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# Poorly known Ascidiacea collected in the vicinity of the Commander Islands and East Kamchatka, NW Pacific

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## Abstract

Deep-water *Ascidia escabanae* known previously only from Escabana Trough, NE Pacific and *Ciona pomponiae*, originally described from Galapagos Islands are recorded at abyssal and bathyal depths in the region of Commander Islands and East Kamchatka in NW Pacific. *Ciona gefesti* is a junior synonym of *C. pomponiae*. The northern Atlantic species *C. gelatinosa* Bonnevie, 1896 (previously thought to be a subspecies of *C. intestinalis* and related to the Pacific Ocean *C. mollis*) is redescribed here and shown to be a distinct species. Also discussed are several littoral and bathyal *Molgula* spp. considered previously as closely related or possibly conspecific that are shown here to be separate species readily distinguished by their gonads. *Molgula beringense* **sp.n.** is described from the vicinity of the Bering Island.

**Key words:** *Ciona*, *Ascidia*, *Molgula*, North Pacific

## Introduction

Ascidians described in this paper include shallow-water specimens we collected on the Commander Islands and Kamchatka and also deep-water specimens from the same region received from the Institute of Oceanology, Moscow. Some species recorded in the studied material have been wrongly identified previously (Sanamyan 1998, Sanamyan and Sanamyan 1998) and are redescribed here. Species of *Ciona* other than *C. intestinalis* are seldom encountered and are given some attention in this paper. The only deep-water *Ciona* other than *C. pomponiae* known to occur in the northern Pacific is *C. mollis* Ritter, 1907, which Monniot and Monniot (1989) thought may be related to *C. gelatinosa* Bonnevie, 1896, a possible subspecies of *C. intestinalis* (see Van Name 1945; Hoshino and Nishikawa 1985). As several authors have proposed relationships linking *C. mollis*, *C. intestinalis* and *C. gelatinosa*, the latter species has been redescribed to establish its identity and, in particular, its differences from *C. pomponiae*. *Ciona pomponiae* Monniot and Monniot, 1989 and *Ascidia escabanae* Monniot, 1998 are known from very few (three and nine) specimens but appear to have very wide geographic ranges, a feature commonly encountered in deep-water species. Surprisingly, many shallow-water or even intertidal species of N Pacific coast of America are less known than abyssal species. In particular very little information is published on the morphology and species characters of many small North American species of *Molgula* described about a century ago by Herdman (1898) and Huntsman (1912a, 1912b). Some were considered to be synonyms by Van Name (1945), but the real status of each species is not well understood and this group of often small, cryptic, sandy *Molgula* spp. appears to be more diverse than previously was thought.

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