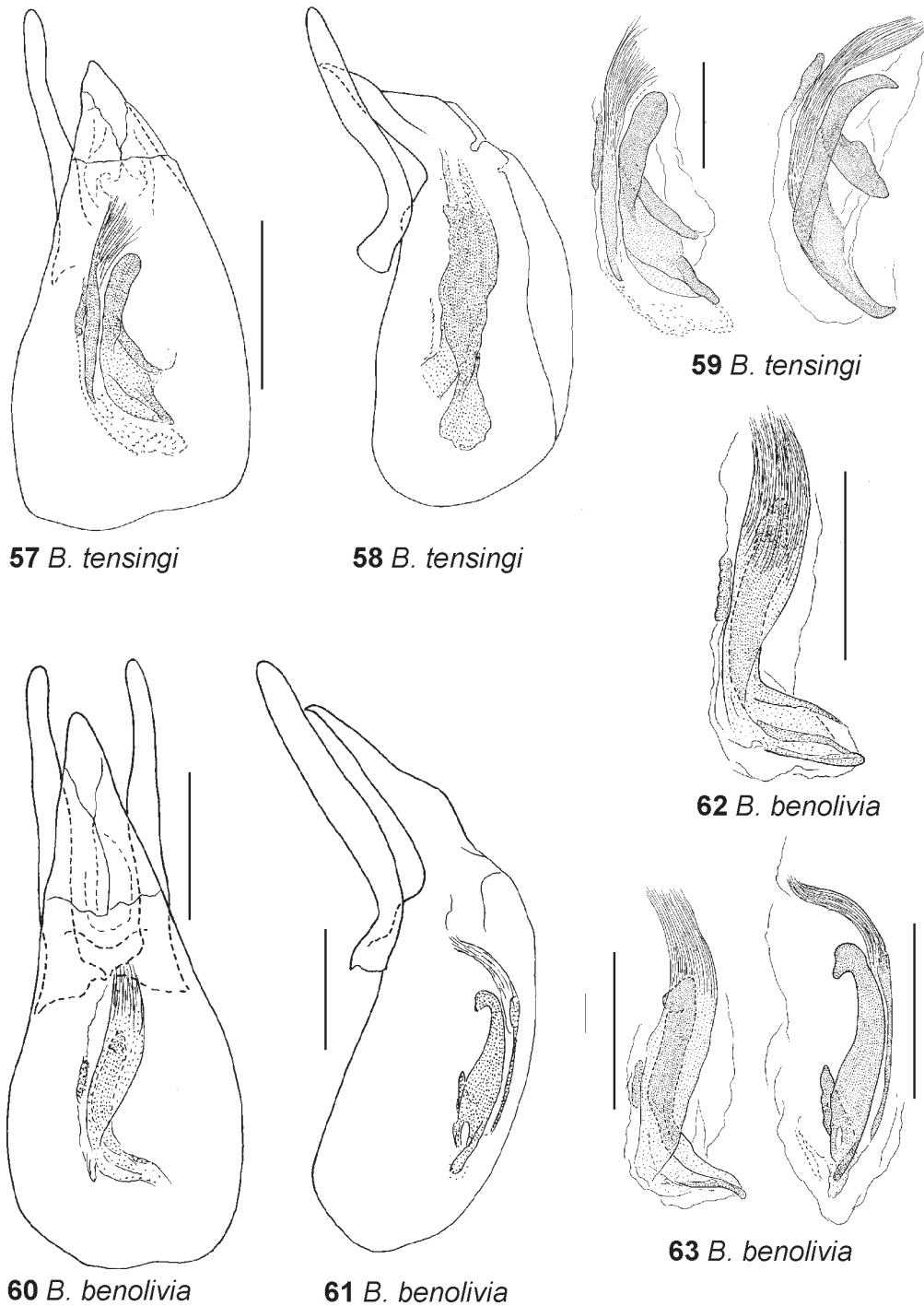




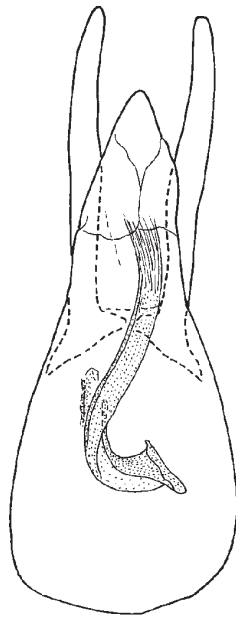
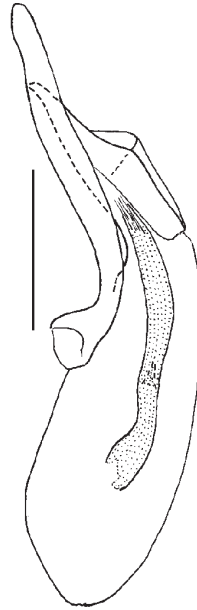
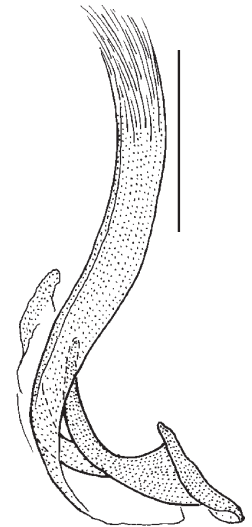
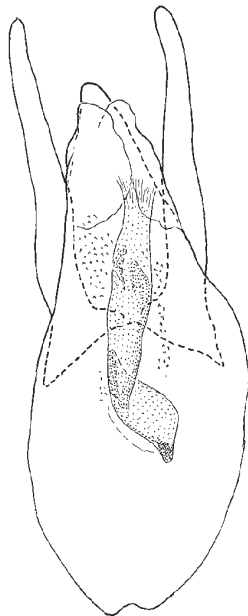
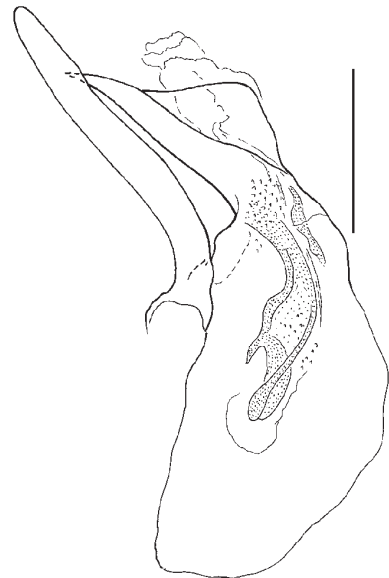
**Fig. 46–51** Aedeagi and internal sacs. (46–48) *Baeocera tekootii*: (46–47) aedeagus, dorsal; (48) internal sac, dorsal. (49–51) *Baeocera sternalis*: (49) aedeagus, dorsal; (50) aedeagus, lateral; (51) internal sac, dorsal. Scale bar = 0.1 mm.

52 *B. tenuis*53 *B. tenuis*54 *B. hillaryi*55 *B. hillaryi*56 *B. hillaryi*

**Fig. 52–56** Aedeagi and internal sac. (52–53) *Baecocera tenuis*: (52) aedeagus, dorsal; (53) aedeagus, lateral. (54–56) *Baecocera hillaryi*: (54) aedeagus, dorsal; (55) aedeagus, lateral; (56) internal sac, lateral. Scale bar: 52, 53, 56 = 0.1 mm; 54, 55 = 0.2 mm.

