

# The Echinoderms Newsletter<sup>1</sup>

No. 6. April, 1975.

Prepared in the Department of Invertebrate Zoology (Echinoderms), National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560, U.S.A.

---

In the last newsletter we solicited your comments concerning the future of the newsletter, and asked you to suggest changes, additions, deletion etc. We found that those who responded to this request noted that the Newsletter was useful essentially in its present form, and should be continued. We were encouraged to issue it on a more regular basis.

We have not included a revised address list with this issue; we plan to do so during August or September, if all goes well. We now have an automatically printed labeling system, so that should save a considerable amount of time. We would like to propose at the Echinoderms Conference in Rovinj, Yugoslavia that somebody else take over production of the newsletter. One or two people have volunteered to assist with this, and we would like to encourage others to do so. Our other commitments invariably result in delays in preparation and printing, and somehow we never get around to issuing it on time. Certainly it is a matter to be discussed seriously in Yugoslavia.

David L. Pawson  
Maureen E. Downey

---

<sup>1</sup>The Echinoderms Newsletter is not intended to be part of the scientific literature, and should not be cited, abstracted, or reprinted as a published document.

## SUGGESTIONS AND REQUESTS

- A.N. BAKER would like to learn of any spare volumes of Mortensen's monograph of the echinoids.
- I. FERBER would like to have information on irregular echinoids (particularly Spatangoida) observed in situ: distribution, habitats, burrowing behavior, depth and rate of burrowing, sediment type, population density, size, data, etc. She would also like to have references to unpublished studies on biology and ecology of irregular sea urchins
- J.D. GREEN would like to hear from those who are working on holothurian systematics, reproductive biology and ultrastructure, especially other graduate students whose work has not yet appeared in the literature.
- H.K. HESS is looking for a slab with several specimens of Uintacrinus socialis (as complete as possible) and offers in exchange either slabs with Chariocrinus andreae or Pentacrinites dargnicsi (Middle Jurassic crinoids) or specimen (s) of Pelanodiadema oolithicum (complete, with lantern), a Middle Jurassic echinothurioid.
- F.H.C. HOTCHKISS would like to receive alcohol preserved starfish with more or fewer arms than normal, for dissection and study. He is also interested in obtaining series of the genus Astropecten as comparative material for a revision of the genus.
- A.J. JORDAN would like to examine scanning electron micrographs of echinoid plates, both surface and broken edge views.
- P.M. KIER would like to study Triassic echinoids from anywhere in the world.
- C. KROPACH requests information on Indian Ocean echinoderms, Acanthaster planci studies and status world-wide.
- J.S. LUCAS would like to know of any data on, or references to, hybridization in asteroids (apart from Gemmill, 1912).
- S.S. MACZYNSKA would like to have specimens of any species of holasteroid from the Cretaceous.
- K. MARKEL would like to study lanterns of echinothuriid echinoids.
- A. MIRONOV would like to study recent sea urchins of the suborder Meridosternina from anywhere in the world.
- C. OGURO would like to receive preserved specimens of asteroids (especially Luidiidae, Astropectinidae and Asteriidae) for comparative anatomy and systematic study. Exchange of specimens will be welcomed.
- C.R.C. PAUL would like to have records or specimens of Ordovician echinoderm fragments (particularly cup plates) from anywhere in the world, but especially South America, for work on Ordovician faunal provinces.
- D.L. PAWSON would like to contact anybody who has information on swimming activities of holothurians, beyond that which has appeared in the published literature.

F.W.E. ROWE would like to receive information and the loan of specimens of the asteroid genera Nardoa, Gomophia and Asterodiscus. He would also like to have records of Tasmanian echinoderms from other institutions. He has tentatively proposed that a symposium on echinoderms be held in Sydney, Australia around January-February 1977.

Y. SCHLESINGER would like to have information on dense populations of holothurians, their sexual behavior, spawning, larval development, as well as on occurrence of holothurians near ports and the effect of phosphates upon them.

P.M. SIEGEL would like to have references and/or reprints of papers covering any aspect of the biology and distribution of the holothurian Chiridota lacvis in particular, and chiridotid holothurians in general.

