

Cephalopods of Lizard Island, Great Barrier Reef, Australia

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Abstract. Roper, C.F.E. and Hochberg, F.G. (1987). Cephalopods of Lizard Island, Great Barrier Reef, Australia. *Occasional Papers from the Museum of Victoria* 3: 15-20.

A checklist is presented of 27 species of cephalopods collected at Lizard Island, North Queensland, Australia. Information on habitats and localities of the species also is included. Based on observations of live animals and systematic evaluation of specimens, the occurrence of *Octopus ornatus*, *Idiosepius pygmaeus*, *Sepiolo birostrata* and *S. trirostrata* in Australian waters is confirmed.

Introduction

While the Australian cephalopod fauna is known to be rich and varied (see Lu and Phillips, 1985), very little has been published concerning the cephalopods that inhabit the coastal and Great Barrier Reef waters of Queensland. Hedley (1906: 463) listed three species of cuttlefish based on a few cuttlebones from Mast Head Reef, Capricorn Group. Iredale (1926) described nine species and subspecies of cuttlefish solely on the basis of cuttlebones, also from the Capricorns. No cephalopods have been reported from Lizard Island which lies nearly 1200 km to the north of the Capricorn Group of islands. While the three species listed by Hedley are accepted species described from the HMS "Challenger" Expedition by Hoyle (1885) (*Sepia elliptica*—misidentified as *S. esculenta*, *S. cultrata*, and *S. pfefferi*), those described by Iredale are unrecognisable from the very brief descriptions or they are synonyms of known species.

With the establishment of a permanent research station on Lizard Island in 1974 it seemed appropriate to attempt to delineate the cephalopod fauna in the waters accessible to the station, so that potential researchers would know what species were available and the habitats in which they live.

This paper results from the participation of the first author in the International Workshop on Molluscs held at the Lizard Island Research Station on Lizard Island, North Queensland, Australia in December, 1975. A continental, granitic island about 30 km off the Queensland coast and 17 km inshore of the Great Barrier Reef, Lizard Island is located at 14°40'S, 145°28'E. Ponder (1979) presented information about the workshop and described the characteristics of Lizard Island.

The objective of participation in the workshop was to survey the cephalopod fauna taxonomically and to observe, so far as possible, live cephalopods in their habitat and in aquaria. Observations on colour and body patterns of several species are presented by Roper and Hochberg (1988).

This preliminary checklist of the cephalopods of Lizard Island and environs is based on three sources: a) primarily on collections made during the Molluscan Workshop in December, 1975; b) specimens collected during an Australian Museum Fish Department survey for fishes in November, 1975; and c) specimens in the Department of Malacology, Australian Museum, Sydney, many of which are cuttlebones collected on beaches in November and December 1974 during a malacological survey in preparation for the workshop the following year. A brief return visit to Lizard Island in December, 1986 (by CFER) provided additional records for several species as well as the first animal of *Sepia latimanus*, known previously only from stranded cuttlebones. The cephalopod collections in the Queensland Museum, Museum of Victoria, Tasmanian Museum, South Australian Museum and Western Australian Museum were also examined, but no additional records of Lizard Island cephalopods were found.

In order to assist researchers who wish to work on cephalopods, detailed habitat and collection data are listed, and localities are plotted on a map of Lizard Island (Fig. 1). The total of 27 species of cephalopods listed herein from Lizard Island is expected to increase as collecting is extended to less accessible habitats, especially on the windward side of the island.

Four species, *Octopus ornatus*, *Idiosepius pygmaeus*, *Sepiolo birostrata* and *Sepiolo trirostrata* are recorded in

the literature for the first time in Australian waters. The occurrence of the first two species is not surprising, as both are inhabitants of the Indo-Pacific region. *Octopus ornatus* occurs extensively in tropical waters from Hawaii throughout the Indo-Pacific islands to East Africa, and now in tropical Australia. Voss (1981) discussed the systematics and distribution of this vividly marked, white striped, reef octopus. The distribution of *Idiosepius pygmaeus* is recorded throughout Indonesia and the Philippines (Voss, 1963), so it is reasonable to expect its range extension into tropical Australian waters.