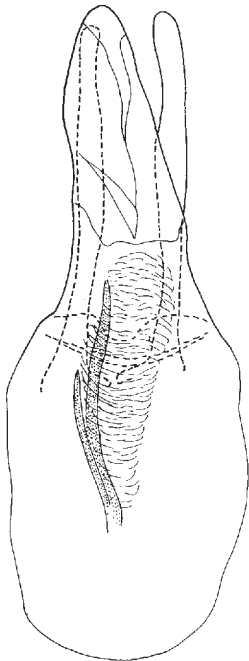
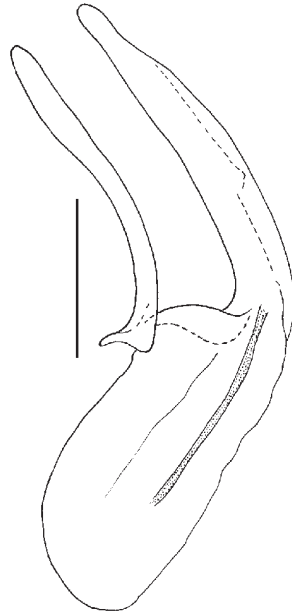
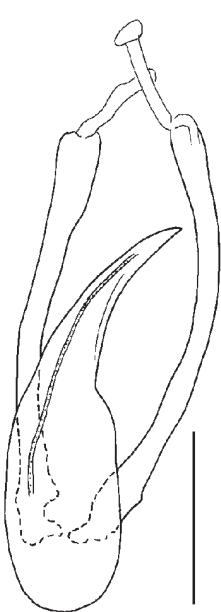
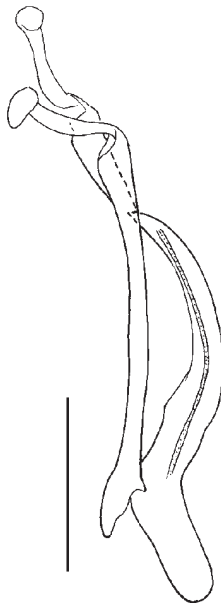
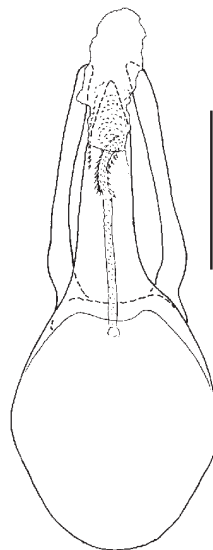


**Fig. 57–63** Aedeagi and internal sacs. (57–59) *Baeocera tensingi*: (57) aedeagus, dorsal; (58) aedeagus, lateral; (59) internal sacs, lateral. (60–63) *Baeocera benolivia*: (60) aedeagus, dorsal; (61) aedeagus, lateral; (62) internal sac, dorsal; (63) internal sacs, dorsal (left) and lateral (right). Scale bar: 57 = 0.2 mm; others = 0.1 mm.

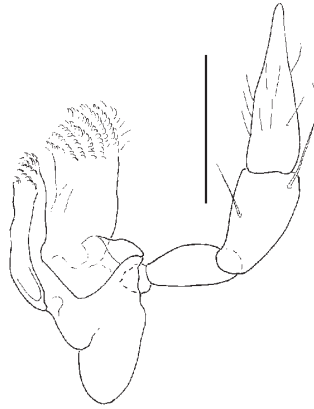
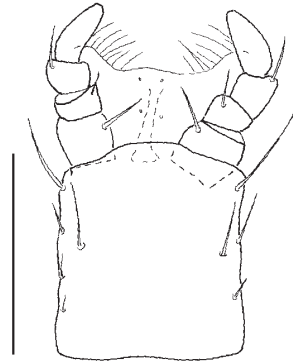
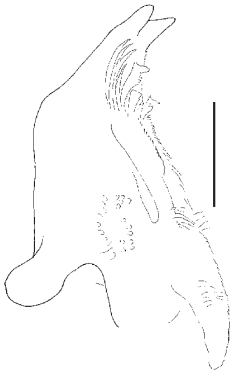
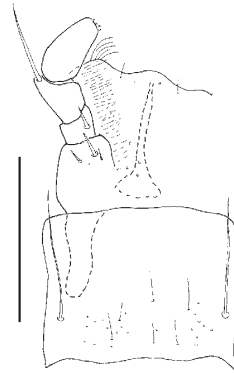
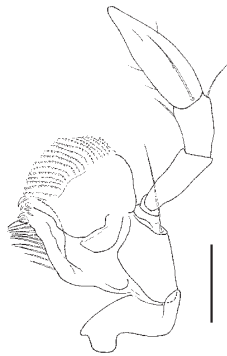
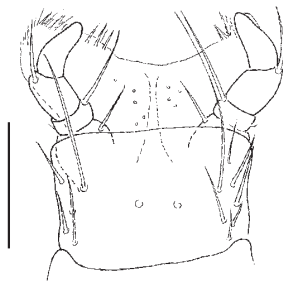
64 *B. elenae*65 *B. elenae*66 *B. elenae*67 *B. karamea*68 *B. karamea*

**Fig. 64–68** Aedeagi and internal sac. (64–66) *Baeocera elenae*: (64) aedeagus, dorsal; (65) aedeagus, lateral; (66) internal sac, dorsal. (67–68) *Baeocera karamea*: (67) aedeagus, dorsal; (68) aedeagus, lateral. Scale bar: 66 = 0.5 mm; others = 0.1 mm.

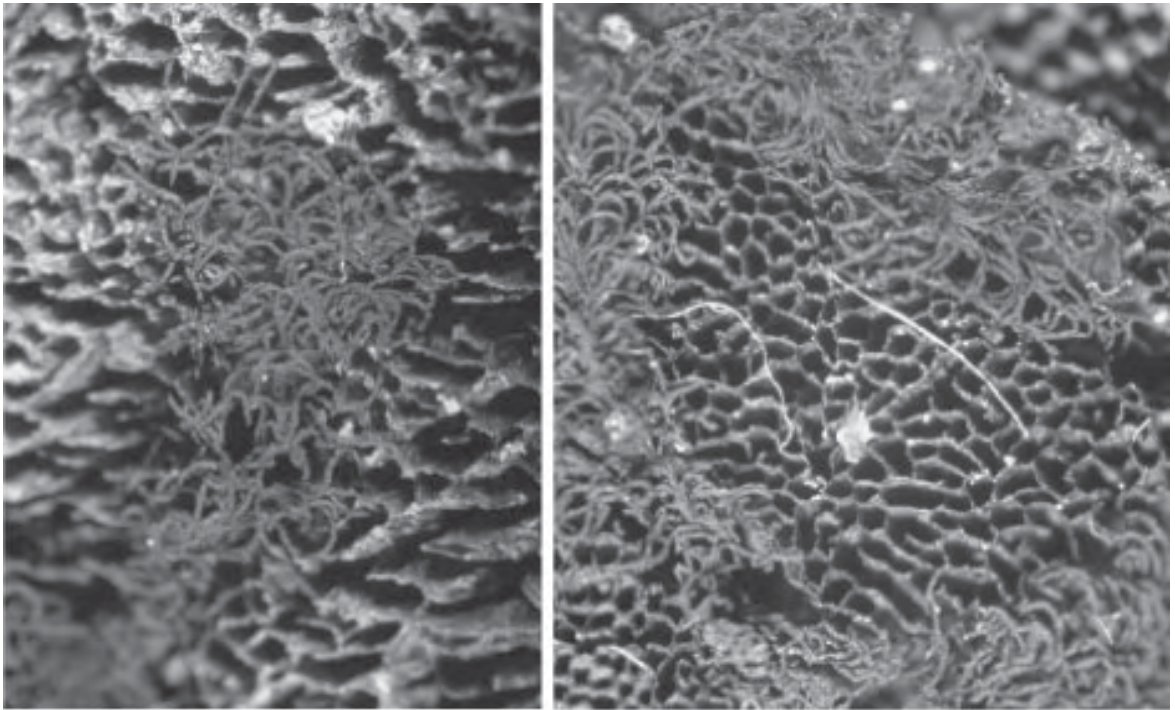


69 *S. henseni*70 *S. henseni*71 *S. funereum*72 *S. funereum*73 *S. corcyricum*

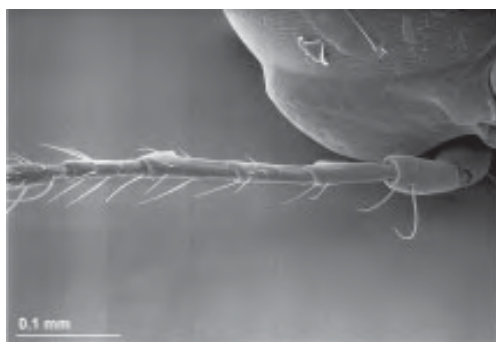
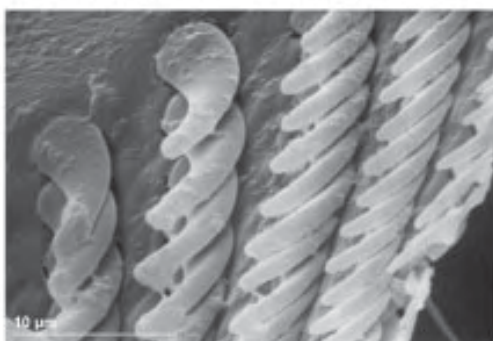
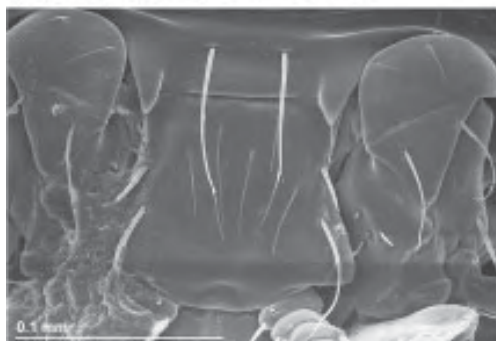
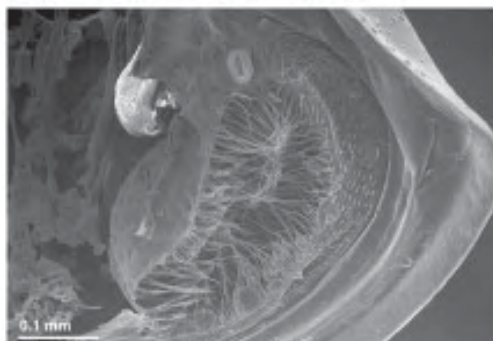
**Fig. 69–73** Aedeagi. (69–70) *Scaphisoma henseni*: (69) dorsal; (70) lateral. (71–72) *Scaphisoma funereum*: (71) dorsal; (72) lateral. (73) *Scaphisoma corcyricum*, dorsal. Scale bar: 73 = 0.2 mm; others = 0.1 mm.