H.L. STRIMPLE would like answers to the following questions concerning ontogeny of modern comatulid crinoids:

1. In the "cystid" stage, do the orals remain open all of time or do they withdraw their podia or tentacles and close their orals on occasion?
2. What is the position of the anus and the rectum in the "cystid" stage.
3. Is there a hydropore penetrating the posterior oral and connected to a stone canal in the "cystid" stage? He thinks not, but needs to ask to be certain.

TASMANIAN MUSEUM, G.P.O. Box 1164M, Hobart 7001, Tasmania, Australia, would like to purchase a copy of H.L. Clark's (1946) paper "The echinoderm fauna of Australia". Please contact Miss Alison Green, Curator of Invertebrate Zoology at the Tasmanian Museum if you have a spare copy of the paper.

## Current Research Projects

- ATWOOD - Ultrastructural investigation of spermatogenesis and spermatozoa morphology in holothurians.
- AUNG - Growth and delay of metamorphosis of the larvae of Arachnoides placenta.
- BAKER - Revision of Australasian euryalid ophiuroids; echinoderms of Kermadec and Niue Islands.
- BIRKELAND - Ecology of Puget Sound asteroids; predation on the holothurian Cucumaria lubrica by 7 species of asteroids and stabilization of the system by the top predator Solaster dawsoni; distribution and changes in abundance with time of echinoderms on the Caribbean and Pacific coasts of Panama.
- BLAKE, D.B. - Relationships among seastar families.
- BOCKELIE - Ontogenetic and variability studies and morphology of cystoids.
- BRANSTRATOR - Systematics and functional anatomy of Ordovician asteroids; taxonomy of Middle Ordovician asteroids from Utah, Nevada, and California; early post-larval development and ecology of modern asteroids; recruitment in rocky shore littoral asteroids.
- BRITO - Albian echinoids of Brazil; Miocene echinoids of North Brazil.
- BROWER - Silurian crinoids from Scotland; the Carboniferous crinoid genus Woodocrinus; Middle Ordovician crinoids from the Twin Cities area, Minn.
- BRUN - Predation by starfish (Asterias) on a scallop bed; taxonomy of genus Henricia (North Atlantic).
- BRUNEL - Distribution of invertebrate benthic communities and major taxa in the Lower St. Lawrence Estuary as related to depth, temperature stratification and sediments.
- CAMPBELL - Behaviour and ecology of tropical asteroids; coordination of echinoid test appendages.
- CARNEY - Animal-sediment relationships: holothurian feeding in the deep sea; holothurian fauna of the Eastern Pacific.
- CASO-MUNOZ - Continuing work on a monograph of the echinoderms of Mexico; morphology and ecology of Tripneustes; internal morphology of Platasterias latiradiata; description of a new species of Mithrodia, and work on the genus Mithrodia.
- CHERBONNIER - Echinoderm fauna of Madagascar; echinoderms of Kergulen; echinoderm fauna of Europe; echinoderms of Gulf of Guinea.
- CLARK, A.M. - Echinoderm fauna of southern Africa; Australian crinoids.
- COBB - Neurotransmission in invertebrates.
- CRAPP - Age determination in the sea urchin Paracentrotus lividus.
- DAYTON - Nearshore community ecology.

- DERSTLER - Camptostroma; Stylophora carpoids; Cambrian carpoids
- DEVANEY - Shallow water ophiuroids of the Indian Ocean - systematics, zoogeography.
- DUBOIS - Variations of the echinoderm fauna on a coral reef with an adjacent non-coral outcrop.
- EBERT - Investigation of techniques to estimate growth and mortality rates; patterns of growth and mortality rates in echinoderms.
- ELLINGTON - Carbohydrate metabolism in the pyloric caeca of the seastar Asterias forbesi; aspects of the physiological ecology of Thyone briareus, with particular emphasis on mechanisms involved in facultative anaerobiosis.
- ENGEL - Fossil echinoids of Maastricht.
- ERNEST - Natural history of Lytechinus variegatus in the Tarpon Springs area with special regard to thermal pollution; echinoderms of Tampa Bay, Florida.
- ERNST - Phylogeny, biostratigraphy, ecology, ecomorphology and systematics of Cretaceous and Tertiary echinoids of northwest and western Europe; actual paleontology of Mediterranean echinoids.
- FENAUX - Biology of echinoderms.
- FERBER - Biology and ecology of Spatangoida in the Red Sea.
- FERGUSON - Starfish nutrition.
- FISHELSON - Changes in echino-fauna in polluted and non-polluted subtidal of northern Red Sea.
- FOSTER - Australian and New Zealand Tertiary holasterids.
- FRANZEN - Crinoid holdfasts; ecology of Silurian crinoids from Gotland, Sweden.
- FREST - Revision of the Caryocrinitidae; description of several new inadunate and camerate crinoids from the Middle and Upper Silurian, North American Continental Interior; Cyclocystoides from the Upper Silurian of Indiana; Stephanocrinus and related coronate crinoids (with C.R.C. Paul); phylogeny of the Calceocrinidae.
- GIESE - Physiology of the echinoid and asteroid body wall.
- GOLDBERG - Biologically active compounds from sea urchins.
- GREEN - Seasonal reproduction in Leptosynapta tenuis.
- HAGSTROM - Development of sea urchin larvae.
- HAUGH - Nervous and muscle systems in Upper Paleozoic Camerate crinoids.

