

## Echinoderm Fauna of Dokdo, Korea

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Six echinoderm species were added to the echinoderm fauna of Dokdo, Korea based on the samples collected from inter- and subtidal areas of the island on spring and autumn twice a year from 2002 to 2004. As result, sixteen echinoderm species were recorded from Dokdo.

Key words: Echinodermata, Fauna, Dokdo

### Introduction

Dokdo is located in the easternmost of Korea. It is influenced by the Tsushima Warm Current and the North Korean Cold Current. So that the tropical and boreal echinoderms abundant in the island. Ten echinoderm species have been reported from the inter- and subtidal areas of Dokdo (Kim, 1978; Kim and Choe, 1981; Hong, 1981; Je et al., 1997; MOMAF, 1999). In the present study, a total of 16 echinoderms were identified. Of these species, 6 species representing 5 families were new to the echinoderm fauna of Dokdo.

### Material and Methods

The echinoderms were sampled in Dokdo in spring and autumn twice a year from 2002 to 2004, by SCUBA diving from 0-20 m depth (Fig. 1). All specimens were fixed and preserved in 10% neutral formaline solution. Morphological characters were examined for species identification.

### Systematic Accounts

Phylum Echinodermata Klein, 1734  
Class Stellerioidea Lamarck, 1816  
Subclass Asteroidea de Blainville, 1830  
Order Spinulosida Perrier, 1894  
Family Asterinidae Gray, 1840  
Genus *Asterina* Nardo, 1834

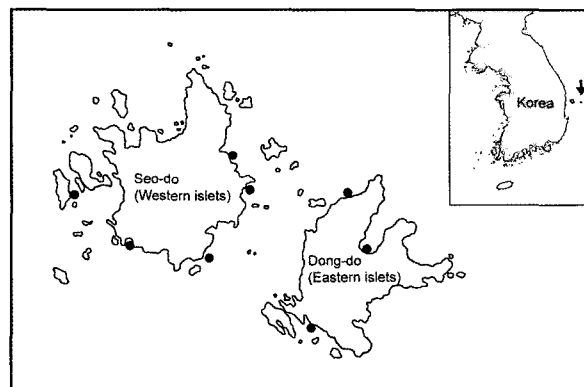


Fig. 1. The sampling sites of Dokdo, Korea.

### *Asterina pectinifera* Müller and Troschel, 1842

#### Material examined

Seo-do, 10 May 2003, 9 m in depth, 7 specimens;  
Dong-do, 10 May 2003, 5 m in depth, 4 specimens;  
Seo-do, 21 March 2004, 11 m in depth, 2 specimens;  
Seo-do, 7 September 2004, 19 m in depth, 3 specimens.

Family Echiniasteridae Verrill, 1867  
Genus *Henricia* Gray, 1840

### *Henricia nipponica* Uchida, 1928

#### Material examined

Seo-do, 5 May 2003, 4 m in depth, 1 specimen;  
Dong-do, 10 May 2003, 5 m in depth, 1 specimen;  
Seo-do, 7 September 2004, 6 m in depth, 2 specimens  
Family Solasteridae Forbes, 1839

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Genus *Solaster* Forbes, 1839

***Solaster dowsoni* Verrill, 1880**

**Material examined**

Dong-do, 11 May 2003, 16 m in depth, 1 specimen; Seo-do, 7 September 2004, 19 m in depth, 1 specimen.

**Remarks**

This species is newly reported from Dokdo, Korea.

Order Forcipulata Perrier, 1884

Family Asteroiidae Gray, 1840

Subfamily Labidiasterinae Verrill, 1914

Genus *Plzaster* Fisher, 1941

***Plazaster borealis* (Uchida, 1928)**

**Material examined**

Seo-do, 10 May 2003, 10 m in depth, 2 specimens; Dong-do, 10 May 2003, 11 m in depth, 1 specimen.