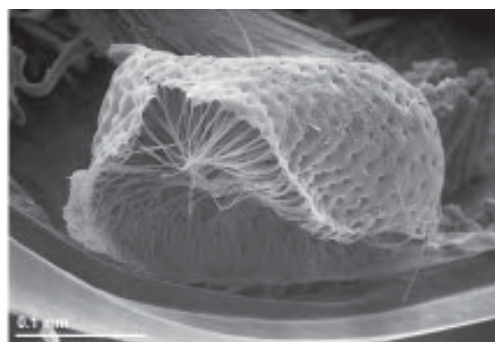
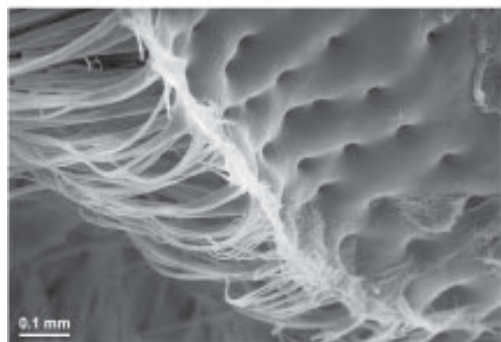
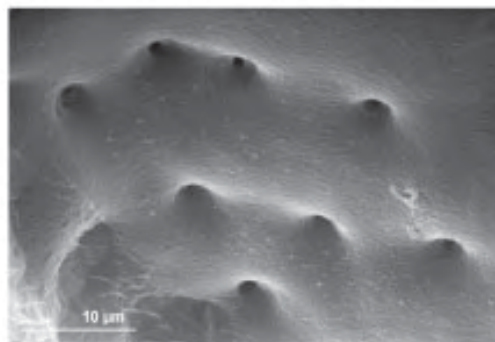
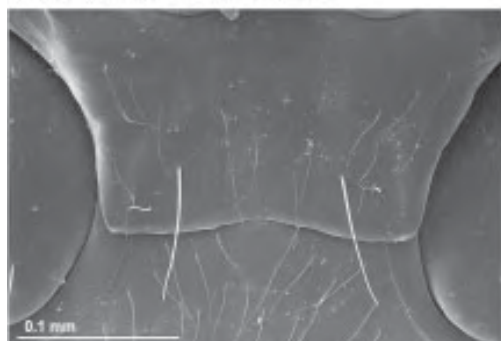
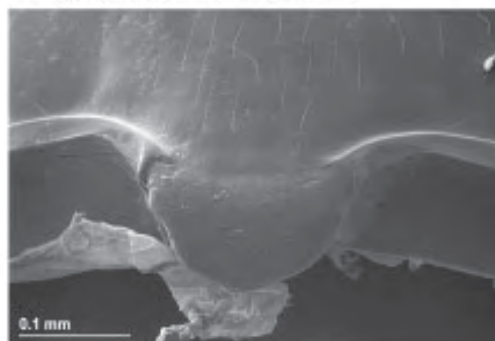
74 *B. apicellus*, mandible75 *B. apicellus*, maxilla76 *B. apicellus*, labium77 *N. thayerae*, mandible78 *N. thayerae*, maxilla79 *N. thayerae*, labium80 *N. watti*, mandible81 *N. watti*, maxilla82 *N. watti*, labium

**Fig. 74–82** Mandibles, maxillae, and labia. (74–76) *Baeocera apicellus*. (77–79) *Notonewtonia thayerae*. (80–82) *Notonewtonia watti*. Scale bar = 0.1 mm.

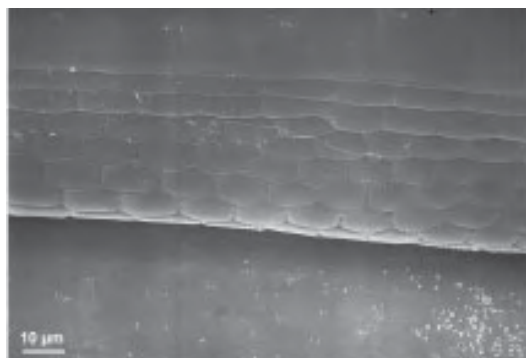
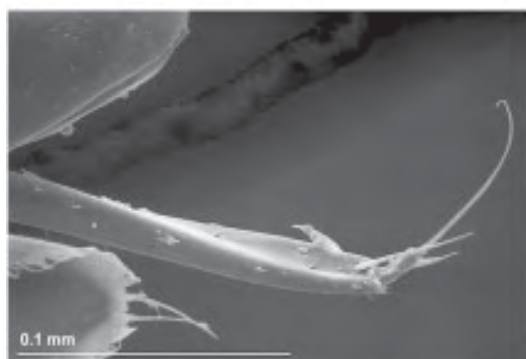
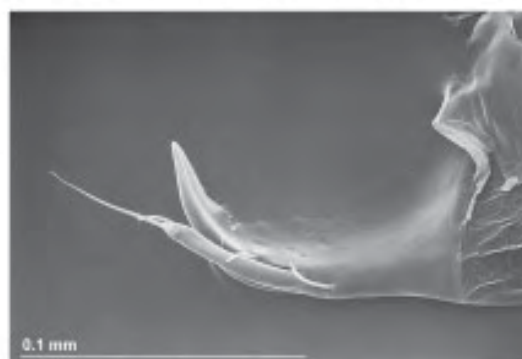
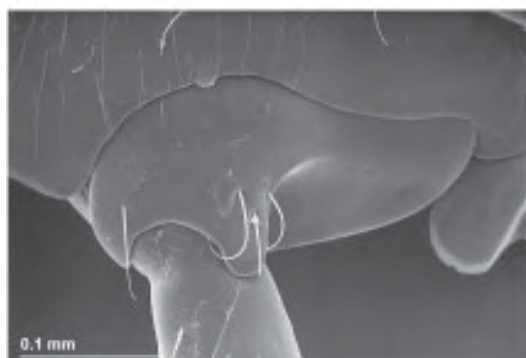
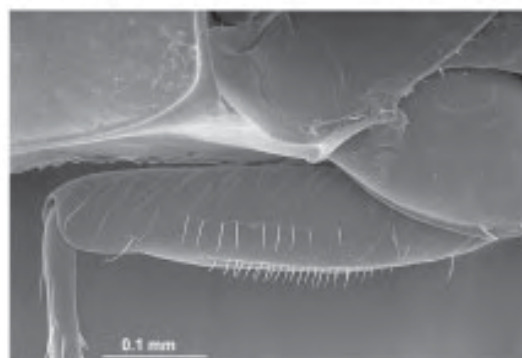


83 *Brachynopus latus*, larval canopy retreats on *Coltricia cinnamomea* (Polyporales)

84 *Brachynopus latus*, ventrolateral view of head85 *Baeocera actuosa*, detail of terminal antennomeres86 *Baeocera actuosa*, ventral view of mouthparts87 *Brachynopus latus*, ventral view of mouthparts88 *Brachynopus latus*, detail of maxilla89 *Brachynopus latus*, detail of galea90 *Brachynopus latus*, detail of mentum91 *Brachynopus latus*, corbiculum