Sepiolo birostrata previously has been recorded only from Japan (Sasaki, 1929) and *S. trirostrata* only from the Philippines (Voss, 1963). The Lizard Island specimens of these species were sent to Drs C.C. Lu and T. Okutani who are engaged in a revisionary study of the Australian Sepiolidae and who verified that these specimens were conspecific with material they have from other tropical Australian localities. Their study indicates that the Sepiolidae is both widely distributed and speciose in Australian waters (Lu and Okutani, in preparation).

Collections during the workshop were made in the intertidal zone (primarily during low tides at night), on the patch, fringing, and barrier reefs by skin and scuba diving, by night lighting with dipnet from a small boat, and by beach combing for stranded specimens, e.g., *Sepia* and *Metasepia* cuttlebones, *Nautilus* shells. Thirty-seven stations were occupied on Lizard Island for collection and observation during the workshop; of this total 21 were diving stations. Specimens were fixed in 8% buffered sea water formalin at the Lizard Island Research Station (fixation techniques are described in Roper and Sweeney (1983), then were transferred to 75% ethyl alcohol at the Australian Museum, Sydney. Cuttlebones from *Sepia* and *Metasepia* species and shells from *Nautilus* species are kept in the dry collections. Specimens of all species listed in this paper are archived in the Department of Invertebrate Zoology—Mollusks, National Museum of Natural History, Smithsonian Institution, Washington, D.C., or the Department of Malacology, Australian Museum, Sydney.

Checklist of cephalopods of Lizard Island.

Lu and Phillips (1985) published an annotated checklist of the cephalopods of Australia based on references in the literature and on collections in the Museum of Victoria, Melbourne. The reader is referred to this work as a source of information for synonyms of species listed here; additional references are given in Roper (1983). C.C. Lu and F.G. Hochberg currently are investigating the systematics and distribution of the octopods of eastern Australia. Their work will clarify the identification of octopods that occur on Lizard Island to an extent not possible in this checklist.

The following checklist should be regarded as preliminary in that it was not possible to explore all potential habitats on the island nor to determine if additional sources of material are housed in Australian institutes other than the museums in Sydney, Brisbane and Melbourne since examinations in 1976. We expect that a number of species will be added as collecting and systematic knowledge become more comprehensive.

Species are listed alphabetically within families, with author and date of original description. Records within species are ordered chronologically except in species of *Sepia* for which records of captured animals are listed before records of cuttlebones only. Locality of each collection is given as a CFER station number (details of station data are provided in a separate list), a place name or station number location from the Australian Museum Fish Department (e.g., LZ-75-26, listed separately) or N. Coleman, or a place name from the Department of Malacology (Australian Museum, Sydney) collections; localities are on or in the vicinity of Lizard Island (Fig. 1). Number of specimens is indicated, followed by the mantle length or range in mantle length (ML) in mm. Several species of *Sepia* are represented by cuttlebones only; size is given as cuttlebone length (CL) in mm. *Nautilus* shells were not measured.

Abbreviations for institutional catalogue or registration numbers are: AMS—Department of Malacology, The Australian Museum; USNM—Department of Invertebrate Zoology—Mollusks, National Museum of Natural History, Smithsonian Institution. The notation "(part)" following some AMS registration numbers indicates a complex or mixed lot that consists of specimens of more than one species. Species denoted with an asterisk (*) are those for which observations on live animals are presented in Roper and Hochberg (1988).

NAUTILIDAE

1. *Nautilus macromphalus* Sowerby, 1848

Coconut Beach, 1 broken, encrusted shell, 10 Dec 1974, coll. W. Ponder, P. Colman, I. Loch, AMS C99845.

CFER-36, 1 encrusted shell (drifted from New Caledonia?), USNM 816639.

2. *Nautilus pompilius* Linnaeus, 1758

Coconut Beach, 2 broken, encrusted shells, 10 Dec 1974, coll. W. Ponder, P. Colman, I. Loch, AMS C99846.

CFER-36, 5 shells (living specimens first reported by Saunders, 1981), USNM 816640.

Seaward of Carter Reef, off Lizard Is., 1 shell from mature male live-trapped at 300 m, 26 Jun 1985, coll. W.B. Saunders (see Saunders, 1986), AMS C148212.