Subfamily Coscinasterinae Fisher, 1923

Genus *Coscinasterias* Verrill, 1867

***Coscinasterias acutispina* (Stimpson, 1857)**

*Asterias acutispina*: Sladen, 1889, p. 565

*Asterias calamaria* var. *japonica* Döderlein, 1902, p. 332

*Coscinasterias acutispina*: Verrill, 1914, p. 46

**Material examined**

Seo-do, 10 May 2003, 4 m in depth, 3 specimens; Dong-do, 10 May 2003, 5 m in depth, 1 specimen; Seo-do, 8 September 2004, 9 m in depth, 1 specimen.

**Remarks**

This species is newly reported from Dokdo, Korea.

Genus *Distolasterias* Perrier, 1896

***Distolasterias nipon* (Döderlein, 1902)**

*Asterias nipon*: Döderlein, 1902, p. 334;

*Distolasterias nipon*: Fisher, 1928, p. 103, pl.43, fig. 5, pl.60, figs. 2, 2a, pl. 8, fig. 8

**Material examined**

Seo-do, 10 May 2003, 12 m in depth, 1 specimen; Seo-do, 21 March 2004, 10 m in depth, 1 specimen.

**Remarks**

This species is newly reported from Dokdo, Korea.

Subfamily Asteroiinae (Verrill, 1914)

***Aphelasterias japonica* (Bell, 1881)**

**Material examined**

Seo-do, 10 May 2003, 6 m in depth, 1 specimen; Dong-do, 10 May 2003, 15 m in depth, 2 specimens.

Genus *Asterias* (Linnaeus, 1758)

***Asterias amurensis* Lütken, 1871**

**Material examined**

Seo-do, 10 May 2003, 7 m in depth, 3 specimens; Dong-do, 10 May 2003, 11 m in depth, 2 specimens; Seo-do, 21 March 2004, 9 m in depth, 1 specimen; Seo-do, 8 September 2004, 14 m in depth, 1 specimen.

Subclass Ophiuroidea, Gray, 1840

Order Myophiurida, Matsumoto, 1912

Family Ophiotrichidae Ljungman, 1866

Genus *Ophiothrix* Muller and Troschel, 1840

***Ophiothrix exigua* Lyman, 1874**

*Ophiothrix exigua* Lyman, 1874, p. 239, pl. 4, figs. 24-25

*Ophiothrix selligera*: Marktanner-Turnerandscher, 1887, p. 310 (non Lyman);

*Ophiothrix marenzelleri*: Koehler, 1904, p. 103, figs. 76-78

**Material examined**

Seo-do, 10 May 2003, 6 m in depth, 7 specimens; Dong-do, 10 May 2003, 5 m in depth, 5 specimens; Seo-do, 21 March 2004, 11 m in depth, 11 specimens; Seo-do, 8 September 2004, 14 m in depth, 6 specimens.

**Remarks**

This species is newly reported from Dokdo, Korea.

Family Ophiidermatidae, Matsumoto, 1915

Genus *Ophiarachnella* Ljungman, 1872

***Ophiarachnella gorgonia* Müller and Troschel, 1842**

Material examined. Seo-do, 10 May 2003, 6 m in depth, 12 specimens; Dong-do, 10 May 2003, 9 m in depth, 14 specimens.

Family Ophiuridae Lyman, 1865

Genus *Ophioplocus* Lyman, 1861

***Ophioplocus japonicus* H.L. Clark, 1911**

Material examined. Seo-do, 10 May 2003, 6 m in depth, 1 specimen; Seo-do, 21 March 2004, 9 m in depth, 1 specimen.

Class Echinoidea Leske. 1778

Order Echinoida Claus, 1876

Family Toxopneustidae Troschel, 1872

Genus *Pseudocentrotus* Brandt, 1835

***Pseudocentrotus depressus* (A. Agassiz, 1863)**

*Toxocidaritis depressus* A. Agassiz, 1863b, p. 356

*Strongylocentrotus depressus* A. Agassiz, 1872-1874, p. 162, 440;

*Pseudocentrotus depressus*: Mortensen, 1903, p. 137.

**Material examined**

Seo-do, 11 June 2002, 14 m in depth, 1 specimen;  
Dong-do, 10 May 2003, 8 m in depth, 1 specimen;  
Seo-do, 21 March 2004, 11 m in depth, 2 specimens.