- HAWKINS - Feeding energetics and formulation of an energy budget for the tropical sea urchin Diadema antillarum.
- HENDERSON - Australasian Cenozoic Echinoidea.
- HESS - Ophiuroid ossicles from Middle and Upper Oxfordian of Jura Mountains.
- HIMMELMAN - Reproductive periodicity of Strongylocentrotus drobachiensis and the possible importance of phytoplankton as a spawning trigger.
- HOSHIAI - Marine benthos ecology in the coastal area of Antarctica.
- HOSKIN - Trehalose in snail serum; EM of host parasite interface of snail and larval trematode.
- HOTCHKISS - Paleozoic ophiuroid studies; working up the International Indian Ocean Expedition starfish; a collection of starfish from the Gulf of Panama; ecology of starfish and brittlestars at Carrie Bow Cay, British Honduras; asymmetry in starfish and homology of echinoderm arms.
- IRIMURA - Ophiuroid fauna in Sagami Bay.
- JEFFRIES - Echinoderm-chordate connections
- JORDAN - Echinoid skeletal morphology.
- KANATANI - Mechanism of oocyte maturation and spawning in echinoderms.
- KAZUHIRO - Ecological study on the planktonic larvae and settled juveniles of the sea urchins Strongylocentrotus intermedius and S. nudus.
- KELLER - Continuing studies of Jamaican echinoids; population dynamics.
- KIER - Triassic echinoids; a study of the echinoids off British Honduras; a revision of Lambert and Thiery.
- KOLATA - Functional morphology of cyclocystoids; study of crinoids from the Upper Ordovician Bighorn Formation of Wyoming.
- KOMATSU - Reproduction and development of seastars; analysis of wrinkled blastula formation in Asteroidea.
- KRISHNAN - Reproductive and nutritional physiology of Cucumaria frondosa.
- KROPACH - Acanthaster planci in the Gulf of Elat.
- LANE - The anal sac of Aesiocrinus magnificus; the feeding biology of Paleozoic crinoids and modern basketstars (with Meyer).
- LAWRENCE - Biology of Luidia.
- LEWIS - Behaviour of Echinus esculentus following scaling or extirpation of the madreporite.

