

STUDIES ON DECAPOD CRUSTACEA FROM THE INDIAN RIVER REGION OF FLORIDA. VII. A FIELD CHARACTER FOR RAPID IDENTIFICATION OF THE SWIMMING CRABS *Callinectes ornatus* ORDWAY, 1863 AND *C. similis* WILLIAMS, 1966 (BRACHYURA: PORTUNIDAE) —

The portunid crabs *Callinectes ornatus* and *C. similis* are two very closely related species; *C. similis* was confused with *C. ornatus* for a number of years until separated by Williams (1966). Both species are common on seagrass beds in the Indian River lagoon along the central eastern Florida coast. Ecological studies in this area have shown that juveniles of both species are also seasonally abundant on lagoonal seagrass beds. Adult male crabs are easily separated to species on gonopod morphology, whereas females are less easily distinguished on gonopore configuration (Williams, 1974). However, because of great similarity in morphological features juveniles of the two species have been relatively difficult to identify as to species. Field data obtained from large numbers of live juvenile specimens, and smaller numbers of adults, in both species show that a distinct difference in color patterns between the two species occurs, especially in cheliped color, and color and pattern of the propodus and dactylus of the modified fifth pereopod (swimming leg). These color patterns are sufficiently distinctive to form a valuable field character allowing easy identification of live juvenile and adult specimens of *C. ornatus* and *C. similis*. They may also be used to separate recently preserved (up to six months in some cases) material of these two species. I provide color notes and photographs of these patterns to enable other investigators working with live or recently collected and preserved material to quickly distinguish between

C. ornatus and *C. similis*. Specimens used in this study are deposited in the Reference Collection of the Indian River Coastal Zone Study, Link Port, Ft. Pierce, Florida.

COLOR PATTERNS

Callinectes ornatus — Many of the Indian River specimens varied from the general color pattern described by Williams (1974) being either lighter or darker greenish brown, although similarities were evident primarily in overall hue of the dorsal carapace, and in cheliped color, as well as in hue and pattern on the walking legs. This species is uniformly olive brown or green, with distinct ivory white tips on all the anterolateral carapace spines. The overall impression usually is that of an olive brown crab (Plate 1 A). Ventrally, the meri of the walking legs and the sternal regions are ivory white and the distal segments of the pereopods are varying shades of greenish-brown (Plate 1 C). Viewed frontally, the chelipeds are ivory white, flushed dorsally with olive green; the finger tips are brown or tan (Plate 1 D). Most noticeable, however, are the dactyls of the fifth pereopods which are a uniform golden brown or light tan, and the propodus which appears distinctly banded with translucent yellow proximally, and a dark bluish-green distally (Plate 1 A, B).

Callinectes similis — The overall color of this species has been described accurately by Williams (1974) and the Indian River specimens agreed in most respects. The dull orange or orange-red spot on either side of the carapace posteriorly was not always present, or if present was not always distinct. Viewed dorsally, the overall impression one gets is that of an olive drab crab, more greenish than *C. ornatus*, and often irregularly speckled with light gray (Plate 1 E). The iridescent



