

NOTES ON THE AUSTRALIAN STOMATOPODA (CRUSTACEA) IN THE COLLECTIONS OF THE QUEENSLAND MUSEUM.

W. STEPHENSON.

University of Queensland.

INTRODUCTION.

The collections were consulted while examining specimens in the Zoology Department, University of Queensland (Stephenson, 1952), and found to contain several species not recorded from Australia. The localities of others add materially to the knowledge of stomatopod distribution within the Commonwealth. Possibly the most interesting specimen is the holotype of *Lysiosquilla miersi* De Vis, known only from this specimen, which has not been figured.

Additions have been made to the collections from University material, including some specimens which have already been commented upon (Stephenson, 1952). These include *Squilla fasciata* de Haan, and *Gonodactylus tweediei* Serène. Some very recent additions to the University collections have been largely incorporated in the Museum collections, and are reported upon in this paper.

The references which follow the specific names are purposely abbreviated by the exclusion of the majority of authors prior to Kemp's (1913) monograph. The earlier references given include the original descriptions, and others which provide additional or better figures than those given by Kemp. When specimens are not identical with Kemp's descriptions, the differences are detailed.

Lengths of specimens have been measured in the mid-dorsal line from the posterior end of the telson to the anterior edge of the carapace, excluding the rostrum. Owing to curvature or extensibility of many specimens these measurements are accurate only to about $\pm 1\%$ or 1 mm., whichever is the larger.

SQUILLA LAEVIS Hess.

Squilla laevis Hess, 1865, Arch. Naturgesch., Jahrg. 31, p. 170, pl. 7, fig. 22; Kemp, 1913, Mem. Ind. Mus., 4, pp. 49-50, pl. 3, figs. 35-37.

MATERIAL.—Brisbane River, male and female; Doboy Creek, Brisbane River, one female; Moreton Bay, female; Mud Island, Moreton Bay, one male, two females.

LENGTHS.—Males, 70-90 mm.; females, 67-92 mm.

Previous Australian records have been summarised by Stephenson (1952).

SQUILLA QUINQUEIDENTATA Brooks.

Squilla quinqueidentata Brooks, 1886, Voy. H.M.S. Challenger, Zool., 16, pp. 26-30, pl. 1, fig. 3, pl. 2, fig. 6; Kemp, 1913, Mem. Ind. Mus., 4, pp. 52-3, p. 195; Holthius, 1941, Temminkia, 6, pp. 244-5.

MATERIAL.—Townsville, prawn-trawled in 3-5 fathoms between Magnetic Island and the mainland, two males and two females.

LENGTHS.—Males, 100 and 133 mm. ; females, 155 and 157 mm.

A new Australian record. Three other females (96-134 mm.) were sent from Townsville to the University of Queensland.

SQUILLA FOVEOLATA Wood Mason.

Squilla foveolata Wood Mason, 1895, Figs. and Desc. of Nine Squillidae, p. 2, pl. 2, fig. 1 ; Kemp, 1913, Mem. Ind. Mus., 4, pp. 58-60, pl. 4, fig. 48.

MATERIAL.—Townsville, prawn-trawled in 3-5 fathoms, between Magnetic Island and the mainland, one female.

LENGTH.—103 mm.

A new Australian record.

SQUILLA NEPA Latreille.

Squilla nepa Latreille, Encycl. Method., 10, p. 471 ; Kemp, 1913, Mem. Ind. Mus., 4, pp. 60-4, p. 195, pl. 4, fig. 49 ; Gravier, 1937, Ann. Inst. Oceanogr., 17, pp. 179-82, figs. 2, 3 ; Barnard, 1950, Ann. S. African Mus., 38, pp. 847-8, figs. 1b, 2a.

MATERIAL.—Townsville, prawn-trawled in 3-5 fathoms, between Magnetic Island and the mainland, one female.

LENGTH.—78 mm.

This species has been recorded from Port Curtis by Miers (1880), but the record is doubtful because Miers did not distinguish between *S. nepa*, *S. oratoria* de Haan, *S. inornata* Tate, and *S. anomala* Tweedie. Haswell's (1882) record is almost certainly a transcription from Miers' paper. Henderson (1893, p. 452) included "Australia" in his distributional data on *S. nepa*, but according to Kemp he confused this species with *S. holoschista* Kemp.