- LOBATSCHEVA - Early Cretaceous echinoids of Middle Asia; systematics and phylogeny of spatangids and their stratigraphic significance.
- LUCAS - Factors influencing the early developmental stages of Acanthaster planci.
- LÜTZEN - Studies on associates (mainly gastropods) of echinoderms.
- MACZYNSKA - Cretaceous echinoids of Poland - Holasteroidea Upper Cretaceous.
- MAJOR - Osmotic stress in Cucumaria frondosa.
- MARCUS - Genetic divergence of several populations of Arbacia punctulata.
- MARKEL - Echinoid teeth and skeletons.
- MARSH - Taxonomy of some Indo-Pacific Asteroidea; Acanthaster planci in Western Australian Asteroidea.
- MACURDA - Zoogeography of Caribbean crinoids (with D. Meyer); evolution and distribution of the blastoid Pentremites (with A.L. Horowitz).
- MEYER - Zoogeography and morphology of Caribbean crinoids (with Macurda); feeding biology of some Paleozoic crinoids and recent basketstars (with Lane); biological and physical monitoring, Atlantic and Pacific Panama.
- MILEIKOVSKY - Formulation of some ecological rules and regulations describing the distribution of the pelagic larvae of marine bottom invertebrates in the plankton of the World Ocean in connection with the distributional patterns of parental benthic species and communities.
- MINKOFF - Crystal growth.
- MIRONOV - Morphology, phylogeny, biology and distribution of the recent sea urchins of the suborder Meriodosternina; Distribution of the deep-sea urchins.
- MITROVIC - Mesozoic Echinoidea.
- MUSCAT - Population dynamics of ophiuroids.
- NATAF - Systematics of asteroids; tegument of asteroids.
- NICHOLS - Hydrodynamics of the water-vascular system.
- NIESEN - Population biology of brooding asteroids; thermal enhancement of digestion intertidal echinoderms.
- O'BRIEN - Feeding and reproductive behavior of Leptasterias littoralis and Leptasterias tenra in New England waters.
- O'CONNOR - Synecological survey of echinoderms in Galway Bay with in situ behavioural studies on ophiuroid communities.
- OGURO - Development and systematics of asteroids.
- PABIAN - Missourian and Virgilian (Pennsylvanian) crinoids.

- PAINE - Spatial structure of intertidal communities; the structure of food webs; the ecological role of Pisaster ochraceus.
- PATENT - Histology and ultrastructure of ophiuroid gonads.
- PAUL - British and Scandinavian Ordovician echinoderms; revision of Sphaerocrinoids.
- PEARSE - Kelp forest ecology; functional anatomy of the echinoid aboral ring complex.
- PENTREATH - Neurotransmission in invertebrates.
- PETERSEN - Physiological and ecological aspects of gas exchange in echinoderms; effect of temperature and/or salinity on the development and survival of echinoids.
- PROKOP - Family Synbathocrinidae from the Devonian of Bohemia; the genus Ichthyocrinus in the Lower Devonian of Bohemia.
- REGIS - Study of the test of echinoids of the Mediterranean.
- ROBISON - Middle Cambrian biostratigraphy of the Breat Basin.
- ROWE - Revision of Nardoia, Gomophia, Asterodiscus; revision of Hacelia (with Loiset Marsh); Australian holothurians; Tasmanian echinoderms.
- SALAZAR - Phototaxis in sea urchins; byssal thread production as a toxicity test; environmental impact of dredge spoils.
- SALVAT - Echinoderms (other than holothurians and crinoids) recently collected by a Polish expedition in South Atlantic waters; induction of spawning and larval development of Patiria stellifer; population and reproductive biology of a brooding starfish, Anasterias minuta.
- SASTRY - Systematics, taxonomy, zoogeography of Echinoidea.
- SATO - Mechanism of cell division; crystallization, stabilization and characterization of mitotic spindle protein; primitive motile system and the role of microfilaments.
- SCHELTEMA - Larval dispersal among echinoderms.
- SCURRY - Biometrical analysis of the Mesozoic cassiduloid Nucleolites.
- SERAFY - Description of the first extant species of Pisolampas; zoogeography of North Atlantic echinoids; echinoids of the northeastern United States shelf; a new species of Caenopedina from the South Atlantic; benthic ecology of invertebrate communities in Long Island Sound.
- SEVASTOPULO - Irish Carboniferous crinoids; early ontogeny of blastoids.
- SHEPHERD - Effect of echinoids on algal populations.
- SHIRAI - Mechanism of oocyte maturation and spawning in echinoderms.



