

Report on the Results of the Naga Expedition
Ecology of the Gulf of Thailand and
the South China Sea

1963.6

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East Asia Research Program

X. CHAETOGNATHA, SIPHONOPHORA E MEDUSAE IN THE
GULF OF SIAM AND THE SOUTH CHINA SEA

outside of the straits that have been recorded

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Cruises examined: S-1 (November, 1959, Gulf of Siam);
S-8 (September, October, 1960, South China
Sea;
S-10 (January, February, 1961, Gulf of Siam
and South China Sea).

For each cruise all the samples available were studied.

It was found for both Chaetognatha, Siphonophorae and Medusae,
that the number of species recorded was larger in the South China
Sea than in the Gulf of Siam. The species common to both regions
are oceanic, extending their distribution into neritic regions. The
species recorded in the Gulf of Siam which were not observed in
the South China Sea were typical of neritic regions. The species
only observed in the South China Sea were typical oceanic not
extending their distribution into neritic regions.

CHAETOGNATHA:

CHAETOGNATHA recorded in the Naga Region:

- Krohnitta subtilis (Grassi) 1881
- K. pacifica (Aida) 1897
- Pterosagitta draco (Krohn) 1853
- Sagitta bedoti Béraneck 1895
- S. bipunctata Quoy and Gaimard 1827
- S. decipiens Fowler 1905
- S. bedfordii Doncaster, 1903
- S. enflata Grassi 1881
- S. ferox Doncaster 1903
- S. hexaptera d'Orbigny 1834-44
- S. minima Grassi 1881
- S. neglecta Aida 1897
- S. pacifica Tokiska 1940
- S. pulchra Doncaster 1903
- S. oceania Gray 1930

S. regularis Aida 1897

S. robusta Doncaster 1903

S. tropica tokioka 1942 = S. septata Doncaster 1903

The Gulf of Siam and the South China Sea present similarities regarding the total abundance of the Chaetognatha's population. However, in the South China Sea were observed more species of chaetognaths than in the Gulf of Siam.

The species of chaetognaths recorded could be grouped as follows:

- a) Cosmopolitan ⁽¹⁾ in temperate and warm oceanic waters: S. enflata, S. hexaptera, S. minima, S. bipunctata, S. lyra, K. subtilis, P. draco.
- b) Indo-Pacific warm oceanic waters: S. pacifica,
- c) Indo-Pacific tropical and equatorial belts: S. ferox, S. pulchra, S. regularis, S. robusta.
- d) Indo-Pacific warm neritic regions: S. bedoti, S. bedoti ^{f. large} ~~minor~~, S. neglecta, S. tropica, S. oecania.
- e) Oceanic-cosmopolitan in the equatorial and tropical belts: K. pacifica.
- f) Mesoplanktonic, cosmopolitan in the temperate and warm oceanic waters: S. decipiens.

S. enflata was the most abundant in number of specimens and in space covered both in the Gulf of Siam and in the South China Sea. This species and S. pulchra presented a similar quantitative distribution in both regions.

S. ferox and S. robusta distribution region overlaps in the two dimensions. It appears that S. ferox and S. robusta are competitive species, and whenever S. ferox is dominant S. robusta appears in small number if any and vice versa.

S. ferox was recorded in all the Sts. in the South China Sea, and in most of the Sts in the Gulf of Siam. S. ferox was more abundant than S. robusta in the South China Sea, whereas the latter was predominant in the Gulf of Siam.

S. neglecta, K. pacifica, K. subtilis, S. regularis, P. draco were found more abundant in the South China Sea than in the Gulf of Siam.

(1) the term cosmopolitan means the species inhabits the Atlantic, Indian and Pacific oceans and adjacent seas.

in the Gulf of Siam: S. bruuni Alvarino, 1967

in the South China Sea: S. tokiokai Alvarino 1967

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S. bedoti ~~f. minor~~, S. oceania and S. tropica appeared restricted to the Gulf of Siam. These species are typical of confined coastal areas. The first two were very abundant in this region, ranging second behind S. enflata.

S. neglecta and S. bedoti ^(*bedoti* form) are also neritic species, although they mainly inhabit coastal regions under oceanic influence. in this region

S. bedoti ^{f. *longe* *}, S. hexaptera, S. decipiens, S. lyra, S. bipunctata, S. minima, S. pacifica were not observed in the Gulf of Siam.

SIPHONOPHORAE

31 species of siphonophores were observed in the South China Sea, and only 7 species in the Gulf of Siam.