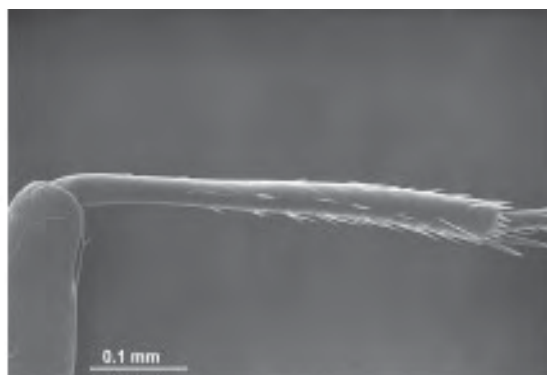
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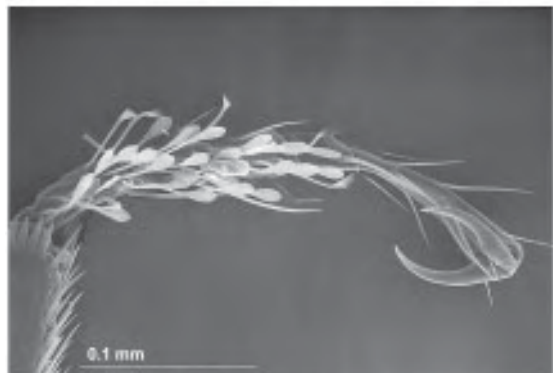
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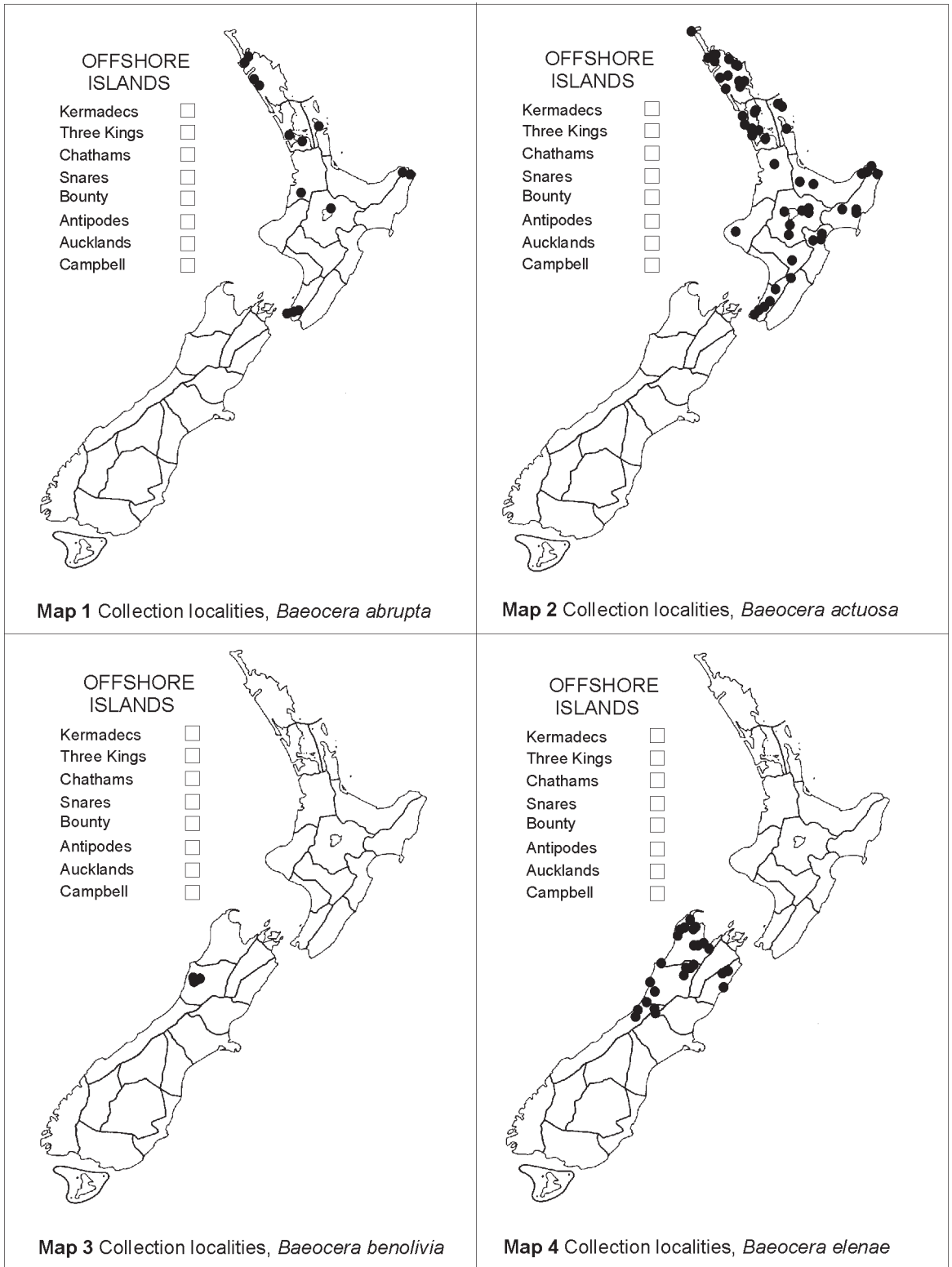
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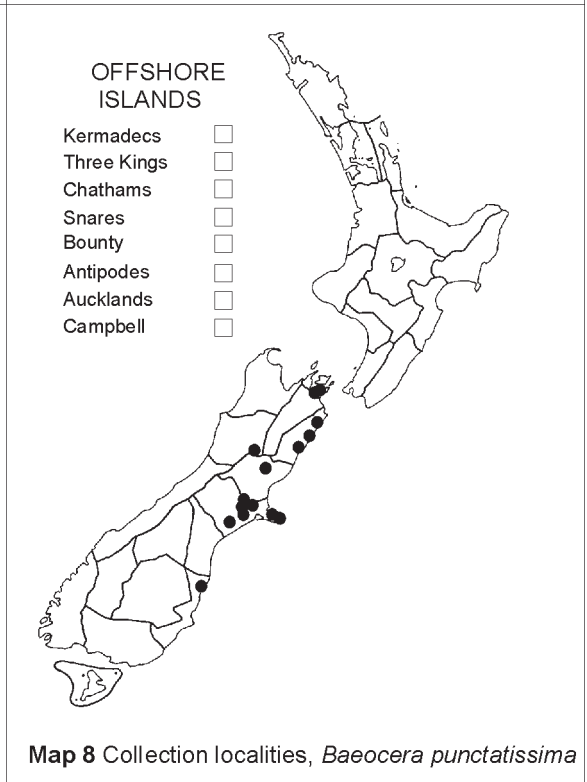
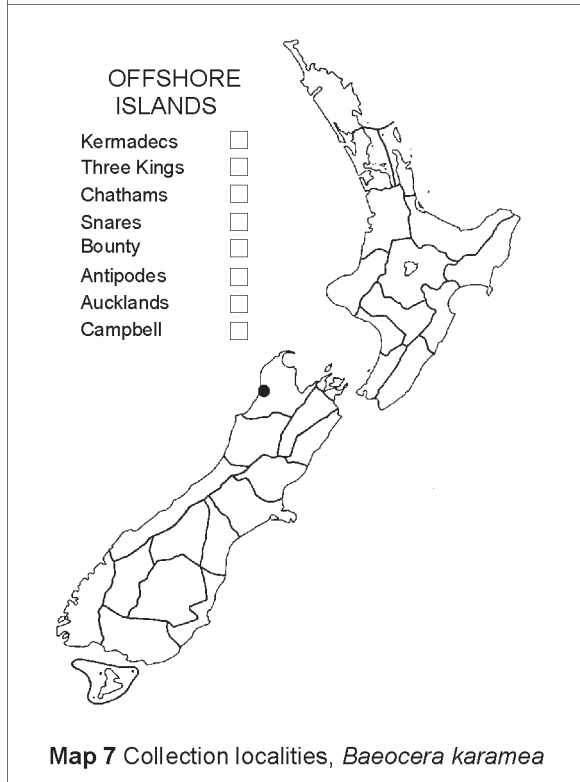
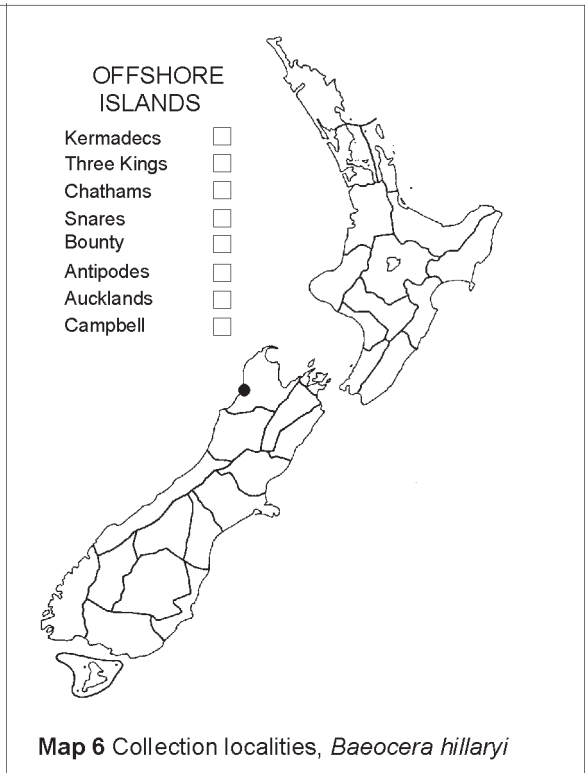
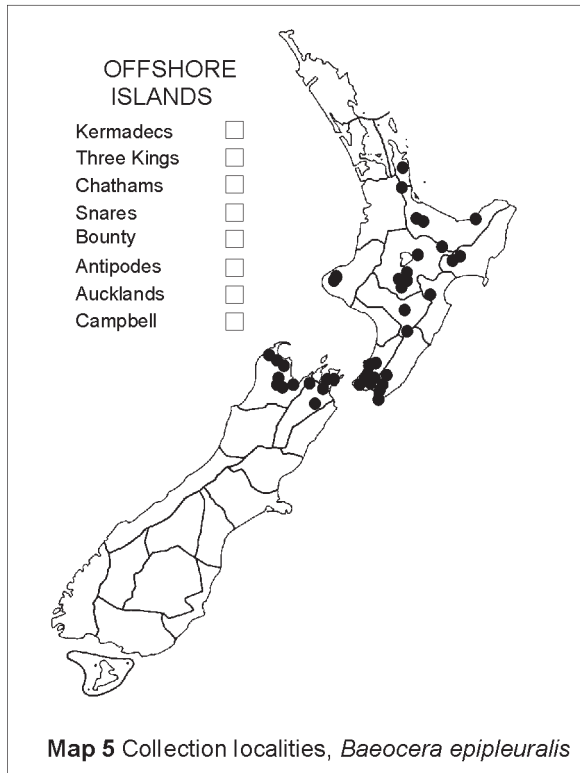