The present specimen is therefore the first definite Australian record.

SQUILLA INORNATA Tate.

Squilla inornata Tate, 1883, Trans. Roy. Soc. S. Austr., 6, p. 51, pl. 2, figs. 3a-c.

Squilla affinis var. *intermedia* Nobili, 1903, Bull. Mus. Zool. Anat. Comp. Torino, 18, No. 455, p. 38.

Squilla oratoria var. *perpensa* Kemp, 1913, Mem. Ind. Mus., 4, pp. 70-2, pl. 5, figs. 57-9.

Squilla oratoria var. *inornata* Hale, 1924, Rec. S. Austr. Mus., 2, pp. 495-6 ; Chopra, 1935, Rec. Ind. Mus., 36, pp. 24-5 ; Gravier, 1937, Ann. Inst. Oceanogr., 17, pp. 183-5, fig. 6 ; Holthius, 1941, Temminkia, 6, pp. 248-9 ; Lui, 1949, Contrib. Inst. Zool. Nat. Acad. Peiping, 5, pp. 37-8, figs. 2a-b.

Squilla oratoria inornata Tweedie, 1935, Bull. Raffles Mus., 10, pp. 45-8.

MATERIAL.—Bowen, two females, one from "Endeavour" collection.

LENGTHS.—60 and 105 mm.

Since Kemp's monograph was published, two additional species in the *Squilla oratoria*—*S. interrupta* group have been described, viz., *S. anomala* Tweedie 1935, and *S. fabricii* Holthius 1941. It is evident that within this group, perfectly good species are recognised on inconspicuous characters. The order of magnitude of the differences between *Squilla oratoria* de Haan and *S. inornata* Tate has frequently been commented upon in the literature and is definitely as great as those between other members of the group. In fact Tate's species seems to be closest to *S. anomala*. Under these circumstances there appears to be no sound reason for referring Tate's form to subspecific status.

In the specimens examined, the joints of the antennular peduncle are relatively longer and thinner than those figured by Kemp. The borders of the free thoracic segments also differ slightly and are nearer to Lui's figure. The carina on the raptorial carpus is less conspicuous than those figured by both of these workers, and it is more obtusely angled in conformity with Tweedie's description.

Previous Australian records are from S. Australia (Tate, 1883), N. Australia (Miers, 1880) and Cairns, Queensland (Hale, 1924).

SQUILLA INTERRUPTA Kemp.

Squilla interrupta Kemp, 1911, Rec. Ind. Mus., 6, p. 98; Kemp, 1913, Mem. Ind. Mus., 4, pp. 72-4, pl. 5, figs. 60-2; Tweedie, 1935, Bull. Raffles Mus., 10, p. 48; Holthius, 1941, Temminkia, 6, pp. 252-4; Lui, 1949, Contrib. Inst. Zool. Nat. Acad. Peiping, 5, pp. 39-41, text-figs. 3a, b.

MATERIAL.—Rockhampton, female; Gladstone, female; Brisbane River, two males, five females; Moreton Bay, one male, four females; Southport, one male; Burleigh Heads, one male.

LENGTHS.—Males, 100-135 mm.; females, 90-140 mm.

The only previously known Australian localities are in S. Queensland (Boone, 1934; Stephenson, 1952) where the species is evidently common.

SQUILLA WOODMASONI Kemp.

Squilla woodmasoni Kemp, 1911, Rec. Ind. Mus., 6, p. 99; Kemp, 1913, Mem. Ind. Mus., 4, pp. 74-6, pl. 5, figs. 63-5; Hansen, 1926, Siboga Exped., 104 Livr. Monogr. 35, p. 12; Holthius, 1941, Temminkia, 6, p. 255; Lui, 1949, Contrib. Inst. Zool. Nat. Acad. Peiping, 5, pp. 42-3, pl. 6, figs. 12-14; Stephenson, 1952, Zool. Pap. Univ. Queensland, I, pp. 5-6.