SIPHONOPHORAE recorded in the Naga region:

- Eugeniaca delismani Totton 1954
- Diphyes bojani (Eschscholtzi) 1825
- D. chamissoni Huxley 1859
- D. dispar Chamisso & Eysenhardt 1821
- Diphyopsis mitra (Huxley) 1859
- Chelophyes appendiculata (Eschscholtzi) 1829
- Ch. contorta (Lens & Riemsdijk) 1908
- Eudoxoides spiralis (Bigelow) 1911
- Bassia bassensis (Quoy & Gaimard) 1834
- Abylopsis tetragona (Otto) 1823
- Abyla haeckli Lens & Riemsdijk 1908
- Abyla eschscholtzii (Huxley) 1859
- Abyla schmidtii Sears 1953
- Ceratocymba leuckartii Huxley 1859
- Ceratocymba sagittata (Quoy & Gaimard) 1827
- Enneagonum hyalinum Quoy & Gaimard 1827 and E. searsae Alvarino 1968
- Lensia subtiloides (Lens & Reimsdijk) 1908
- L. hotspur Totton 1941
- L. conoidea Keferstein & Ehlers 1861
- L. challengerii Totton 1954
- L. campanella (Moser) 1925

* Saritta nazae Alvarino 1967

Sulculeolaria brintoni Alvarino 1968

Sulculeolaria quatridentata (Quoy & Gaimard) 1834

S. monoica (Chun) 1888

S. biloba (Sars) 1846

Hippopodius hippopus (Forsk.) 1775

Stephanomia bijuga (Delle Chiaje) 1842

Bargmannia elongata Totton 1954

Nectodroma reticulata Bigelow 1905

Amphicaryon acaule Chun 1888

Agalma okeni Eschscholtzi 1825

Galetta chuni Lens & Riemsdijk

Nectalia loligo Haeckel 1888

Rosacea plicata Quoy & Gaimard 1827

Porpita pacifica Lesson 1826

The species recorded are typical of tropical and equatorial oceanic waters, exception of Ch. appendiculata and Lensia conoidea which also extend to temperate regions.

D. chamissoni was the dominant species in the Gulf of Siam, followed by Bassia bassiensis, Enneagonum hyalinum, L. subtilis, Sulculeolaria quatridentata, Stephanomia bijuga and Porpita pacifica. Most of the species appeared represented by both the paragastric and eudoxid forms.

D. chamissoni, Bassia bassiensis and Enneagonum hyalinum appeared with a similar quantitative distribution in both the Gulf of Siam and the South China Sea.

Porpita pacifica was not observed in the South China Sea.

MEDUSAE of the Naga Region:

13 species of Medusae were observed in the Gulf of Siam, and 17 in the South China Sea.

List of the species of Medusae recorded in the Naga Region:

Liriope tetraphylla (Chamisso & Eysenhardt) 1821

Aequorea pensilis (Haeckel) 1879

Eutonina indicans (Romanes) 1876

Octorchis gegenbauri Haeckel 1864

Leuckartiara octona (Fleming) 1864

Leuckartiara nobilis Hartlaub 1914
Solmundella bitentaculata (Quoy & Gaimard) 1834
Crossota pedunculata Bigelow 1913
Halopsis ocellata A. Agassiz 1863
Rhopalonema velatum Gegenbaur 1856
Geryone proboscidalis (Forsk.) 1775
Aglantha digitale (Fabricius) 1780
Bougainvillia britannica (Forbes) 1841
Bythotiara murrayi (Günther) 1903
Bothrynema brucei Browne 1908
Laodicea undulata (Forbes & Goodsir) 1851
Octocanna funeraria (Quoy & Gaimard) 1827
Eirene viridula (Peron & Lesueur) 1809
Orchistoma Sp.
Helgicirrha schulzei Hartlaub 1909
Aglaura hemistoma Peron & Lesueur 1909
Heterotiara anonyma Mass 1905

Liriope tetraphylla, Eutonia indicans, Octorchis gegenbauri, Halopsis ocellata, Bougainvillia britannica, Laodicea undulata, Octocanna funeraria were observed in both the China Sea and the Gulf of Siam. Those are oceanic cosmopolitan, mainly found in tropical and warm waters.

Solmundella bitentaculata, Crossota pedunculata, Rhopalonema² velatum, Geryone proboscidalis, Aglantha digitale, Bythotiara murrayi, Phyalidium hemisphericum, Botryonema brucei, Heterotiara anonyma, Leuckartiara nobilis, were only recorded in the South China Sea.

Solmundella bitentaculata appeared in the largest number in the South China Sea.

Liriope tetraphylla was the most abundant species for both regions.

Leuckartiara octona, Aequorea pensilis, Eirene viridula, Orchistoma sp., Helgicirrha schultzei and Aglaura hemistoma were not observed in the South China Sea. The first is coastal, the second inhabits coastal regions reached by oceanic influence and the others are cosmopolitan in the warm oceanic regions.