- SHLESINGER - Ecology and biology of two species of Holothurians, Actinopyga sp. and Ophcodesoma sp., and the influence of chemical pollution on their distribution.
- SIBUET - Abyssal echinoderms collected by the Jean Charcot Expedition.
- SIEGEL - Ecology, distribution and regeneration of the apodous holothurian Chiridota laevis.
- SLOAN - Predatory behaviour of the sunstar Crossaster.
- SOLOVJEV - Morphology, systematics, and evolution of Upper Cretaceous and early Paleogene spatangoid echinoids.
- SPRINKLE - Cambrian echinoderms of the Rocky Mountains; late Cambrian echinoderms from the Davis Formation of SE Missouri; coordinator of major new project on the echinoderm faunas of the Bromide Formation (Middle Ordovician) of S. Oklahoma.
- STEELE - Ecology of shallow water organisms.
- STRATHMANN - Limitations on performance of ciliary clearance mechanisms of echinoderm larvae and similar suspension feeders; advantages of spreading offspring; limitations on branching of ambulacra.
- STOKES - Jurassic echinoids from Western Thailand; modern echinoids from the Gulf of Thailand.
- STUKALINA - Taxonomy and phylogeny of Paleozoic crinoids; systematics of ancient echinoderms.
- SUTTON - Benthic ophiuroid assemblages in Monterey Bay, California; collation and organization of invertebrate reference collection for San Francisco Bay Delta Region.
- TAKAHASHI - Echinoid spine mechanism; connective tissue catch in echinoderms.
- TERMIER - Precambrian-Cambrian fossils.
- THOMAS - Ophiuroids of the continental slope; ophiuroids of the genus Ophioplocus; Western Atlantic ophiurids.
- TOMMASI - Echinoderms from southern Brazil; ophiuroids from sub-Antarctic and Antarctic regions.
- TORTONESE - Distribution and biology of the Mediterranean Echinoderms (except holothurians).
- TYLER - Ecology and reproductive biology of Ophiura in Bristol Channel.
- UBAGHS - Carpoid echinoderms from Bohemia.
- VADAR - Development of sea urchin larvae.
- WALKER - Morphology, histology, and ultrastructure of the reproductive systems of 5 species of asteroids.

- WARNER - Feeding in brittlestars, genus *Ophiothrix*.
- WEBER, J. - Temperature dependence of  $^{180}$  incorporation into skeletal calcites deposited by echinoderms; replication of skeletal microstructures of echinoderms into polymer, metal, and ceramic biomaterials for prosthetic applications.
- WEBER, W. - Color change of *Centrostephanus longispinus*; electron microscopic investigations on the basiepithelial nerve net of *Centrostephanus longispinus*.
- WEBSTER - Permian crinoids from Callythera Springs, Australia; Late Pennsylvanian crinoids from Arrow Canyon, Nevada.
- WILKIE - Mechanism of autotomy of ophiuroid arms.
- WILLIS - Population biology of *Paracentrotus lividus* with regard to its usefulness as a base line indicator of pollution and with special reference to a local commercial fishery.
- YAMAGUCHI - Early life histories of coral reef asteroids.

Theses dealing with echinoderms

Compiled by J.M. Lawrence

M.A. theses

- Adair, W.S. 1972. Effects of temperature on fertilization in the purple sea urchin Strongylocentrotus purpuratus (Stimpson). California State University, San Diego.
- Allison, C. 1963. Revision of the echinoderm family Mellitidae. Univ. of California, Berkeley.
- Atwood, D.G. 1972. Histological and physiological analysis of neurosecretory substances in Spinulosida and Platyasterida (Echinodermata: Asteroidea). Univ. of South Florida.
- Baker, S.L. 1973. Growth of the red sea urchin Strongylocentrotus franciscanus (Agassiz) in two natural habitats. California State Univ., San Diego.
- Davis, H.S. 1971. The gonad wall of Echinodermata; a comparative study based on electron microscopy. Univ. of California, San Diego.
- Dehn, P.F. 1974. A preliminary study of the rhythmicity and feeding behavior of the sea star Luidia clathrata Say (Echinodermata: Platyasteroidea) from Tampa Bay and Sea Horse Reef, Cedar Key, Florida. DePauw Univ.
- Doran, G. 1968. Ecology of Echinometra lucunter (Linnaeus). McGill Univ.
- Ellington, W.R. 1973. Seasonal temperature characteristics of cytoplasmic malic dehydrogenase in the gut of Mellita quinquiesperforata (Echinoidea: Clypeasteroidea) Univ. South Florida.
- Everingham, J.W. 1961. The intraovarian embryology of Leptosynapta clarki Univ. of Washington.
- Ferber, I. 1973. Contributions to the biology of Lovenia elongata (Gray) Echinodea: Spatangoida) in the Gulf of Elat, Red Sea. The Hebrew Univ. of Jerusalem.
- Himmelman, J.H. 1969. Some aspects of the ecology of Strongylocentrotus droebachiensis in eastern Newfoundland. Memorial Univ. of Newfoundland.
- Imlay, M.J. 1964. Microscopic observations of gamete shedding substance in starfish radial nerve. The American Univ.
- Irvine, G.V. 1973. The effect of selective feeding by two species of sea urchins on the structuring of algal communities. Univ. of Washington.
- Jones, S.A. 1960. The early embryology of Psolus chitonoides Clark. Univ. of Washington.
- Lees, D.C. 1970. The relationship between movement and available food in the sea urchins Strongylocentrotus franciscanus and Strongylocentrotus purpuratus. California State Univ., San Diego.

