

TRANS-278

MORSKIYE ZMEI
(Sea Snakes)

by

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PRIRCSA 3, 1963

Pp. 103 - 104

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Code 1

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U. S. NAVAL OCEANOGRAPHIC OFFICE
WASHINGTON, D. C. 20390

1965

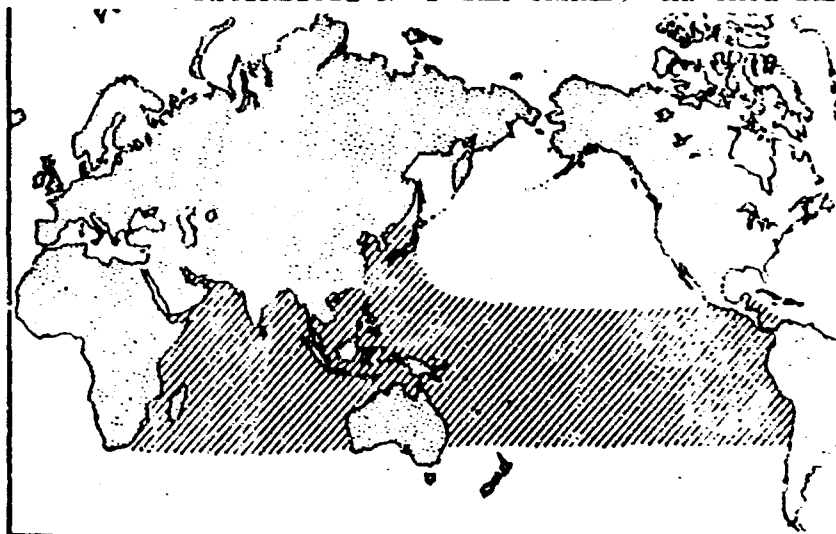
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When cruising the tropical seas of Asia, one is surprised to encounter a multitude of sea snakes which literally team in shallow areas. Because of their toxin and possibly because of our insufficient knowledge, people have made many fantastic stories in which the sea snakes are represented as huge supernatural beings, whereas in actuality, they usually do not exceed the length of 1 (one) meter. Only individual Hydrophis spiralis Shaw, H. cyanocinctus Daudin, and H. elegans Gray reach 2 (two) to 3 (three) meters in length.

Sea snakes represent a reptile family adapted to life in water. They breathe by lungs and therefore must at times come to the surface. They are distributed over the tropical and sub-tropical latitudes of the Indian and Pacific Oceans, from Africa and Madagascar on the west to the Pacific coast of America on the east, and from Australia on the south to Japan on the north (See the map). The sea snake (Pelamis platurus) which inhabits American waters has lately passed through the Panama Canal and entered the Caribbean Sea. Especially often one can observe sea snakes in the coastal waters of Indonesia, North Australia, the Philippines, South China, Indo-China and India. In Soviet waters they are extremely seldom found, only in Far Eastern Seas. Only twice in the southern PRIMOR'YE, in BUKHTA POS'YET, was a dead two-colored pelamid (snake) found. Although they are typical marine animals, yet individual species often come out on the coast, enter the lower reaches of rivers and are found in the lakes of several islands of the Philippines and the Solomon Archipelago.

At the present time, the family of sea snakes includes 50 (fifty) species, which belong to 2 (two) sub-families, which differ greatly as to their structure and way of life. The first family Laticaudinae is a more primitive group. The morphology and behavior of these animals is very similar to their predecessors, the land snakes. They often come out onto land where they lay eggs into warm sand. The form of their body has little changed. It is rounded, and only the tail is laterally compressed.

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If this sub-family has preserved many features that are typical of land snakes, the representatives of the other sub-family Hydrochiinae, living in the sea, have so changed their body structure that they are helpless on land. Their adaptation to life in water has led to the development of a tape-shaped (tapered) form. The ventral part of the body is laterally compressed, but the ventral scales (thoracic) have been considerably reduced and their sizes do not differ much from the adjacent scales. When taken aboard ship, they can, with difficulty move by lying on their sides. All the life cycles of these species occur in the sea. All the species of this sub-family belong to the viviparous group: their eggs contain rich nutrients and in several months begin to develop young. After 7 (seven) to 8 (eight) months, the young are born in water, usually in shallow coastal areas, bays, and gulfs; the reason for this is that these areas are inhabited by greater numbers of young fish and invertebrates which are used as food by the young sea snakes. In addition, in such areas, the sea currents are not so strong and they would not carry the young animals out into deeper areas.

All the sea snakes swim excellently, and they can dive and stay in water for hours without appearing on the surface (their nostrils are covered by special valves). A considerable part of their life is spent on the bottom of the sea, where they usually forage, keeping themselves to shallow water. At depths exceeding 100 (one hundred) to 200 (two hundred) meters they are almost never found. Even the early navigators had noticed that the appearance of sea snakes is a sign of the nearness of coast.

All the sea snakes are active poisonous carnivores (predators). They feed mainly on fish, but they eat also cephalopod mollusks and crustaceans. As in the case of land snakes, the maxillary bones of sea snakes are connected by ligaments which help them swallow large prey, even fishes, whose body is covered with sharp spines.

The sea snakes are characterized by brilliant colors. Usually on a yellow background stand out dark contours of the body, sometimes in the shape of black rings around the body (and as in the case of wasps and hornets). *Pelamis* can be recognized at once by the color: it has a black dorsal (back), and brilliant yellow or pink ventral part. Such a color in addition to its poison has lessened the number of their enemies to the minimum amount. They are eaten only by such carnivores as sharks, and sometimes by coastal eagles.

In some countries of Asia, the local population use the snakes as food and catch them by the thousands. The skin of the snake is used for the preparation of various leather goods. Sea snakes are very poisonous. Least poisonous are *Laticauda colubrina* L., yet their poison is twice stronger than that of cobra. For all that, the death cases involve only about 25 (twenty-five) per cent (Reid, H. A. 1956. Sea-snake bite research. Trans. Roy. Soc. Trop. Med. and Hyd. 50 (6)).

This is explained by the fact that, first, often the glands discharge the poison at a moment when their reserves are exhausted, and secondly, the poison teeth of sea snakes are small, and inflict insignificant wounds.

The poison of sea snakes is called neuro-toxin. It belongs to the group of toxins which affect mainly the nervous system and cause paralysis. Despite the carnivorous nature of sea snakes, and the presence of effective toxins, they (the sea snakes) usually do not attack men. Their poison serves only as a weapon in the hunt for fishes and for protection from enemies.

The biology of this most interesting family of reptiles deserves a further more complete investigation.

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