3. *Nautilus stenomphalus* Sowerby, 1848

Seaward of Carter Reef, off Lizard Is., 1 shell of mature male from several specimens live-trapped at 300 m, 26 Jun 1985, coll. W.B. Saunders (see Saunders, 1986), AMS C148211.

SEPIIDAE

1. **Metasepia pfefferi* Hoyle, 1885

Watsons Bay, 16 m, sandy rubble, 1 spec., 24 mm ML, 10 Nov 1975, coll. N. Coleman, AMS C102484.

Watsons Beach, north end, 1 spec., 34 mm CL, 12 Dec 1975, coll. W. Ponder, C.F.E. Roper, I. Loch, AMS C104430 (part).

CFER-22, 1 spec., 22 mm ML, USNM 816621.

CFER-36, 1 cuttlebone, 20 mm CL, USNM 816634.

CFER-42, 1 spec., 13 mm ML, USNM 816621.

2. *Sepia apama* Gray, 1849

LZ-75-17, 1 spec., 62 mm ML, AMS C102664 (part).
Windy Beach, 1 spec., 41 mm CL, 4 Dec 1975, coll. W. Ponder, P. Colman, AMS C125668.

3. *Sepia elliptica* Hoyle, 1885

Northern beach on Palfrey Is., 1 spec., 97 mm CL, 3 Dec 1974, coll. W. Ponder, AMS C103582 (part).
Coconut Beach, 1 spec., 115 mm CL, 10 Dec 1974, coll. W. Ponder, P. Colman, I. Loch, AMS C99847 (part).

4. *Sepia latimanus* Quoy & Gaimard, 1832

Lagoon 0.5 km off Research Station, 1 spec., 75 mm ML, 28 Dec 1986, coll. C.F.E. Roper, C.T. Roper, E.C. Roper, USNM 816699.
Coconut Beach, 4 spec., 184-323 mm CL, 9 Dec 1975, coll. S. Slack-Smith, B. Wilson, AMS C102264.
Watsons Beach, north end, 2 spec., 212 and 280 mm CL, 12 Dec 1975, coll. W. Ponder, C.F.E. Roper, I. Loch, AMS C104430 (part).
Windy Beach, 6 spec., 133-311 mm CL, Nov.-Dec 1974, coll. I. Loch, P. Colman, W. Ponder, AMS C99644.

5. *Sepia mestus* Gray, 1849

(not *S. mestus* Iredale, 1926)

Eagle Cay, 5 m, coral bottom, 1 spec., 65 mm ML, 7 Nov 1975, coll. J. Paxton, AMS C102647.
Eagle Cay, 5 m, on reef, 1 spec., 24 mm ML, 7 Nov 1975, N. Coleman, AMS C102643.
LZ-75-17, 1 spec., 14 mm ML, AMS C102664 (part).
LZ-75-26, 2 spec., 38 and 17 mm ML, AMS C102648.
LZ-75-70, 1 spec., 77 mm ML, AMS C102650.
LZ-75-71, 1 spec., 25 mm ML, AMS C102660.
CFER-36 and 39, 15 cuttlebones, 11-72 mm CL, USNM 816637. Watsons Beach, north end, 1 spec., broken, 12 Dec 1975, coll. W. Ponder, C.F.E. Roper, I. Loch, AMS C104430 (part).

Windy Beach, 1 spec., 75 mm CL, Nov-Dec 1974, coll. I. Loch, P. Colman, W. Ponder, AMS C99644 (part).

6. *Sepia novaehollandiae* Hoyle, 1909

(*S. macandrewi* Iredale, 1926 cited as synonym by Adam, 1979).

Lagoon, Lizard Island Reef, 2 spec, 15 and 34 mm ML, 17 Nov 1975, coll. N. Coleman, AMS C102485.
CFER-36 and 39, 61 cuttlebones, 22-350 mm CL, USNM 816636.
CFER-44, 2 cuttlebones, 37-64+ mm CL, USNM 816641.
Northern beach on Palfrey Is., 1 spec., 97 mm CL, 3 Dec 1974, coll. W. Ponder, AMS C103582 (part).
Coconut Beach, 1 spec., 117 mm CL, 10 Dec 1974, coll. W. Ponder, P. Colman, I. Loch, AMS C99847 (part).