- Lowe, E.F. 1974. Absorption efficiencies, feeding rates and food preferences of Lytechinus variegatus (Echinodermata: Echinoidea) for various marine plants. Univ. of South Florida.
- Mitchell, B.P. 1972. Rediscovery of Gregory's diverticulum in the scutellid sand dollars. Western Washington State College.
- Niessen, T.M. 1968. Population structure, dynamics, breeding cycles and ecotypic variation in San Diego populations of the sand dollar Dendraster excentricus (Eschscholtz). Calif. State Univ., San Diego.
- Polls, I. 1970. Behavioral aspects of righting in the asteroid echinoderms Henricia leviuscula (Stimpson) and Leptasterias aequalis (Stimpson) Oregon State Univ.
- Prim, P.P. 1973. Utilization of marine plants and their constituents by enteric bacteria of echinoids (Echinodermata). Univ. of South Florida.
- Stancyk, S.E. 1970. Studies on the biology and ecology of ophiuroids at Cedar Key, Florida. Univ. of Florida.
- Ulbricht, R.J. 1970. Oxygen consumption of three species of sea urchins at different temperatures. Oregon State
- Zinn, D.J. 1937. The growth and development of starfish in Narragansett Bay in relation to temperature and food supply. Rhode Island State College.
- Ph.D. dissertations
- Alexander, R.R. 1972. Autoecological studies of the brachiopod Rafinesquina (Upper Ordovician), the bivalve Anodora (Pliocene), and the echinoid Dendraster (Pliocene). Indiana Univ.
- Bell, B. McC. 1972. A study of North American Edrioasteroidea. Univ. Cincinnati.
- Boylan, E.S. 1972. Aspects of gene activity during oogenesis in the amphibian Xenopus laevis, and the starfish, Asterias forbesi. Cornell Univ.
- Cayer, M.L. 1973. Ciliogenesis in sea urchin embryos. Univ. of Miami.
- Chang, C.W.J. 1964. Structure and function of spinochrome H. Univ. of Hawaii.
- Chartock, M.A. 1972. The role of detritus in a tropical marine ecosystem: niche separation in congeneric ophiuroids, food partitioning in cryptic invertebrates, and herbivore detritus production at Eniwetok, Marshall Islands, Univ. Southern California.
- Chatlynn, L.G. 1972. An ultra-structural study of oogenesis in the sea urchin Strongylocentrotus purpuratus. Oregon State Univ.
- Conway, C.M. 1972. Characterization of the heavy bodies of the sea urchin egg. Univ. of Miami.