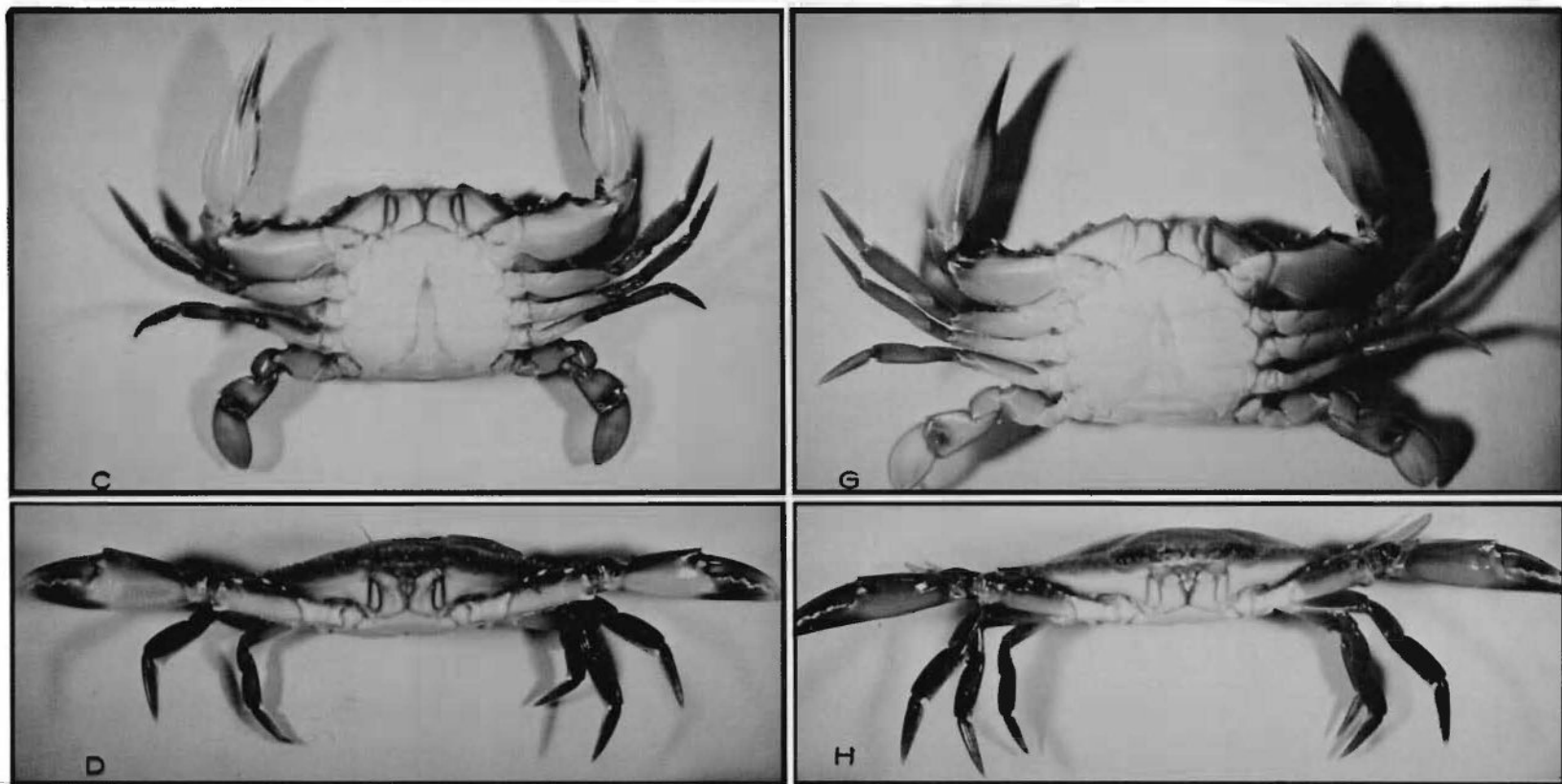


Plate 1 A-D. — *Callinectes ornatus* Ordway, 1863. Male, 58 mm cw, Indian River, St. Lucie Co., Ft. Pierce, Florida. SIFP 89:2920. A, Dorsal view; B, Right pereiopod 5, dorsal view; C, Ventral view; D, Frontal view.

Plate 1 E-H. — *Callinectes similis* Williams, 1966. Male, 59 mm cw, Indian River, St. Lucie Co., Ft. Pierce, Florida. SIFP 89:2921. E, Dorsal view; F, Left pereiopod 5, dorsal view; G, Ventral view; H, Frontal view.

patches described by Williams (1966, 1974) are also usually quite distinct. Ventrally, the sternal region is ivory white as in the above species. The proximal portion of the meri of the walking legs is also white, but the latter become diffused with blue distally, this color becoming more intense on the outer segments of the walking legs. The dactyls of the latter range from deep red to burnt orange, as in *C. ornatus*, but are also diffused with blue, which usually is not seen in *C. ornatus* (Plate 1 G). The common name of Lesser Blue Crab seems appropriate for this species when viewed frontally (Plate 1 H) and the interior surfaces of the chelipeds range from light to cerulean or china blue, becoming darker on the distal portions and blending into olive drab dorsally. The color may even be purple on the underside of the meral ridge, carpal joint, and the tips of the fixed and movable fingers in some specimens. Younger specimens are a solid, uninterrupted blue in this region with the anterior and distal part of the palm appearing as if dipped in blue ink; the fingers tend to be more whitish. The most noticeable differences between this species and *C. ornatus* are seen in the propodi of pereopod 5 which are translucent olive drab proximally and distally, banded with translucent blue medially; the joints are speckled with fuchsia, and the entire outer and inner surface of the dactyl is pale translucent blue (Plate 1 E, F).

Juveniles — Juvenile specimens (at least 25 mm carapace width cw, and larger) of both species may most easily be separated by the color of the propodus and dactyl of the swimmeret (pereopod 5). If the propodus is regularly and distinctly banded and the dactyl is a uniform tan or yellow color, the species is *C. ornatus*. If the propodus is faintly and more irregularly banded and the dactyl is

translucent blue, at times almost completely clear, the species is *C. similis*. Small juveniles (5-25 mm cw) of both *C. similis* and *C. ornatus*, when viewed frontally, have the interior surfaces of the chelipeds olive drab to tan, but those of *C. similis* appear slightly diffused with blue. I have found these differences to be consistent in ecological collections from the Indian River area and the juveniles of the two species may thus be easily sorted in the field saving much time spent in identification in the laboratory.

The only other species which occurs commonly in the Indian River area and coastal regions to the north is the commercial blue crab, *Callinectes sapidus* Rathbun, 1896. Juveniles and adults of this species are not nearly as abundant as the previous two species, a possible result of an intensive local commercial fishery for blue crabs. Adults of *C. sapidus*, as the common name reflects, are usually of a distinct bluish hue overall, and both adults and larger juveniles (30 mm cw and wider) may be quickly separated from the preceding two species by the absence or rudimentary development of the submesial frontal teeth. Juveniles of *C. sapidus* have no distinct banding on the propodi or dactyli of the swimmerets, and in adults these appendages are usually a distinct deep blue or blue-gray in color.

ACKNOWLEDGEMENTS

I thank Mrs. Linda J. (Becker) Girardin for drawing my attention to the characters discussed above, and for patiently sorting much of the ecological material on which this paper is based. This is Scientific Contribution No. 87 from the Smithsonian Institution-Harbor Branch Foundation, Inc., Scientific Consortium, Link Port, Ft. Pierce, Florida 33450.

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