AD-A031 848 PROFESSIONAL STAFF ASSOCIATION OF LAC/USC MEDICAL CEN--ETC F/G 6/20
BEHAVIOR, ECOLOGY AND TOXICITY OF VENOMOUS MARINE FISHES.(U)
SEP 76 F E RUSSELL N00014-76-C-0254

UNCLASSIFIED NL

1 OF 1
AD
A031 848

END

DATE
FILMED
12-76

PSA
PROFESSIONAL STAFF ASSOCIATION Los Angeles County/ University of Southern California Medical Center

12 R.S.

AD A031848

TITLE: (6) Behavior, Ecology and Toxicity of Venomous Marine Fishes.

NAME OF AUTHOR: (10) Findlay E. Russell, M.D.

DATE OF ISSUE: July 1, 1976 - September 30, 1976

REPORT: Number IV (9) Rept. no. 4, 1 Jul-30 Sep 76,

CONTRACTOR: (1) Professional Staff Association of the Los Angeles County/University of Southern California Medical Center
(2) Los Angeles, California 90031

ONR CONTRACT: (15) N00014-76-C-0254 New (11) 30 Sep 76

TASK NUMBER: NR 104-793 (12) 2p.

PSA PROJECT: 9-169-0-0

DDC RECEIVED NOV 9 1976 D

ACCESSION for	
NTIS	White Section ☑
DDC	Buff Section ☐
UNANNOUNCED	☐
JUSTIFICATION	
BY	
DISTRIBUTION/AVAILABILITY CODES	
Dist.	AVAIL. and/or SPECIAL
A	

1739 NORTH GRIFFIN AVENUE • LOS ANGELES, CALIFORNIA 90031 • TELEPHONE (213) 223-4091

406790

Studies have continued on the chemistry and pharmacology of several venomous fishes, some of the problems relating to their habitats in relation to man, and more definitive investigations on the usual ultracellular structure of their venom glands. The present report treats of our most recent study on the venom gland of the stingray Dasytis sabina.

The fine structure of the putative venom-secreting cells within the tissue sheath investing the spine are unique in possessing large membrane-limited vacuoles (ca. 10 μ diameter), each largely filled (in thin sections) with 50,000 or more profiles of structures resembling cytoplasmic microtubules in size (ca. 200Å diameter) and appearance, in an electron-lucent matrix. It has previously been proposed that these vacuoles may include the secreted venom in a terminally differentiated cell.

These "microtubules" differ from the well-documented tubulin polymers (conventional microtubules) in four important respects: (1) they are sequestered from the general cytoplasm within a membrane; (2) they are curved within the spheroidal vacuole unlike conventional microtubules which are typically linear; (3) previous results suggest that, unlike many cytoplasmic microtubules, these structures are not depolymerized by vinblastin; and (4) the array includes many contiguous pairs and groups lacking the intervening space invariably present between juxtaposed cytoplasmic microtubules. Furthermore, the situation of these structures rules out the two principal functions ascribed to tubulin microtubules (translocation of membrane-limited and other particulates within the cytoplasm and provision of a cytoskeletal framework in elongated cells and cell processes). Electrophoretic studies are in progress designed to establish whether the microtubular structures are a new category of tubulin polymers or represent another protein that polymerizes in a structurally similar manner.