Ph.D. dissertations

- Craig, III., S.P. 1970. Mitochondria and the development of sea urchin embryos. California Institute of Technology.
- Dayton, III, P.K. 1971. Competition, predation, and community structure: the allocation and subsequent utilization of space in a rocky intertidal community. Univ. of Washington. (includes Pisaster, Pycnopodia and Strongylocentrotus).
- Dearborn, J.H. 1965. Ecological and faunistic investigations of the marine benthos at McMurdo Sound, Antarctica. Stanford Univ. (includes crinoids, asteroids, ophiuroids and echinoids).
- Dixit, D.B. 1973. Uptake of amino acids and development in the sea urchin. Univ. of California, Irvine.
- Eastwood, J.L.J. 1972. The development of photic behavior of Lytechinus variegatus echinoplutei larvae. Lchigh Univ.
- Ellis, Jr., C.H. 1966. Genetic control of sea urchin development: a chromatographic analysis of protein synthesis in the Arbacia punctulata embryo. The Johns Hopkins Univ.
- Gentleman, S.B. 1971. Respiratory studies of a sea cucumber. Duke Univ.
- Halpern, J.A. 1970. A monographic revision of the goniasterid sea stars of North Atlantic. Univ. of Miami.
- Hathaway, R.R. 1961. Studies on interactions between spermatozoa and eggs of Arbacia punctulata and other echinoderms. Florida State Univ.
- Hendler, G.L. 1973. Northwest Atlantic amphiuroid brittlestars, Amphioplus abditus (Verrill), Amphioplus macilentus (Verrill) and Amphioplus sepultus n. sp. (Ophiuroidea: Echinodermata): systematics, zoogeography, annual periodicities, and larval adaptations. Univ. of Connecticut.
- Hinegardner, R. T. 1961. Studies on the sea urchin egg nucleus: its isolation, structure, physical properties and DNA content. Univ. of Hawaii.
- Jordan, A.J. 1972. On the ecology and behavior of Cucumaria frondosa (Echinodermata: Holothuroidea) at Lamoine Beach, Maine. Univ. of Maine.
- Kelso, D.P. 1970. A comparative morphological and ecological study of two species of the sea urchin Echinometra in Hawaii. Univ. of Hawaii.
- Landenberger, D.E. 1967. A study of predation and predatory behavior in the Pacific starfish, Pisaster. Univ. of California, Santa Barbara.
- McLean, R.F. 1962. Mechanical and biological erosion of beachrock in Barbados, West Indies. McGill Univ. (includes Echinometra)
- Medes, G. 1917. A study of the causes and the extent of variations in the larvae of Arbacia punctulata. Bryn Mawr.

Ph.D. dissertations

- Mangan, J. 1966. Early sea urchin development: constant and changing features of ultrastructure and protein synthesis. Brown Univ.
- Menge, B.A. 1970. The population ecology and community role of the predacious asteroid Leptasterias hexactis (Stimpson) Univ. of Washington.
- Meyer, D.L. 1971. Functional morphology and autecology of shallow-water unstaked crinoids (Echinodermata) of the Caribbean Sea. Yale Univ.
- Mintz, L.W. 1966. The origin, phylogeny, descendants of the echinoid family Disasteridae A. Gras 1848. Univ. Calif., Berkeley.
- Nace, III., A.G. 1971. The digestive system and lantern complex of Thyonella gemmata (Pourtales): structure and regeneration. Florida State Univ.
- Nichols, F.H. 1972. Carbon and energy flow through populations of a numerically dominant macroinvertebrate, Pectinaria californiensis Hartman, in Puget Sound, Washington, with reference to larger, rarer, and coexisting species. Univ. of Washington. (includes Brisaster and Molpadia)
- O'Brien, F.X. 1972. Some aspects of the biology of a brooding starfish, Leptasterias littoralis (Stimpson) 1853. Univ. of New Hampshire.
- Onuf, C.P. 1972. Aspects of the population biology of the intertidal snail Olivella biplicata: distribution, nutrition, and effects of natural enemies. Univ. of California, Santa Barbara. (includes Astropecten)
- Piatigorsky, J.P. 1967. Studies on nucleosides and amino acid uptake and on RNA and protein synthesis by growing oocytes, unfertilized and fertilized sea urchin eggs. California Institute of Technology.
- Percy, J.A. 1971. Thermal acclimatization and acclimation in the echinoid Strongylocentrotus droebachiensis (O.F. Müller, 1776). Memorial Univ. of Newfoundland.
- Singletary, R.L. 1971. The biology and ecology of Amphioplus confortodes Ophionephthys limicola, and Micropholis gracillima (Ophiuroidea: Amphiuridae). Univ. of Miami.
- Smith, Jr., G.N. 1971. Regeneration in the apodous holothurian Leptosynapta crassipatina. Florida State Univ.
- Smith, R.H. 1971. Reproductive biology of a brooding sea star Leptasterias pusilla (Fisher) in the Monterey Bay region. Stanford Univ.
- Stevens, M.E. 1972. Protein synthesis and respiration during maturation and fertilization in starfish oocytes. Stanford Univ.
- Stewart, W.C. 1970. A study of the nature of the attractant emitted by asteroid hosts of the commensal polychaete, Ophiodromus pugettensis. Univ. of California, Santa Barbara
- Strathman, R.R. 1970. The behavior of planktotrophic echinoderm larvae: mechanisms, regulation, and rate of suspension feeding. Univ. of Washington.