**Remarks**

This species is newly reported from Dokdo, Korea.

Family Strongylocentrotidae Gregory, 1900

Genus *Strongylocentrotus* Brandt, 1835

***Strongylocentrotus nudus* (A. Agassiz, 1863)**

*Toxocidaritis nudus* A. Agassiz, 1863b, p. 356

*Strongylocentrotus nudus*: A. Agassiz, 1872-74, p. 165, 448, pl. 24(26-30)

**Material examined**

Seo-do, 10 May 2003, 4 m in depth, 2 specimens;  
Dong-do, 10 May 2003, 5 m in depth, 4 specimens;  
Dong-do, 21 March 2004, 8 m in depth, 2 specimens;  
Seo-do, 7 September 2004, 10 m in depth, 1 specimen.

**Remarks**

This species is newly reported from Dokdo, Korea.

Genus *Hemicentrotus* Mortensen, 1942

***Hemicentrotus pulcherrimus* (A. Agassiz, 1863)**

Material examined. Seo-do, 10 May 2003, 3 m in depth, 2 specimens; Seo-do, 21 March 2004, 7 m in depth, 2 specimens; Seo-do, 7 September 2004, 10 m in depth, 1 specimen.

Family Echnomertridae Gray,

Genus *Anthocidaritis* Lütken, 1864

***Anthocidaritis crassispina* (A. Agassiz, 1863)**

**Material examined**

Seo-do, 10 May 2003, 2 m in depth, 9 specimens;  
Dong-do, 10 May 2003, 5 m in depth, 14 specimens;  
Seo-do, 21 March 2004, 8 m in depth, 4 specimens;  
Seo-do, 7 September 2004, 4 m in depth, 6 specimens

Class Holothuroidea de Blainville, 1834

Subclass Aspidochirotea Grube, 1840

Order Aspidochirotida Grube, 1840

Family Stichopodidae Haeckel, 1896

Genus *Stichopus* Brandt, 1835

***Stichopus japonicus* Selenka, 1867**

**Material examined**

Dong-do, 17 June 2002, 12 m in depth, 3 specimens;  
Dong-do, 10 May 2003, 5 m in depth, 1 specimen;  
Seo-do, 21 March 2004, 11 m in depth, 2 specimens;  
Seo-do, 7 September 2004, 11 m in depth, 1 specimen.

Sixteen echinoderm species were found in Dokdo. Of these species, 6 species are new to the echinoderm

Appendix 1. List of Echinoderm fauna reported from Dokdo

Species	Kim (1978)	Kim & Choe (1981)	Hong (1982)	Je et al. (1997)	MOMAF (1999)	The present study
<i>Asterina pectinifera</i>					○	○
<i>Henricia nipponica</i>		○			○	○
<i>Solaster dowsoni</i>						○
<i>Plazaster borealis</i>					○	○
<i>Coscinasterias acutispina</i>						○
<i>Distolasterias nipon</i>						○
<i>Aphelasterias japonica</i>					○	○
<i>Asterias amurensis</i>					○	○
<i>Ophiothrix exigua</i>						○
<i>Ophiarachella gorgonia</i>					○	○
<i>Ophioplocus japonicus</i>		○			○	○
<i>Pseudocentrotus depressus</i>						○
<i>Strongylocentrotus nudus</i>						○
<i>Hemicentrotus pulcherrimus</i>					○	○
<i>Anthocidaritis crassispina</i>	○		○	○	○	○
<i>Stichopus japonicus</i>					○	○
Total number of species	1	2	1	1	10	16

fauna of Dokdo. They are *Solaster dowsoni* Verrill, 1880, *Cosinasterias acutispina* (Stimpson, 1857), *Distolasterias nipon* (Döderlein, 1902), *Ophiothrix exigua* Lyman, 1874, *Pseudocentrotus depressus* (A. Agassiz, 1863), and *Strongylicentrotus nudus* (A. Agassiz, 1863). These 6 species could be classified into 2 classes of 4 orders: Spinulosida, 1 species in 1 family; Forcipulata, 2 species in 1 family; Myo-phiuirida, 1 species in 1 family; Echioida, 2 species in the 2 family.

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