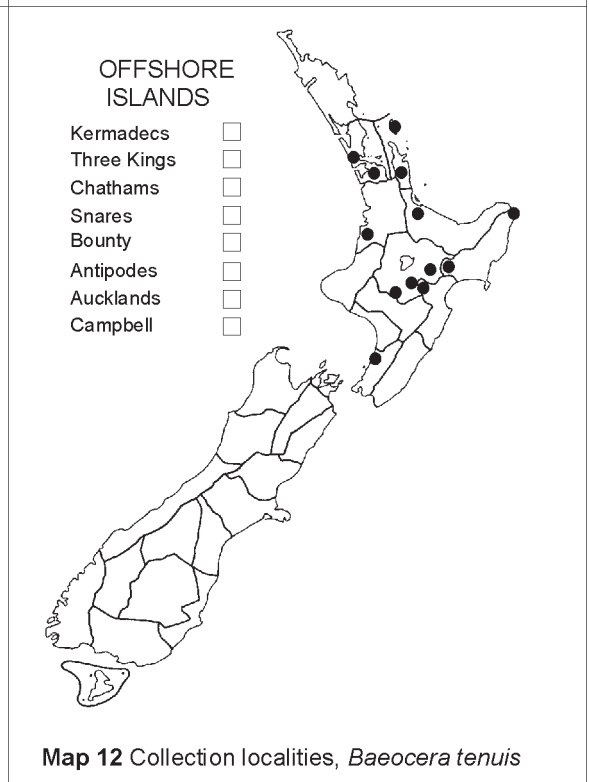
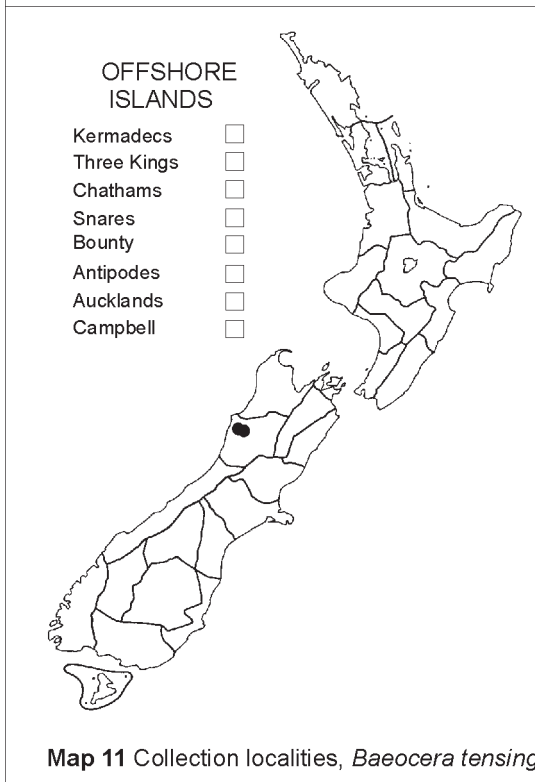
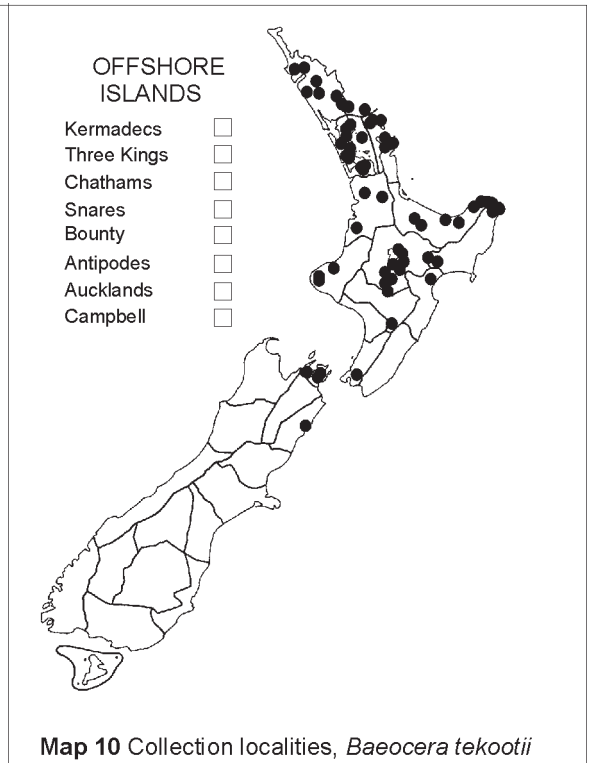
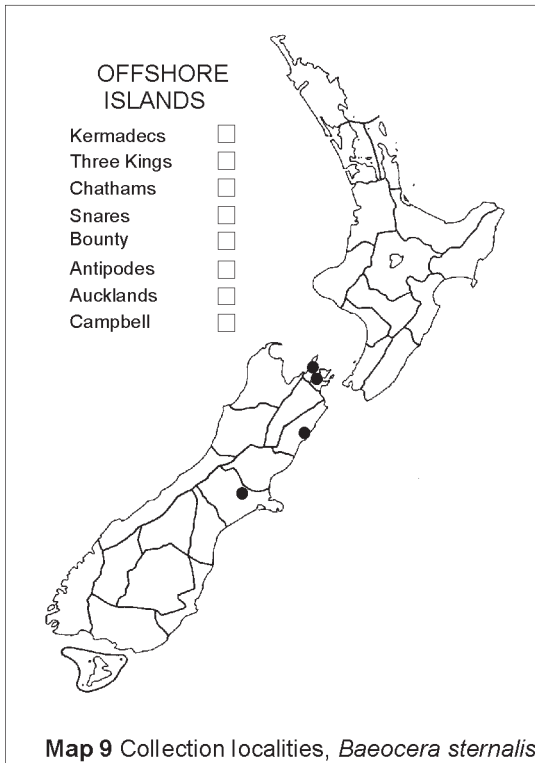
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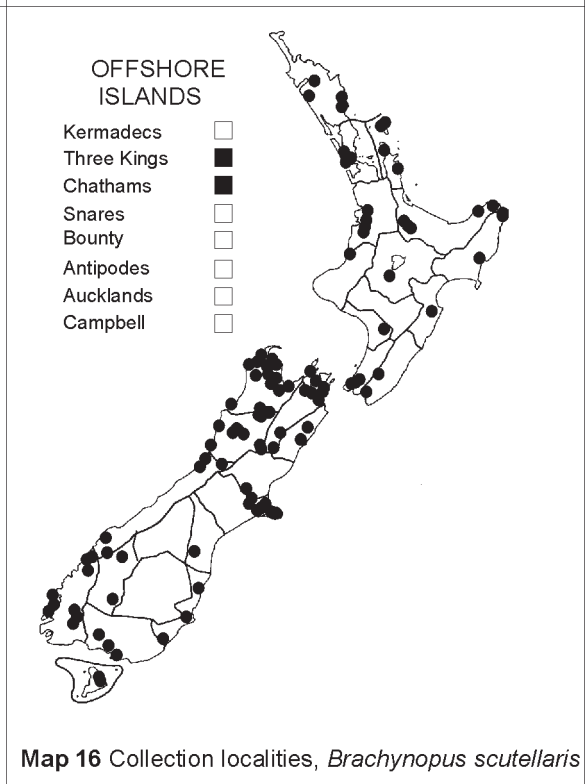