MATERIAL.—Tin Can Bay, near Inskip Point, in 5 fathoms, female; Townsville, prawn-trawled in 3-5 fathoms between Magnetic Island and the mainland, female.

LENGTHS.—87 and 115 mm.

Three males (87-99 mm.) were sent from Townsville to the University of Queensland. Previous Australian records have been summarised recently (Stephenson 1952).

SQUILLA DEPRESSA (Miers).

Chloridella depressa Miers, 1880, Ann. Mag. Nat. Hist., Ser. 5, 5, pp. 14-15, pl. 2, figs. 1-4.

Squilla depressa Sèrene, 1952, Rec. Aust. Mus., 23, pp. 2-11, figs. 3, 4, 9, 18, 21, pl. 1, fig. 3, pl. 2, figs. 3, 6, 7, 8, 9, 10; Stephenson, 1952, Zool. Pap. Univ. Queensland, 1, p. 8.

MATERIAL.—Sandgate, male; Russell Island, Moreton Bay, female.

LENGTHS.—Male, 85 mm.; female, 72 mm.

The pigmentation of the female is similar to a recently collected male (Stephenson, 1952) but is somewhat denser. The chestnut-brown colour of the hairs fringing the abdominal pleopods is a distinctive character in recently preserved specimens.

The species is known only from Australia.

SQUILLA RAPHIDEA Fabricius.

Squilla raphidea Fabricius, 1798, Ent. Syst. Suppl., p. 416; Kemp, 1913, Mem. Ind. Mus., 4, pp. 88-92, pl. 7, fig. 77; Gravier, 1937, Ann. Inst. Oceanogr., 17, pp. 186-9, figs. 8-10; Lui, 1949, Contrib. Inst. Zool. Nat. Acad. Peiping, 5, pp. 43-4, pl. 7, figs. 15-16; Barnard, 1950, Ann. S. African Mus., 38, pp. 851-2, fig. 1 c, g; Stephenson, 1952, Zool. Pap. Univ. Queensland, 1, pp. 4-5.

MATERIAL.—Cooktown, female; Peel Island, Moreton Bay, female; Southport, male.

LENGTHS.—Male, 163 mm.; females, 167 and 222 mm.

SQUILLA ANOMALA Tweedie.

Squilla anomala Tweedie, 1935, Bull. Raffles Mus., 10, pp. 45-8; Holthius, 1941, Temminckia, 6, p. 253; Stephenson, 1952, Zool. Pap. Univ. Queensland, 1, pp. 7-8.

MATERIAL.—Townsville, prawn-trawled in 3-5 fathoms between Magnetic Island and the mainland, five males and six females.

LENGTHS.—Males, 73-98 mm.; females, 63-110 mm.

Three other males (60-74 mm.) were sent from Townsville to the University of Queensland. This species, which has only recently been added to the Australian fauna (Stephenson, 1952), was the most common stomatopod in a collection received from Townsville in May 1952.

HEMISQUILLA STYLIFERA (H. M. Edwards).

Gonodactylus styliferus H. M. Edwards, 1837, Hist. Nat. Crust., 2, p. 330, pl. 27, figs. 9-14.

Hemisquilla stylifera Kemp, 1913, Mem. Ind. Mus., 4, pp. 106-8, pl. 7, figs. 84-5; Schmitt, 1940, Allan Hancock Pac. Expd., 5, pp. 182-3.

MATERIAL.—Victorian coast, "Endeavour" collection, three males.

LENGTHS.—138-156 mm.

All mandibular palps are two segmented. One specimen has only a single rounded lobe between the submedian and intermediate spines of the telson as in Schmitt's figure. The other two specimens have two lobes in this position as in Kemp's text-figure. The existence of this variation in Australian specimens means that "distinct races" (Kemp) of American and Australian forms cannot be distinguished.

PSEUDOSQUILLA CILIATA (Fabricius).

Squilla ciliata Fabricius, 1787, Mantiss. Insect, 1, p. 333.

