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<th>Title</th>
<th>DROPLETS FROM THE PLANKTON NET XXI. -WHITE SHELLS OF IANTHINA PROLONGATA BLAINVILLE-</th>
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<tbody>
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Kyoto University
The fishermen of this vicinity were annoyed by the drop in price of mackerel and jack mackerel caught so richly in the coastal waters of this area after the end of August. Probably this was caused by the disappearance of the cooler coastal water mass and the approach of the warm water current toward shore. On Sunday afternoon, September 5, 1965, at the end of his summer vacation my son, Takasi, Jr., found a number of pleustonic animals were just being stranded on the northern sand beach of the laboratory. Being helped by the small boy, Chihiro Nishimura, he gathered most of them and brought the collection to me for observation. This collection included 643 janthinas, 62 portuguese-men-of-war, 3 veellahas and a considerable number of porpitas. The last members were less than 38 mm in diameter and mostly heavily damaged. Veella was less than 23 mm in length and the sail was stretched from the left above to right below (NW to SE). Of 62 physalias 56 were right-handed individuals, while the other 6 were left-handed and very small, less than 19 mm in length of pneumatophore.

Of 643 janthinas, 630 were Ianthina prolongata Blainville (= globosa Swainson), 9 were I. umbilicata d'Orbigny (= globosa Blainville), and 4 were I. janthina (Linne). Four shells of I. janthina were all young shells, 4 mm high by 6 mm wide to 9mm high by 11 mm wide, and of the flattened form known generally in this country by the name Ianthina batteata Reeve. Shells of I. umbilicata were 6 mm high by 6 mm wide to 11 mm high by 10 mm wide.

Shells of I. prolongata were 6 mm high by 7 mm wide to 29 mm high by 27 mm wide. The colouration differs considerably from specimen to specimen, but there is generally seen the trend toward fading of the colour with the increase in shell size. Smaller shells are most frequently purplish throughout, leaving a white belt along the suture, while in the larger specimens of I. prolongata the shell surface under the water in the living state on the sea surface, which includes the whole spire and the upper side of the body whorl, becomes much paler than the underside of the last whorl exposed to the light. On the underside of the body whorl, the purplish colour is especially deep in the proximal half of the whorl. The above mentioned fading may

1) Contributions from the Seto Marine Biological Laboratory, No. 449.

rarely occur on smaller shells and contrarily some larger shells may retain
the deep colouration characteristic of the smaller shells. Thus smaller shells
resemble very closely those of *I. umbilicata*. However, the young of the two
species can be distinguished from each other by the fact that in *I. umbilicata*
the white belt along the suture is generally narrower and more sharply
defined. Also in *I. umbilicata* the shell has a rather bluish hue throughout,
while in *I. prolongata* the shell is a little pinkish. In *I. umbilicata* the spire is
higher, the contour of respective whorls of the spire shows less curvature
and the keel, though very narrow, is much more distinctly defined than in
*I. prolongata*. These features may be helpful in identifying exactly shells of
these species with broken apertures.

It was most strange that in this population there were found thirteen
whitish shells of *I. prolongata*. These shells are 9 mm high by 9 mm wide to
18 mm high by 16 mm wide in size and quite the same in appearance as the
usual coloured shells, excepting their lack of colour for the most part. They
are wholly whitish throughout the spire and the upper surface of the body
whorl but lightly purplish at the protoconch except for the 11 mm high by
10 mm wide shell in which the protoconch is quite colourless. On the under­
side of the body whorl, only the small limited area near the proximal end
of the columella is faintly coloured purplish. The animal body of *I. prolongata*
is generally coloured light purplish, while it is quite whitish for individuals
with white shells. When I examined the collected fresh specimens I thought
at first sight that those individuals with whitish shells had been dead for
at least several hours. But really they were still alive and ejected the
purplish ink from the mantle cavity when given strong stimulation in handling
them.

When the whole collection of shells is arranged by colouration from deep
to light, it may be noticed with surprise that the group of whitish shells
seems rather isolated from the others, with scarcely any intermediate shells
showing the gradual fading. Moreover, Dr. R. Bieri told me that in handling
many shells for measurements he felt that the white shell of *I. prolongata*
seemed more fragile and thinner than the coloured ones. Possibly this might
be a genetical race, although it cannot be an albino as some faint colour
patches are still remaining.

Again on Friday afternoon of November 5, and some subsequent days,
other swarms of janthinas were stranded on the same beach. These groups
consisted chiefly of *I. prolongata*, but included more *I. balteata* than in the
former case; *I. umbilicata* was quite insignificant again. Some *Porpita* and a
few *Veletta* and *Physalia*, a considerable number of *Glaucus* and some *Lepas
anatifera* were found associated with *Ianthina*. In these cases only three white
shells were included. They were from 8 mm high by 8 mm wide to 24 mm
high by 23 mm wide.
For these notes I wish to express my hearty thanks to Dr. R. Bieri and Mr. H. Tanase for their kindness in offering me the data.

REFERENCES