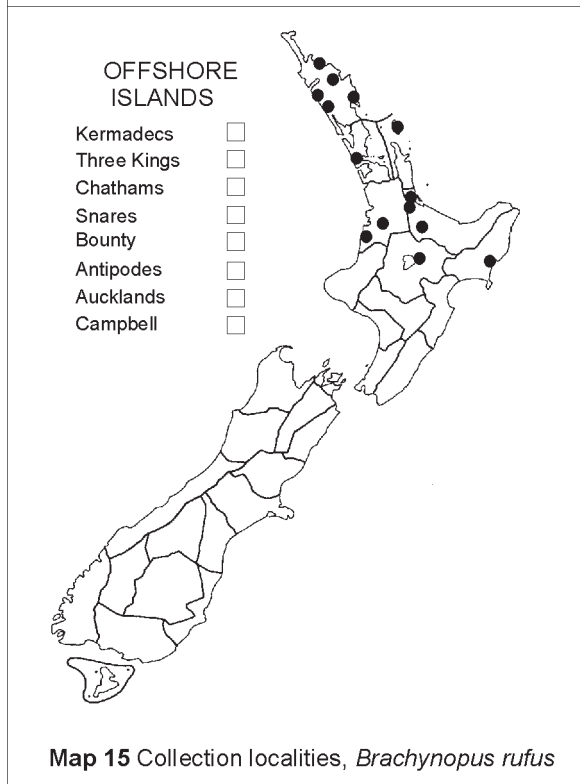
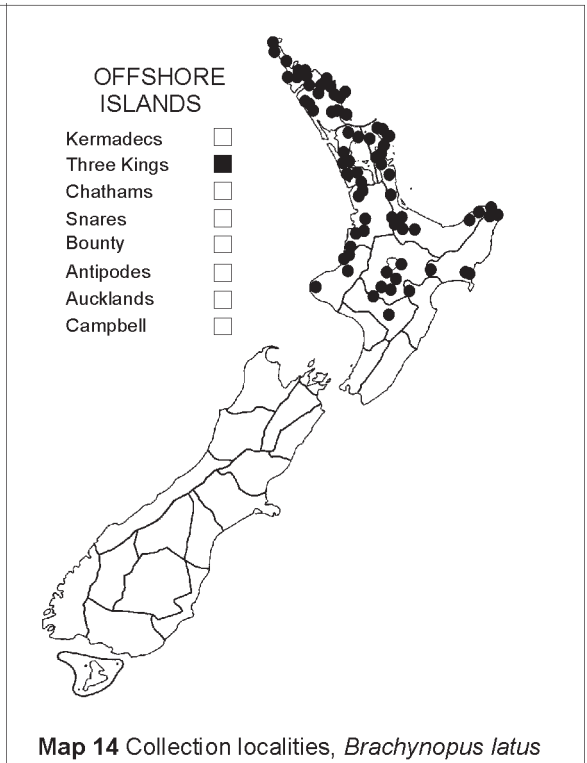
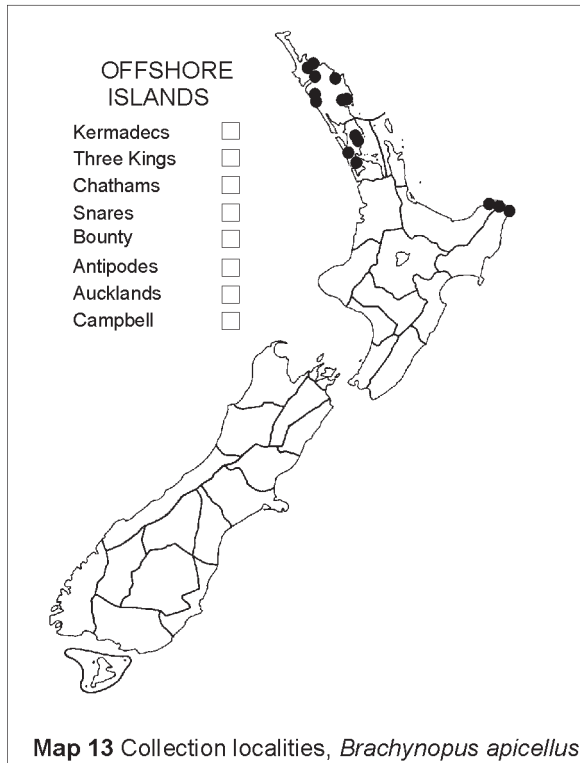
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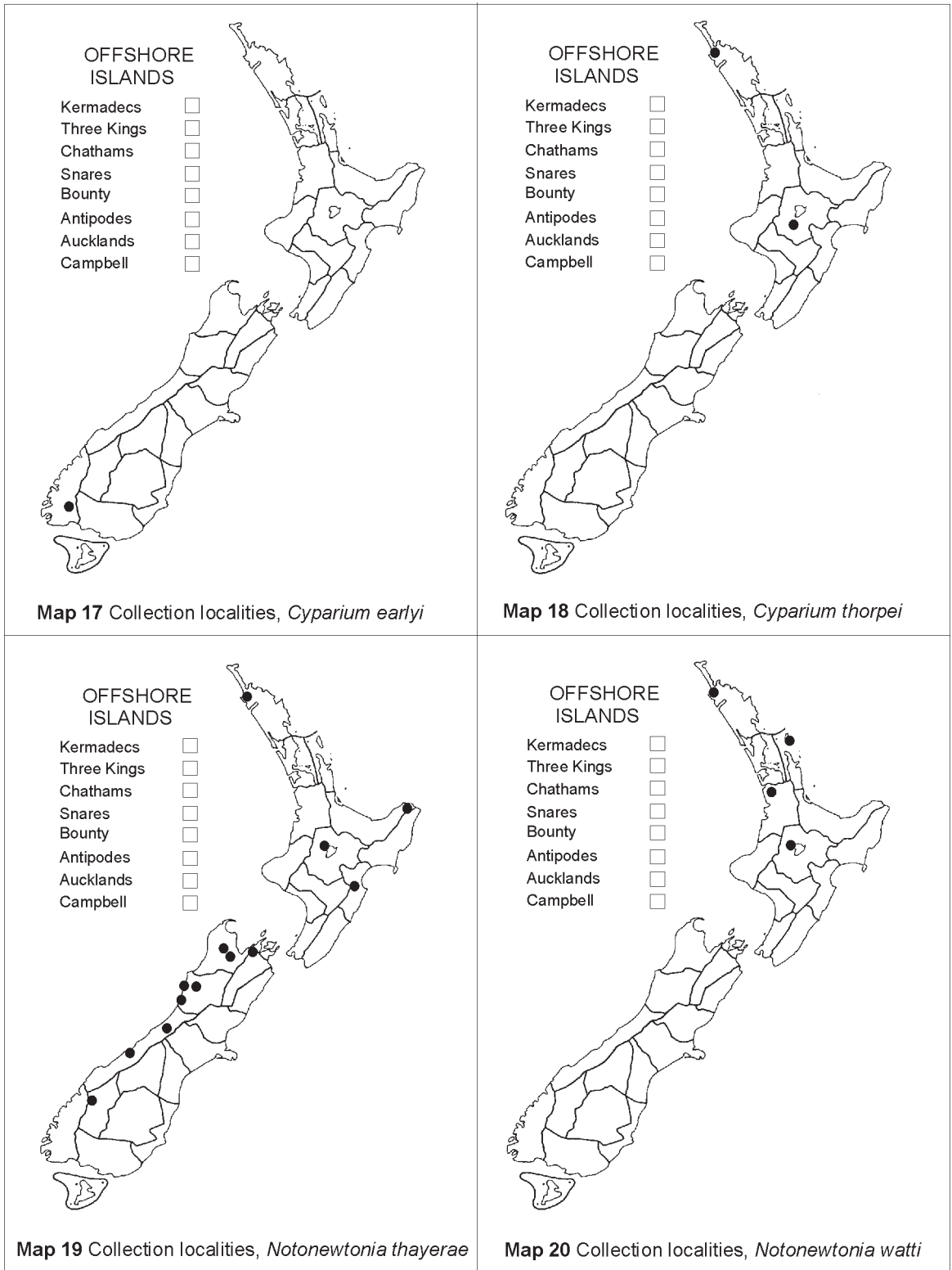