Pseudosquilla ciliata Kemp, 1913, Mem. Ind. Mus., 4, pp. 96-100; Bigelow, 1931, Bull. Mus. Comp. Zool. Harv., 77, pp. 152-60, text-figs. 3-6; Boone, 1934, Bull. Vanderbilt Mar. Mus., 5, pp. 16-20, pl. 4; Gravier, 1937, Ann. Inst. Oceanogr., 17, pp. 91-3; Barnard, 1950, Ann. S. African Mus., 38, pp. 852, 854, fig. 3a.

MATERIAL.—Murray Island, two females; Amity, Moreton Bay, female; Myora, Moreton Bay, two females; Southport, female.

LENGTHS.—50-80 mm.

These records extend the Australian distribution to the entire coast of eastern Queensland.

PSEUDOSQUILLA PILAENSIS de Man.

Pseudosquilla pilaensis de Man, 1888, J. Linn. Soc. Lond., 22, p. 296; Kemp, 1913, Mem. Ind. Mus., 4, pp. 105-6; Schmitt, 1929, Lingnan Sci. J., 8, pp. 140-3, pl. 19, figs. 12-14; Gravier, 1937, Ann. Inst. Oceanogr., 17, pp. 193-4, fig. 13.

MATERIAL.—Bowen, one male.

LENGTH.—47 mm.

A new Australian record. The nearest locality record appears to be the Mergui Archipelago (de Man, 1888).

LYSIOSQUILLA MACULATA (Fabricius).

Squilla maculata Fabricius, 1793, Ent. Syst., 2, p. 511.

Lysiosquilla maculata Kemp, 1913, Mem. Ind. Mus., 4, pp. 111-6, pl. 8, figs. 86-91; Edmonston, 1921, Occ. Pap. Bernice P. Bishop Mus., 7, pp. 169-73, text-figs. 9A, B; Boone, 1934, Bull. Vanderbilt Mar. Mus., 5, pp. 21-8, pls. 5, 6; Chopra, 1935, Rec. Ind. Mus., 36, pp. 28-30; Holthius, 1941, Temminkia, 6, pp. 269-72; Barnard, 1950, Ann. S. African Mus., 38, pp. 855-6, fig. 3d.

Lysiosquilla miersi De Vis, 1883, Proc. Linn. Soc. N.S.W., 7, pp. 321-2; Bigelow, 1894, Proc. U.S. Nat. Mus., 17, p. 504; Kemp, 1913, Mem. Ind. Mus., 4, pp. 116-7.

MATERIAL.—Thursday Island, one male, two females; Bribie Island, female; Moreton Island, Moreton Bay, female; Stradbroke Island, Moreton Bay, three males, one female; Moreton Bay, female (Type of *L. miersi*); Tweed River, New South Wales, one female; Boolgin, Cape Levêque, nr. Derby, Western Australia, male and female.

LENGTHS.—Males, 160-220 mm.; females, 150-350 mm.

These records extend the known Queensland range from Low Is. (Stephenson *et al* 1931) north to Thursday I., and southwards to the New South Wales border.

In the type of *L. miersi* the rostrum is intermediate in shape between those shown in Kemp's figures of *L. maculata* (fig. 86) and his *L. maculata* var. *sulcirostris* (fig. 92). Exactly similar rostra were noted in seven specimens of *L. maculata* in the Museum collections. The shape of the carapace is a very doubtful diagnostic feature in that the regions outside the gastric grooves are completely decalcified. After allowing for this it compares very closely indeed with that of *L. maculata*.

The exposed somites of the thorax and abdomen, except the last abdominal somite, are decalcified dorsally. The decalcified tergites are papery in consistency and irregularly wrinkled like paper. This is almost certainly an artefact. The wrinkling of the last abdominal somite is similar to the more extensively wrinkled specimens of *L. maculata* in the collections.

The median elevation of the telson is identical with that of *L. maculata*. De Vis' use of the phrase "a bold sagittate median ridge" is too emphatic, and Kemp's description of the ridge in *L. maculata* agrees with that in the type of *L. miersi*.