7. **Sepia papuensis* Hoyle, 1885

(see Adam, 1979 for synonyms)

CFER-28, 1 spec., 33 mm ML, USNM 816619.
Lizard Is., 1 spec., 37 mm CL, Jul 1916, coll. C. Hedley, AMS C41677.
Northern beach on Palfrey Is. 1 spec., 58 mm CL, 3 Dec 1974, coll. W. Ponder, AMS C103582 (part).
Kapok Cove beach, North Point, 2 spec., 71 mm CL

and broken, 4 Dec 1974, coll. W. Ponder, AMS C103580 (part).

Coconut Beach, 5 spec., 56-84 mm CL, 10 Dec 1974, coll. W. Ponder, P. Colman, I. Loch, AMS C99848.

Windy Beach, 11 spec., 37-64 mm CL, Nov-Dec 1974, coll. I. Loch, P. Colman, W. Ponder, AMS C99644 (part).
CFER-36 and 39, 125+ cuttlebones, 9-67 mm CL, USNM 816635.

CFER-44, 11 cuttlebones, 25-65 mm CL, USNM 816642.

Watsons Beach, north end, 10 spec., 43-78 mm CL, 12 Dec 1975, coll. W. Ponder, C.F.E. Roper, I. Loch, AMS C104430 (part).

8. *Sepia pharaonis* Ehrenberg, 1831

Watsons Beach, north end, 9 spec., 116-195 mm CL, 12 Dec 1975, coll. W. Ponder, C.F.E. Roper, I. Loch, AMS C104430 (part).

9. *Sepia plangon* Gray, 1849

Watsons Bay, 16 m, sandy rubble, 2 spec., 23 and 16 mm ML, 10 Nov 1975, N. Coleman, AMS C102637.
Sandspit on north side Palfrey Is., 1 spec., 73 mm CL, 3 Dec 1974, coll. W. Ponder, P. Colman, AMS C103581.
Kapok Cove beach, North Point, 1 spec., 70 mm CL, 4 Dec 1974, coll. W. Ponder, AMS C103580 (part).
Windy Beach, 3 spec., 60-77 mm CL, Nov.-Dec 1974, coll. I. Loch, P. Colman, W. Ponder, AMS C99644 (part).
CFER-36 and 39, 31+ cuttlebones, 22-70 mm CL, USNM 816633.
CFER-44, 1 cuttlebone, 55+ mm CL, USNM 816643.

10. *Sepia smithi* Hoyle, 1885

(*S. esculenta* Hoyle, 1885 in part and *S. pageora* Iredale, 1954 cited as synonyms by Adam, 1979)

Watsons Bay, 16 m, sandy rubble, 1 spec., 53 mm ML, 10 Nov 1975, coll. N. Coleman, AMS C102644.
CFER-36, 2 cuttlebones, 77-88 mm CL, USNM 816632.
CFER-44, 1 cuttlebone, 110 mm CL, USNM 816644.

11. *Sepia cf. braggi* (Verco, 1907)

(Part of a species complex with narrow cuttlebones).

CFER-36 and 39, 50 cuttlebones, 29-44 mm CL, USNM 816622.
CFER-44, 1 cuttlebone, 41 mm CL, USNM 816631.

SEPIOLIDAE

1. *Sepiola birostrata* Sasaki, 1918

Lagoon, Lizard Island Reef, 1 spec., 9 mm ML, 17 Nov 1975, coll. N. Coleman, USNM 816626.
LZ-75-60, Coconut Beach, 1 spec., 9 mm ML, USNM 816625.

2. *Sepiola trirostrata* Voss, 1962

Watsons Bay, 16 m, sandy bottom, 1 spec., 10 mm ML, 10 Nov 1975, coll. N. Coleman, AMS C102639.

3. *Euprymna cf. stenodactyla* (Grant, 1833)

Palfrey Is., east edge, 0-3 m, 1 spec., 25 Jan. 1975, coll. D. Hoese, H. Larson, AMS C152357.
Watsons Bay, 16 m, sandy rubble, 1 spec., 20 mm ML, 10 Nov 1975, coll. N. Coleman, AMS C102638.
Watsons Bay, 9 m, algae, sand and rubble bottom, 1

spec., 27 Nov 1978, coll. D. Hoese, H. Larson, AMS C152356.