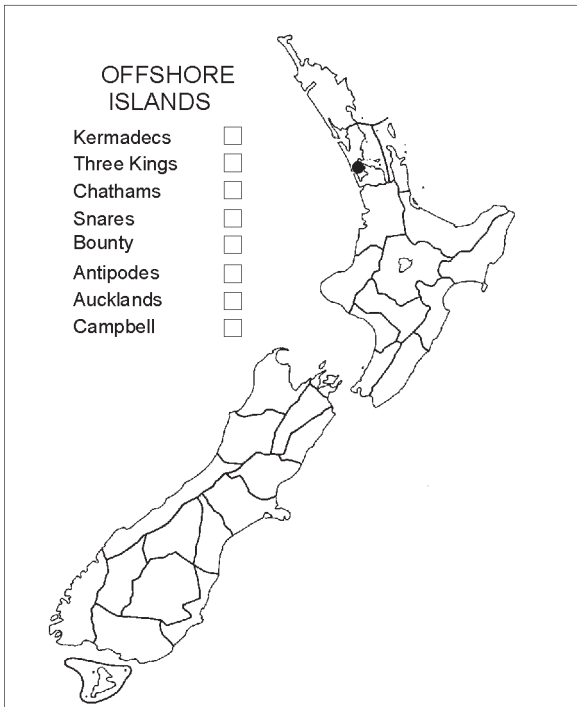




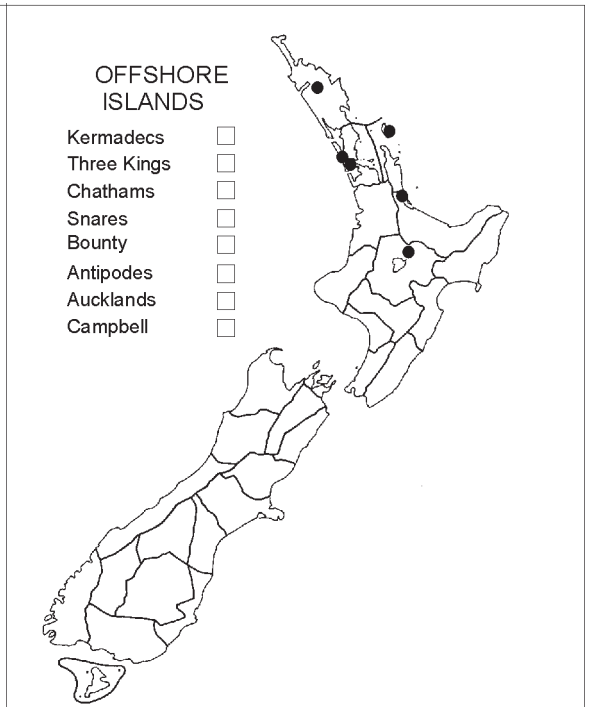




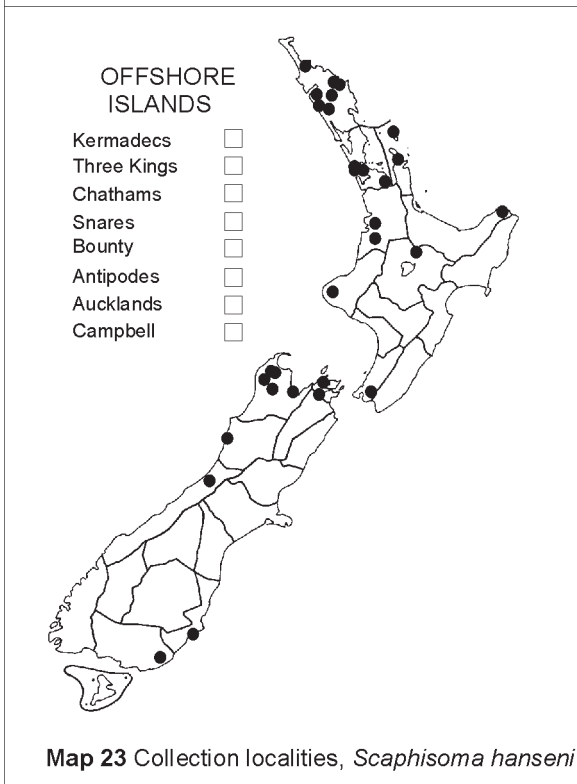




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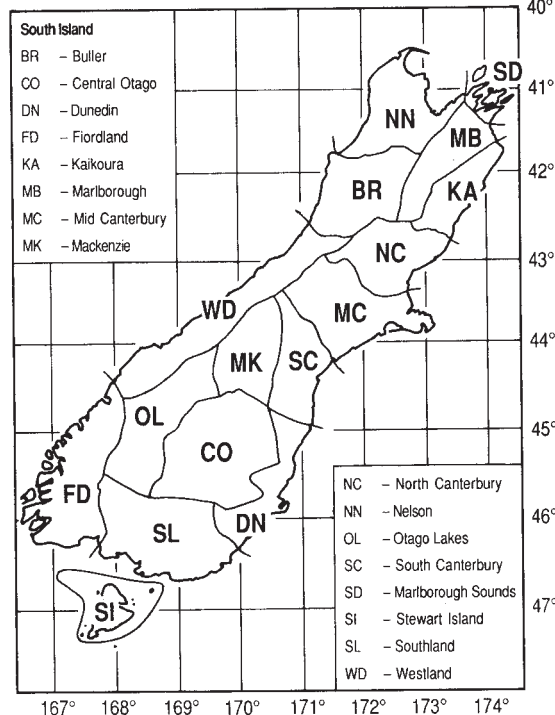
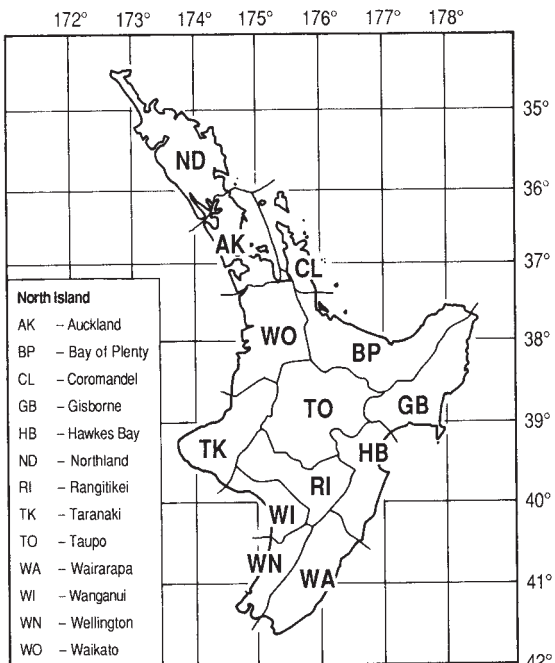