The ten teeth on the raptorial dactylus are long and slender and the terminal one is not noticeably "anteriorly dilated" as described by De Vis. They are serrated on their posterior edges as De Vis noted, and also on their anterior edges, which he failed to note. In this respect, as in the general shape and proportions of the segments of the claw as a whole, the holotype of *L. miersi* resembles all the specimens of *L. maculata* in the Museum collections, except for two large females which show the expected modifications associated with their sex and size.

The colour of the specimen has evidently changed since De Vis prepared his description. The anterior half is dark chestnut-brown with irregular transparent areas. The free thoracic and the first five abdominal somites are mostly transparent, but with irregular longitudinal lines of chestnut colour in the submedian and lateral regions. The last abdominal somite and the telson are chestnut-brown merging into horn colour.

If the colour as described by De Vis is compared with Kemp's description of *L. maculata* the only difference would appear to be the presence in *L. miersi* of "a conspicuous white longitudinal band on each side of the dorsum."

It is concluded that De Vis' description is partly based on artefacts, and is partly inaccurate. The holotype is a specimen of *Lysiosquilla maculata* (Fabr.).

LYSIOSQUILLA PERPASTA Hale.

Lysiosquilla perpasta Hale, 1924, Rec. S. Austr. Mus., 2, pp. 497-9, pl. 33, fig. 1, text-fig. 382; Hale, 1927, Crustaceans South Australia, p. 33, fig. 23.

MATERIAL.—Bird Island, Moreton Bay, male and female; Myora, Moreton Bay, male.

LENGTHS.—Males, 20 and 26 mm.; female, 27 mm.

The only known Queensland localities are in Moreton Bay. The species ranges from southern Queensland to South Australia, but has not been recorded outside the Commonwealth.

LYSIOSQUILLA VERCOI Hale.

Lysiosquilla vercoi Hale, 1924, Rec. S. Austr. Mus., 2, pp. 499-501, pl. 33, fig. 2, text-fig. 383; Hale, 1927, Crustaceans South Australia, pp. 33-4, fig. 24.

MATERIAL.—Southport, female.

LENGTH.—51 mm.

The specimen differs from Hale's description in (a) the absence of chromatophores which is presumably an artefact; (b) the spine on the ischium of the raptorial claw is sharper than shown in the figure by Hale; and (c) in possessing additional spines on the raptorial dactylus.

The specimen has 20 spines on each dactylus as against 11 and 12 on the two sides of the holotype. Variation in the number of spines has also been noted in specimens from other collections in Australia.

The species has not been recorded previously from Queensland.

ODONTODACTYLUS CULTRIFER (White).

Gonodactylus cultrifer White, 1850, Proc. Zool. Soc. Lond., pp. 96-7, pl. 16, figs. 1, 2.

Gonodactylus carinifer Pocock, 1893, Ann. Mag. Nat. Hist., ser. 6, 11, p. 478, pl. 25, figs. 4, 4a, 4b.

Odontodactylus carinifer Kemp, 1913, Mem. Ind. Mus., 4, pp. 138-9.

Odontodactylus cultrifer Kemp, 1913, Mem. Ind. Mus., 4, pp. 137-8; Sunier, 1915-18, Contrib. Faune Indes Neerl. Inst. Sci. Buitenzorg, 1, pp. 72-4; Hansen, 1926, Siboga Exped., 104 Livr., Monogr. 35, p. 23; Kemp and Chopra, 1921, Rec. Ind. Mus., 22, pp. 307-8; Stephenson, 1952, Zool. Pap. Univ. Queensland, 1, pp. 10-11.

MATERIAL.—Mud Island, Moreton Bay, two females.

LENGTHS.—69 and 78 mm.

Both specimens have three teeth on each raptorial dactylus. The only known Australian locality is Moreton Bay, where the species appears to be common.

ODONTODACTYLUS SCYLLARUS (Linn.).

Cancer scyllarus Linnaeus, 1767, Syst. Nat., 12th Ed., 1, Pt. 2, p. 1054.