Lizard Is. Lagoon off South Is., 1 m, coral rubble and sand bottom, 2 spec., 28 Nov 1978, coll. D. Hoese, AMS C152355.

Yonge Reef, 1 mile north of platform, back reef of coral and sand, 1-15 m, 1 spec., 1 Dec 1978, coll. D. Hoese, AMS C152358.

Lizard Is. Lagoon, north of entrance, 1.5-6 m, 3 spec., 1.8-6.8 mm ML, 12 Dec 1978, coll. H. Larson, AMS C152354.

Lizard Is. area, 14°30'S, 145°42'E, surface plankton net, 1 spec., 8.5 mm ML, 7 Feb 1979, 2120 hr, coll. Australian Museum Party, AMS C152353.

IDIOSEPIIDAE

1. *Idiosepius pygmaeus* Steenstrup, 1881

Lagoon, Bommie No. 2, west side, 1-15 m, coral and sand, 1 spec., 5 mm ML, 17 Nov 1975, coll. J. Paxton, AMS C102658.

SPIRULIDAE

1. *Spirula spirula* (Linnaeus, 1758)

CFER-36 and 39, 17 shells (drifted in from open ocean), USNM 816638.

LOLIGINIDAE

1. *Photololigo edulis* (Hoyle, 1885)

CFER-33, 2 spec., 88 and 98 mm ML, USNM 816627.

2. *Sepioteuthis lessoniana* Lesson, 1830

(see Lu and Phillips, 1985)

CFER-33, 1 spec., 49 mm ML, USNM 816628.

CFER-40, egg capsules, probably of this species, USNM 816629.

Lagoon off Research Station, hand net, 1 m., 1 spec., 37 mm ML, 26 Dec 1986, coll. C.F.E. Roper, C.T. Roper, E.C. Roper, USNM 816700.

OMMASTREPHIDAE

1. *Symplectoteuthis luminosa* Sasaki, 1915

CFER-33a, 1 spec., 24 mm ML, USNM 816630.

OCTOPODIDAE

1. **Hapalochlaena cf. maculosa* Hoyle, 1883

Watsons Bay, 17 m, 1 spec., 19 mm ML, 8 Nov 1975, coll. N. Coleman, AMS C102486.

CFER-25, 1 spec., 26 mm ML, USNM 730599.

CFER-28, 1 spec., 26 mm ML, USNM 816623.

CFER-42, 2 spec, 11 and 17 mm ML, USNM 730598.

2. **Octopus cyanea* Gray, 1849

Watsons Bay, 16 m, sandy rubble, 2 spec., 23 and 27 mm ML, 10 Nov 1975, coll. N. Coleman, AMS C102640 and C102641.

CFER-18, 1 spec., 74 mm ML, USNM 816646.

CFER-33, 1 spec., 9 mm ML, USNM 816648.

CFER-50, 1 spec., 88 mm ML, USNM 816647.

Watsons Bay, 13 m, sandy silt bottom, 1 spec. living in beer bottle, 24 Dec 1986 (released 29 Dec), coll. C.T. Roper, E.C. Roper, C.F.E. Roper.

3. **Octopus ornatus* Gould, 1852

LZ-75-17, 1 spec., 50 mm ML, AMS C102664 (part). Lagoon, Lizard Island Reef, 1 spec. (released), Dec 1975. CFER-18, 10 spec. (2 released), 45-73 mm ML, USNM 816649.

CFER-20, 4 spec., 35-55 mm ML, USNM 816650.

Lizard Is., lagoon off Coconut Beach in night-lighted larval fish trap at surface, water depth 16 m, 1 spec., 26 Dec 1986, coll. Larval Fish Survey.

Lizard Is., reef flats off Research Station, minus tide, 0.2 m, 1 spec. (released), 29 Dec 1986, coll. C.F.E. Roper.

4. *Octopus* sp. A

Swains Reef, 8 m, on reef under rock, 1 spec., 20 mm ML, 14 Sep 1974, coll. N. Coleman, AMS C102649.

Yonge Reef, 10 m, 1 spec., 9 mm ML, 8 Nov 1975, coll. N. Coleman, AMS C102642 (part).

LZ-75-17, 2 spec., 14 and 22 mm ML, AMS C102664 (part).

Coconut Beach, 2-7 m, coral and sand, 1 spec., 21 mm ML, 24 Nov 1975, coll. J. Paxton, AMS C102651.