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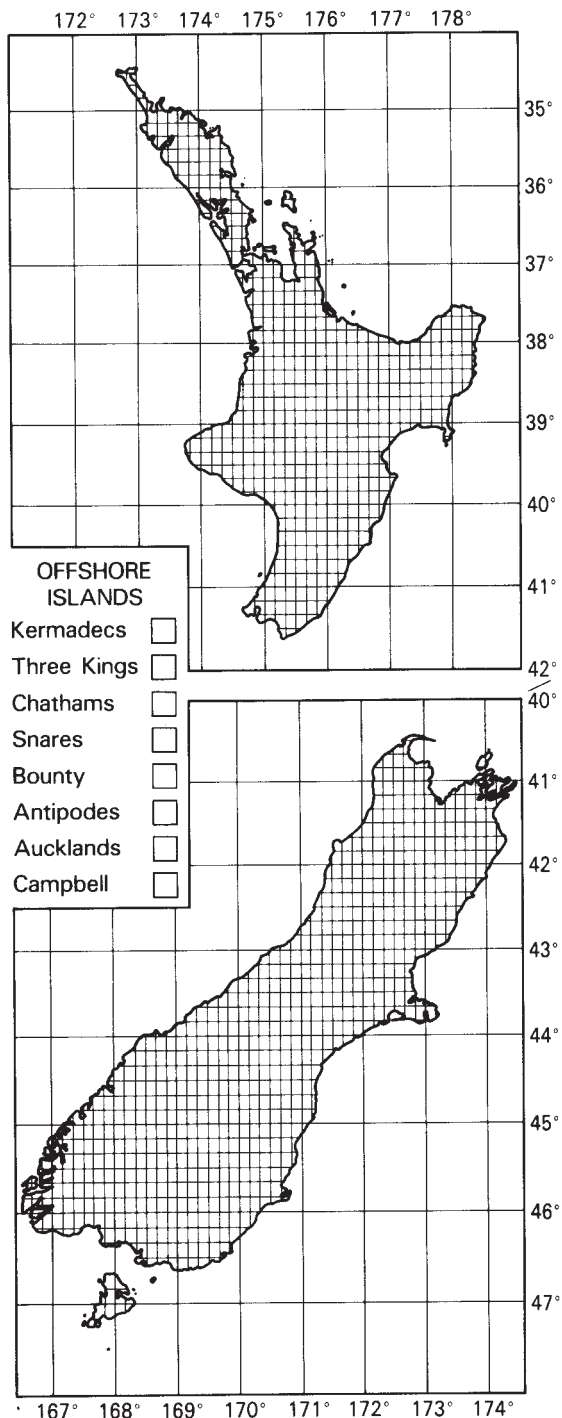
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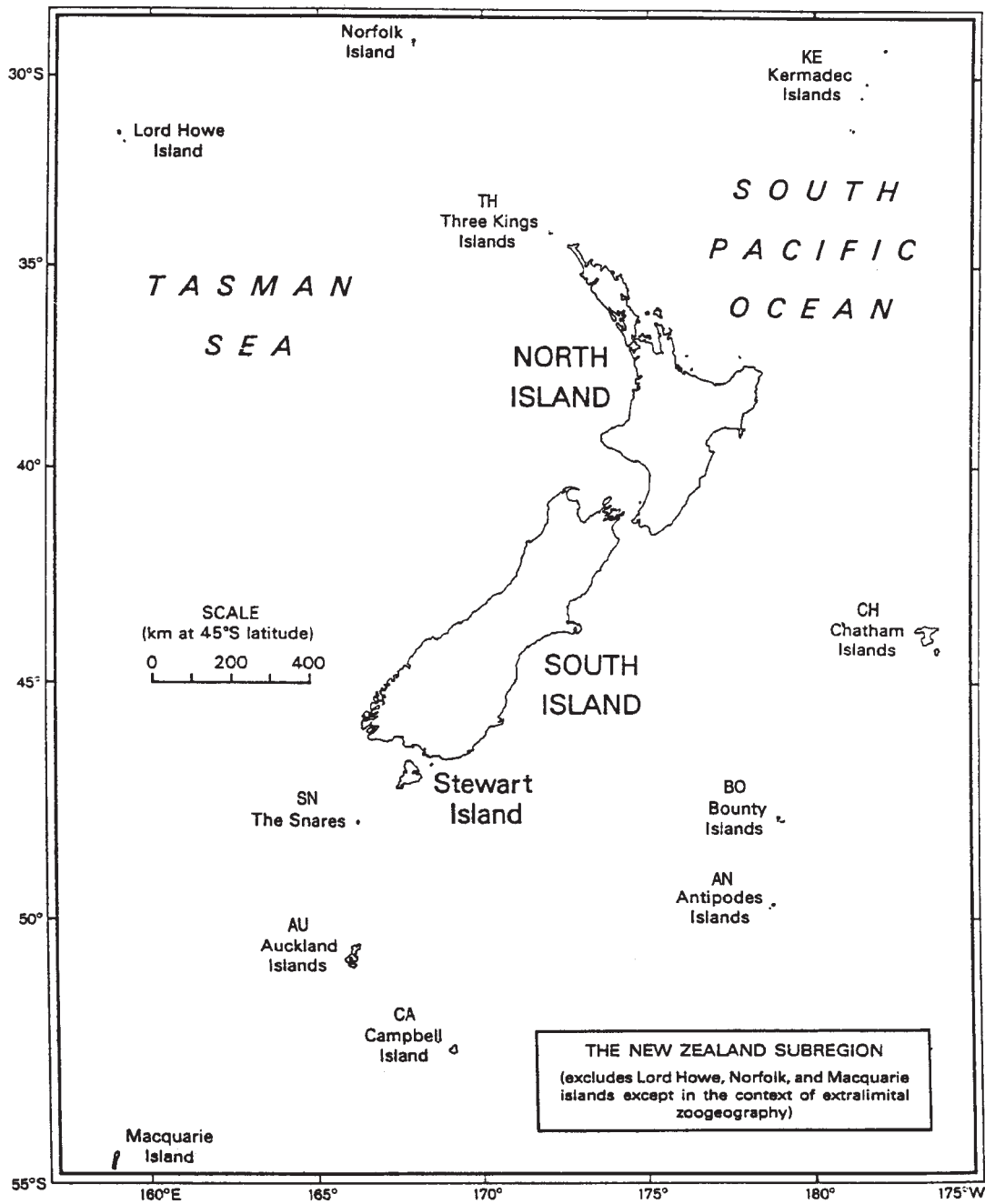


Area codes and boundaries used to categorise specimen locality data (after Crosby *et al.* 1998)



Base-map for plotting collection localities; this may be photocopied without copyright release





The New Zealand subregion with area codes (from Crosby *et al.* 1998).

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- Lycosidae (*C. J. Vink*, FNZ 44, 2002)

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Kua whakatūria tēnei huinga pukapuka hei whakahauhau i ngā tohunga whai mātauranga kia whakaputa i ngā kōrero poto, engari he whaikiko tonu, e pā ana ki ngā aitanga pepeke o Aotearoa. He tōtika tonu te āhua o ngā tuhituhi, engari ko te tino whāinga, kia mārāma te marea ki ngā tohu tautuhi o ia ngārara, o ia ngārara, me te roanga atu o ngā kōrero mō tēnā, mō tēnā.

He titiro whāiti tā tēnei pukapuka ki ngā mea noho whenua, kāore he tuarā; i pēnei ai i te mea kei te mōhio whānuitia ngā mea whai tuarā, ā, ko ngā mea noho moana, koirā te tino kaupapa o te huinga pukapuka *Marine Fauna of N.Z.*

Ka āhei te tangata ki te **whakauru tuhituhinga** mehemea kei a ia ngā tohungatanga me ngā rauemi e tutuki pai ai tana mahi. Heoi anō, e wātea ana te Kohinga Angawaho o Aotearoa hei āta tiro tiro mā te tangata mehemea he āwhina kei reira.

Me whāki te kaituhi i ōna whakaaro ki tētahi o te Kāhui Ārahi Whakarōpūtanga Tuarā-Kore, ki te ġtita rānei i mua i te timatanga, ā, mā rātou a ia e ārahi mō te wāhi ki tana tuhinga.

Ko te hunga pīrangī **hoko pukapuka**, me tuhi ki *Fauna of N.Z.*, Manaaki Whenua Press, Manaaki Whenua, Pouaka Poutāpeta 40, Lincoln 8152, Aotearoa.

E rua ngā tūmomo kaihoko: “A” – kaihoko tūmau, ka tukua ia pukapuka, ia pukapuka, me te nama, i muri tonu i te tānga; “B” – ka tukua ngā pānui whakatairanga me ngā puka tono i ōna wā anō.

Te utu (tirohia “Titles in print”, whārangi 391). Ko te kōpaki me te pane kuini kei roto i te utu. Me utu te hunga e noho ana i Aotearoa me Ahitereiria ki ngā tāra o Aotearoa. Ko ētahi atu me utu te moni kua tohua, ki ngā tāra Merikana, ki te nui o te moni rānei e rite ana.

E toe ana he pukapuka o ngā putanga katoa o mua. Mehemea e hiahia ana koe ki te katoa o ngā pukapuka, ki ētahi rānei, tonoa mai kia whakaheke te utu. Tekau ōrau te heke iho o te utu ki ngā toa hoko pukapuka.