Odontodactylus scyllarus Borradaile, 1898, Proc. Zool. Soc. Lond., p. 36, pl. 5, fig. 6; Kemp, 1913, Mem. Ind. Mus., 4, pp. 135-7; Kemp and Chopra, 1921, Rec. Ind. Mus., 22, pp. 307-8; Komai, 1927, Mem. Coll. Sci. Kyoto. Imp. Univ., Ser. B, 3, pp. 335-6, pl. 13, fig. 2; Gravier, 1937, Ann. Inst. Oceanogr., 17, pp. 200-2, figs. 17-19.

MATERIAL.—Townsville, female; Cape Cleveland, female; Noosaville, female.

LENGTHS.—73-133 mm.

A new Australian record.

GONODACTYLUS CHIRAGRA (Fabricius).

Squilla chiragra Fabricius, 1781, Species Insectorum, 1, p. 515.

Gonodactylus chiragra Kemp, 1913, Mem. Ind. Mus., 4, pp. 155-62, Pl. 9, fig. 107; Bigelow, 1931, Bull. Mus. Comp. Zool. Harv., 77, pp. 113-6, pl. 2, fig. 1; Boone, 1934, Bull. Vanderbilt Mar. Mus., 5, pp. 11-13, pl. 1, 2A, B; Gravier, 1937, Ann. Inst. Oceanogr., 17, pp. 202-4; Holthius, 1941, Temminkia, 6, pp. 277-81, figs. 7a, b.

MATERIAL.—Murray Island, four males, four females; Yorke Island, five males; Fantome Island, two females; Keeper Reef, male and female; Orpheus Island, female; Mackay, female; Moreton Bay, two males, one female.

LENGTHS.—Males, 29-72 mm.; females, 34-78 mm.

This is the Australian stomatopod which has been most frequently recorded in the literature.

GONODACTYLUS FALCATUS (Forskål).

Cancer falcatus Forskal, 1775, Decc. Anim., No. 60, p. 96.

Gonodactylus glabrous Brooks, 1886, Voy. H.M.S. Challenger, Zool., 16, pp. 62-4, pl. 14, fig. 5, pl. 15, figs. 7, 9; Kemp, 1913, Mem. Ind. Mus., 4, pp. 167-9, pl. 9, fig. 113, text-fig. 2 on p. 170; Bigelow, 1931, Bull. Mus. Comp. Zool. Harv., 77, pp. 127-35, text-fig. 1; Boone, 1934, Bull. Vanderbilt Mar. Mus., 5, pp. 13-16, pl. 3; Gravier, 1938, Mem. Inst. Egypte, 37, pp. 178-83, fig. 5, fig. D; Barnard, 1950, Ann. S. African Mus., 38, p. 863, fig. 3f.

Gonodactylus falcatus Holthius, 1941, Temminkia, 6, pp. 284-8, fig. 9a.

MATERIAL.—Queensland, two males, two females; Yorke Island, male; Pandora Reef, Brooke Island, male; Moreton Bay, male and female.

LENGTHS.—Males, 34-49 mm.; females, 42-51 mm.

Australian records have been summarised by Stephenson (1952).

GONODACTYLUS GRAPHURUS Miers.

Gonodactylus graphurus Miers, 1875, Ann. Mag. Nat. Hist., Ser. 4, 16, p. 344; Brooks, 1886, Voy. H.M.S. Challenger, Zool., 16, pp. 58-62, pl. 14, figs. 1, 4, 6, pl. 15, figs. 3-8; Kemp, 1913, Mem. Ind. Mus., 4, pp. 169-71; Gravier, 1937, Ann. Inst. Oceanogr., 17, pp. 205-7, figs. 21-2.

MATERIAL.—Bowen, under rocks, male; Cape Bowling Green, female.

LENGTHS.—Male, 58 mm.; female, 50 mm.

GONODACTYLUS GLYPTOCERCUS Wood Mason.

Gonodactylus glyptocercus Wood Mason, 1875, Proc. As. Soc. Bengal, p. 232; Wood Mason, 1876, Ann. Mag. Nat. Hist., Ser. 4, 17, p. 263; Kemp, 1913, Mem. Ind. Mus., 4, pp. 186-7; Bigelow, 1931, Bull. Mus. Comp. Zool. Harv., 72, pp. 136-9.