5. *Octopus* sp. B

Various localities, 3 spec., 6-25 mm ML.

Station and habitat information

Field data are listed for collections made on Lizard Island, Great Barrier Reef, north Queensland, Australia (14°40'S, 145°28'E) in 1975 by the senior author (CFER-) and by members of the Fish Department of the Australian Museum (LZ-75-). Additional station data, field and laboratory observations, diving logs and notes are maintained in the Division of Mollusks, National Museum of Natural History, Smithsonian Institution and in the Departments of Malacology and Fishes, Australian Museum, Sydney.

CFER-17. Casuarina Beach, patch reefs in front of Research Station; 2-3 m; afternoon; 1 Dec 1975; dive 13.

CFER-18. Exposed reef flats in front of Research Station; 0-0.5 m (minus tide); 0100-0330 hr (dark of moon); 2 Dec 1975. *Octopus ornatus*: 4 animals captured for observation; numerous additional animals observed in habitat.

CFER-19. Rocky Point, coral heads and rubble; 5-14 m; 1500-1600 hr; 2 Dec 1975; dive 15.

CFER-20. Casuarina Beach, exposed reef flats in front of Research Station; 0-0.5 m (minus tide); 0130-0330 hr (dark of moon); 3 Dec 1975. Small, shallow pools in rocky rubble and dead reefs. *Octopus cyanea*: 1 animal captured for observation; *O. ornatus*: 3 animals captured for observation; a number of additional *O. ornatus* observed in the field.

CFER-21. Between Research Station on Casuarina Beach and Freshwater Beach, on outcrop of granite boulders; intertidal; 1500 hr; 3 Dec 1975.

CFER-22. Watsons Bay; 11-13 m; 1445-1530 hr; 3 Dec 1975; dive 16. Bottom flat, finely sedimented and sandy, many holothurians. *Metasepia pfefferi*: 1 animal captured for observation.

CFER-23. Between Lizard Island and Palfrey Island, rotenone station; 2 m; 1645-1800 hr; 4 Dec 1975; dive 17.

Shallow coral reef, bottom sandy; rotenone around bases of coral heads.

CFER-24. Palfrey Island, off beach on north side; 3 m; 1045-1200 hr; 5 Dec 1975; dive 18. Bottom, sand/silt with scattered rocks.

CFER-25. Watsons Bay; 13-14 m; 1615-1705 hr; 5 Dec 1975; dive 19. Bottom, sand/silt, with scattered rubble; many black holothurians; patches of *Halimeda* and *Caulerpa*. *Hapalochlaena* cf. *maculosa*: 1 animal captured for observation.

CFER-26. Watsons Bay; 8 m; 1600 hr; 5 Dec 1975; dive 19. Single *Sepia ?papuensis* embryo in dead heart urchin test.

CFER-27. Casuarina Beach, patch reef in front of Research Station; 2-3 m; 0945-1100 hr; 6 Dec 1975; dive 20. *Octopus cyanea*: 1 animal, in situ observations.

CFER-28. Watsons Bay; 20-22 m; 1430-1510 hr; 6 Dec 1975; dive 21. Bottom, open, sand/silt with solitary corals and scattered *Halimeda* patches. *Sepia papuensis*: 1 animal captured for observation; *Hapalochlaena* cf. *maculosa*: 1 animal captured for observation.

CFER-32. Lagoon, Bommie No. 2; 5-14 m; 1445-1600 hr; 7 Dec 1975; dive 22. Reef face and rubble, around coral head.

CFER-33. Watsons Bay, surface night light; 0 m over a bottom depth of 16 m; 2230-0100 hr (dark, cloudy and rainy); 7 Dec 1975. *Photololigo edulis*, 2 animals collected; *Sepioteuthis lessoniana*, 1 animal collected; *Octopus* sp. (juvenile): 1 animal collected.

CFER-33a. Casuarina Beach, north end; 7 Dec 1975. *Symplectoteuthis luminosa*: 1 juvenile animal washed ashore, collected.

CFER-34. Yonge Reef, Great Barrier Reef, ocean side; 7-10 m; 1200-1230 hr; 9 Dec 1975; dive 23.

CFER-35. Yonge Reef, Great Barrier Reef, along inside of lead (channel), rotenone station; 2-12 m; 1300-1415 hr; 9 Dec 1975; dive 24.

CFER-36. Coconut Beach, windward side of Lizard Island; 9 Dec 1975. Stranded cuttlebones of: *Metasepia pfefferi*, 1 specimen; *Sepia braggi*, 50 specimens; *S. mestus*, 15 specimens; *S. novaehollandiae*, 61 specimens; *S. papuensis*, 125+ specimens; *S. plangon*, 31+ specimens; *S. smithi*, 2 specimens. Shells of: *Nautilus macromphalus*, 1 specimen; *N. pompilius*, 5 specimens; *Spirula spirula*, 17 specimens. All collected.

CFER-37. Casuarina Beach, reef flat in front of Research Station; 2-3 m; 1130-1245 hr; 10 Dec 1975; dive 25. *Octopus cyanea*: 1 specimen, in situ observations.

CFER-38. Coconut Beach, reef flat; 1-2 m; 1445-1600 hr; 11 Dec 1975; dive 26. Coral rubble and rock bottom.

CFER-39. Coconut Beach, windward side of island; 11 Dec 1975. Stranded cuttlebones of *Sepia* spp. (collected and combined with specimens from station 36; see above list).

CFER-40. Beach south of Pidgin Point; 1-2 m; 10 Dec 1975. *Sepioteuthis lessoniana*: egg masses; many observed on rocky bottom by S. Slack-Smith.

CFER-41. Reef between Palfrey Island and South Island; 2-3.5 m; 0945-1100 hr; 12 Dec 1975; dive 27.

CFER-42. Watsons Bay; 10-12 m; 1400-1515 hr; 12 Dec 1975; dive 28. Bottom, mixed sand/silt, dense patches of *Halimeda* and some *Caulerpa*. *Metasepia pfefferi*: 1 animal

captured; *Hapalochlaena* cf. *maculosa*: 2 animals captured.

CFER-43. Watsons Bay, reef in NE corner; 2-3.5 m; 1530-1645 hr; 12 Dec 1975; dive 29. Bottom, sandy with extensive staghorn coral and massive coral heads.

CFER-44. Watsons Beach; 12 Dec 1975. Stranded cuttlebones of: *Sepia* cf. *braggi*: 1 specimen; *S. novaehollandiae*: 2 specimens; *S. papuensis*: 11 specimens; *S. plangon*: 1 specimen; *S. smithi*: 1 specimen. All collected.

CFER-45. Watsons Bay, coral reef in NE corner; 2-3.5 m; 1100-1230 hr; 13 Dec 1975; dive 30.

CFER-46. South Island, east side, south face of coral reef; 2-10 m; 1530-1645 hr; 13 Dec 1975; dive 31.

CFER-47. Reef flats between Research Station and Rocky Point; 2-10 m; 13 Dec 1975. Assorted invertebrates collected from several dives.

CFER-48. South Island, beach on north side; 13 Dec 1975. Cuttlebones of *Sepia* spp collected.

CFER-49. Patch reef 0.5 km off Research Station; 2.5-4 m; 0930-1045 hr; 14 Dec 1975; dive 32.

CFER-50. Casuarina Beach, reef flats in front of Research Station; 2 m; 1115-1200 hr; 14 Dec 1975; dive 33. *Octopus cyanea*: 1 animal, in situ observations, then collected.

Department of Fishes station data

LZ-75-17. Yonge Reef, back of reef on reef flat, 14°36'S, 145°37'E; 10-13 m; 1030-1230 hr; 8 Nov 1975; rotenone station. *Sepia mestus*: 1 animal; *S. apama*: 1 animal; *Octopus ornatus*: 1 animal; *O. sp. A*: 2 animals. All collected.

LZ-75-26. Yonge Reef, north end in channel between Yonge and Carter Reefs, 14°35'S, 145°37'E; 1-18 m, 0945-1145 hr; 11 Nov 1975; coral with little sand, rotenone. *Sepia mestus*: 2 animals collected.

LZ-75-60. Coconut Beach, south end, 14°40'S, 145°28'E, 2-7 m, daytime; 24 Nov 1975, coral and sand. *Sepiolo birostrata*: 1 animal collected.