Protosquilla cerebralis, Brooks, 1886, Voy. H.M.S. Challenger, Zool., 16, pp. 72-5, pl. 14, figs. 2, 3, pl. 16, figs. 2, 3; Borradaile, 1898, Proc. Zool. Soc. Lond., p. 33, pl. 5, figs. 6a.

Gonodactylus stoliurus McNeill, 1926, Austr. Zool., 4, pp. 317-8, fig. 2.

MATERIAL.—Murray Island, female.

LENGTH.—36 mm.

Previous Australian records (McNeill, 1926; Stephenson, 1952) are from the Capricorn Group, where the species is probably abundant.

DISCUSSION.

The number of species in the Australian stomatopod fauna is now increased by the additions of *Squilla quinquedentata*, *S. foveolata*, *Pseudosquilla pilaensis*, and *Odontodactylus scyllarus*, while the doubtful Australian records of *Squilla nepa* are now confirmed. The Queensland fauna is increased by the addition of *Lysiosquilla vercoi*. On the other hand the lists should now omit *L. miersi* which is a synonym of *L. maculata*.

The total known Australian forms now amount to thirty-four species. Of these, twenty have been recorded from Queensland, eight from New South Wales, four from Victoria, one from Tasmania, seven from South Australia, eight from Western Australia, and six from the Northern Territory. The difference in numbers probably reflects different intensities of collecting and recording. These efforts are likely to be roughly comparable only in the eastern mainland States and further comments are restricted to this area.

Of the thirty-four Australian species it appears that twenty-seven have been recorded from extra Australian sources, and seven from Australia only. The following fractions of the fauna from each of the eastern States comprise species not restricted to Australia:—Queensland 21/26, New South Wales 4/8, Victoria 1/4, South Australia 2/7. It may be concluded that the Queensland fauna is dominated by an overflow of Indo-Pacific species. As a corollary, it appears probable that these species are limited in distribution by the colder waters to the South.

Southern Queensland, from the Capricorn Group to the Tweed River, is an area of especial interest with respect to stomatopod distribution. On present data, including some manuscript records, it is the southern limit of eight northern species (*Squilla interrupta*, *S. anomala*, *S. depressa*, *Pseudosquilla ciliata*, *Lysiosquilla maculata*, *Odontodactylus cultrifer*, *Gonodactylus graphurus*, and *G. glyptocercus*). It is also the northern limit of three southern species (*Squilla laevis*, *Lysiosquilla perpasta*, and *L. vercoi*). One is uncertain whether the distributional limits within this comparatively small area are a real indication of faunal boundaries, or whether they reflect more intensive collecting here than elsewhere in Australia. This can be clarified only by a more careful collection of stomatopods from other Australian localities and by the similar treatment of other groups. The general impression gained from a study of the marine fauna as a whole, and such reports as are available from other workers (Hedley, 1904; Clark, 1921; Whitley, 1932; Iredale and Allen, 1940; Clark, 1946; Endean, 1952 in press), indicate that the boundaries are real, and that there is considerable diversity of origin in the elements comprising the marine fauna.

ACKNOWLEDGMENTS.

I am very grateful to the Director of the Queensland Museum for his kindness in allowing me to examine the collections. Thanks are due also to the Director of the Australian Museum for the loan of specimens of *Lysiosquilla vercoi* and of *Squilla depressa*, and to the Director of the Zoological Survey of India for the loan of a specimen of *S. woodmasoni*. Mr. F. McNeill of the Australian Museum has helped throughout with advice, friendly comments, and by the loan of numerous reprints. I am grateful to Mr. R. K. Bryson of Townsville who forwarded 28 stomatopods from that area.

LITERATURE CITED.

- Boone, L. (1934). Scientific Results of the World Cruise of the Yacht "Alva," 1931, William K. Vanderbilt commanding. Crustacea: Stomatopoda and Brachyura. Bull. Vanderbilt Mar. Mus., 5, pp. 1-210, 109 plates.
- Clark, H. L. (1921). The Echinoderm Fauna of Torres Straits. Its Composition and Origin. Carn. Inst. Wash. Pub., 214, Dept. Mar. Biol., 10, pp. VIII + 224, 38 plates.
- Clark, H. L. (1946). The Echinoderm Fauna of Australia: Its composition and its Origin. Carn. Inst. Wash. Pub., 556, pp. I-IV + 1-567.
- de Man, J. G. (1888). Report on the Podophthalmous Crustacea of the Mergui Archipelago. J. Linn. Soc. Lond., 22, pp. 295-99.
- De Vis, C. W. (1883). Description of a New Species of Squill from Moreton Bay. Proc. Linn. Soc. N.S.W., 7, pp. 321-2.
- Endean, R. (1952 in the press). Faunistic Records from Queensland, Part III: The Asteroidea, Ophiuroidea, Echinoidea, and Holothuroidea in the Departmental Collection. Zool. Pap. Univ. Q'ld, I.
- Hale, H. M. (1924). Notes on Australian Crustacea, No. 1. Rec. S. Austr. Mus., 2, pp. 491-502, pl. 32-3, text-figs. 381-4.
- Haswell, W. H. (1882). Catalogue of the Australian Stalk and Sessile-eyed Crustacea. Sydney, pp. XXIV + 326, Pl. 1-4.
- Hedley, C. (1904). The Effect of the Bassian Isthmus upon the existing Marine Fauna: A study in Ancient Geography. Proc. Linn. Soc. N.S.W., 27, pp. 876-83.
- Henderson, J. R. (1893). A Contribution to Indian Carcinology. Trans. Linn. Soc. Lond. Zool., 5, pp. 325-458, pls. 36-40.
- Holthius, L. B. (1941). Biological Results of the Snellius Expedition 12; The Stomatopoda of the Snellius Expedition. Temminkia, 6, pp. 241-94, 9 figs.
- Iredale, T. and Allen, J. (1940). A review of the relationships of the Mollusca of Lord Howe Island. Aust. Zool., 8, pp. 444-51.
- Kemp, S. (1913). An Account of the Crustacea Stomatopoda of the Indo-Pacific Region based on the collection in the Indian Museum. Mem. Ind. Mus., 4, pp. 1-217, pls. 1-10.
- McNeill, F. A. (1926). The Biology of North-West Islet, Capricorn Group (J.) Crustacea. Austr. Zool., 4, pp. 299-318, pl. 41, text-figs. 1-2.
- Miers, E. J. (1880). On the Squillidae. Ann. Mag. Nat. Hist., Ser. 5, 5, pp. 1-30, pp. 108-27, pl. 1-3.
- Stephenson, T. A., Stephenson, Anne, Tandy, A., and Spender, W. (1931). The Structure and Ecology of Low Isles and Other Reefs. Sci. Rep. Gt. Barrier Reef Exped., 3, pp. 17-112, pls. 1-27.
- Stephenson, W. (1952). Faunistic records from Queensland. I General Introduction and II, Adult Stomatopoda (Crustacea). Zool. Pap. Univ. Q'ld., I, pp. 1-15.
- Tate, R. (1883). Description of some New Species of Squilla from South Australia. Trans. Proc. Rept. Roy. Soc. S. Austr., 6, pp. 48-53, pl. 2.
- Tweedie, M. W. F. (1935). Two New Species of Squilla from Malayan Waters. Bull. Raffles Mus., 10, pp. 45-52, 1 pl.
- Whitley, G. P. (1932). Marine Zoogeographical Regions of Australasia. Aust. Nat., 8, pp. 166-7.



Stephenson, William. 1953. "Notes on Australian Stomatopoda (Crustacea) in collections of the Queensland Museum." *Memoirs of the Queensland Museum* 13(1), 40–49.

View This Item Online: <https://www.biodiversitylibrary.org/item/189931>

Permalink: <https://www.biodiversitylibrary.org/partpdf/271153>

Holding Institution

Queensland Museum

Sponsored by

Atlas of Living Australia

Copyright & Reuse

Copyright Status: In copyright. Digitized with the permission of the rights holder.

License: <http://creativecommons.org/licenses/by-nc-sa/4.0/>

Rights: <https://biodiversitylibrary.org/permissions>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.