LZ-75-70. MacGillivray Reef/Cay, east of Lizard Is., windward side, 14°39'S, 145°29'E, 3-25 m; daytime; 27 Nov 1975; coral and sand. *Sepia mestus*: 1 animal collected.

LZ-75-71. MacGillivray Reef/Cay, east of Lizard Is., windward side, 14°39'S, 145°29'E, 1-3 m; daytime; 27 Nov 1975; coral and sand. *Sepia mestus*: 1 animal collected.

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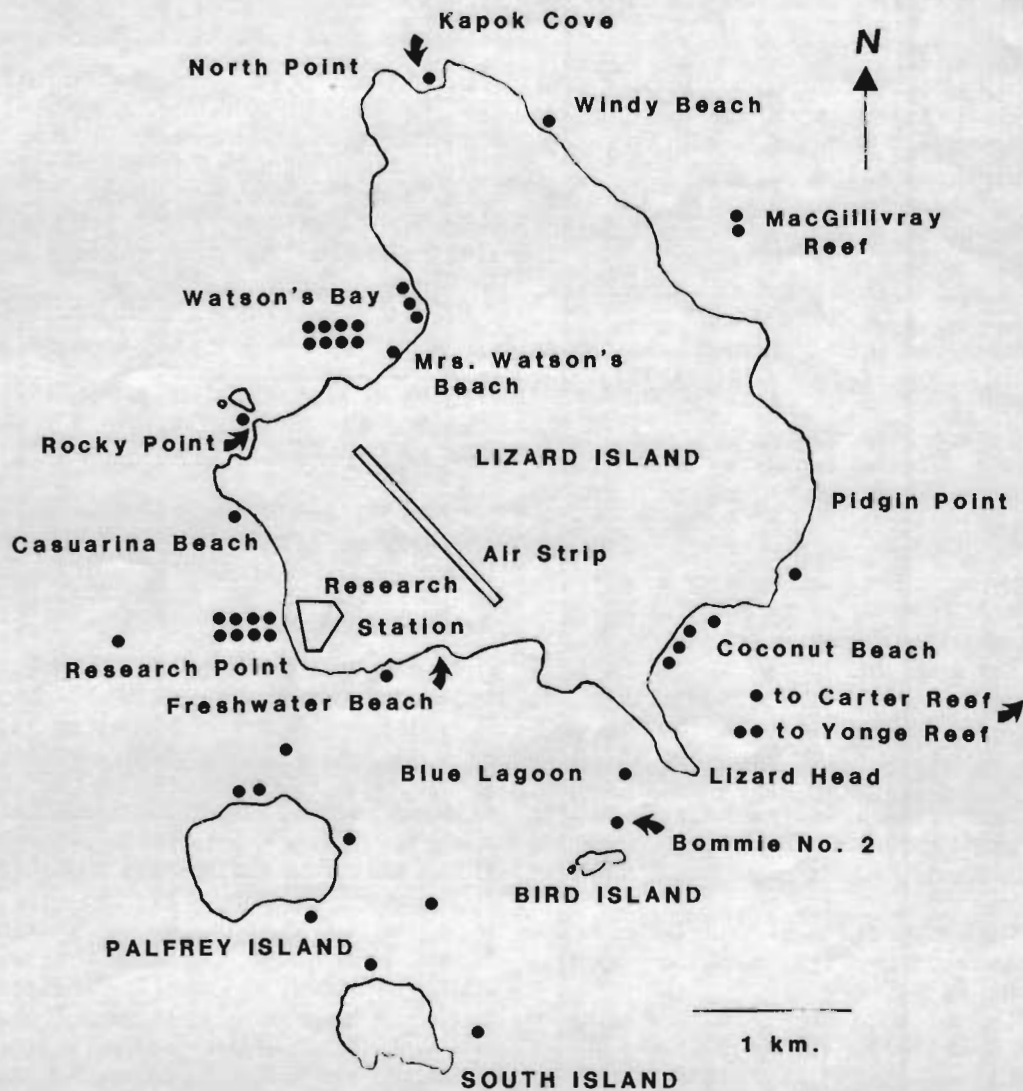


Figure 1. Map of Lizard Island (14°40'S, 145°28'E) and vicinity with locations of collecting stations indicated by solid dots. See text for station data.