Ph.D. dissertations

Vadas, R.L. 1968. The ecology of Agarum and the kelp bed community. Univ. of Washington. (includes Strongylocentrotus spp.)

Recent Publications and Papers in Press

This list is based upon Newsletter replies plus reprints received. It includes papers published in 1973 or later. Please note that many of the papers listed below as "in press" will already have been published.

- ABBOTT, D.P., J.C. OGDEN and I.A. ABBOTT (EDS.), 1974. Studies on the activity pattern, behavior, and food of the echinoid Echinometra lucunter (Linnaeus) on beachrock and algal reefs at St. Croix, U.S. Virgin Islands. West Indies Laboratory, Fairleigh Dickinson University, St. Croix, Special Publication No. 4: 1-111.
- ARNAUD, P.M., in press. Contribution a la Bionomie benthique antarctique et subantarctique.
- ATWOOD, D.G., 1973. Ultrastructure of the gonadal wall of the sea cucumber, Leptosynapta clarki (Echinodermata: holothuroidea). Z. Zellforsch 141: 319-330.
- \_\_\_\_\_, in press. Fine structure of the spermatozoan of the sea cucumber Leptosynapta clarki (Echinodermata: holothuroidea). Ibid.
- \_\_\_\_\_, and F.S. CHIA, 1974. Fine structure of an unusual spermatozoan of a brooding sea cucumber, Cucumaria lubrica. Canadian J. Zool.
- BAKER, A.N., 1974. New species of brittle-stars from New Zealand (Echinodermata: Ophiuroidea). Records Dominion Mus. 8 (15): 247-266.
- BAKUS, G.J., 1973. The biology and ecology of tropical holothurians. Pp. 325-367 in Biology and geology of coral reefs Vol. II: Biology 1, Academic Press, New York.
- \_\_\_\_\_, and G. GREEN, 1974. Toxicity in sponges and holothurians: A geographic pattern. Science 185: 951-953.
- BARHAM, E.G., R.W. GOWDY and F.H. WOLFSON, 1973. Acanthaster (Echinodermata, Asteroidea) in the Gulf of California. Fishery Bull. 71 (4): 927-942.
- BELMAN, B. and A.C. GEISE, in press. Oxygen consumption of an asteroid and an echinoid from the Antarctic.
- BERNASCONI, I. and M.M. D'AGOSTINO, 1973. Nueva especie de Ofiuroidea Antartico, Ophiurolepis granulifera sp. nov. (Ophiuroidea, Ophiuridae). Physis 32 (85): 263-266.
- \_\_\_\_\_, and \_\_\_\_\_, 1974. Ampliacion del area de distribucion de Amphiura crassipes Ljungman, 1866 (Ophiuroidea, Amphiuridae). Ibid. 33 (86): 135-138.



- \_\_\_\_\_ and \_\_\_\_\_, 1974. Equinodermos Antarticos III. Ofiuroides. 1. Ofiuroides del extremo norte de la Peninsula Antartica. Rev. Museo Argentino Ciencias Naturales "Bernadino Rivadavia" 4 (2): 81-133.
- BIRKELAND, C.E., 1974. Interactions between a sea pen and seven of its predators. Ecological Monographs 44: 211-232.
- \_\_\_\_\_, D.L. MEYER, J.P. STAMES and C.L. BUFORD, in press. The subtidal communities of Malpelo. Smithsonian Contrib. Zool.
- BLAKE, D.B., 1974. A new Miocene species of the Recent Australian ophiuroid genus Ophiocrossota.
- BOCKELIE, J.F., 1973. The presence of Prunocystites (Cystoidea) in stage 9e of Ringerike, Norway. Norsk Geologisk Tidsskrift 53.
- \_\_\_\_\_, in press. Ordovician cystoids from the Trondheim region. Ibid.
- BRANSTRATOR, J.W., 1974. Podial efficiency of some Ordovician asteroids (Echinodermata) from North America. Bulletins of American Paleontology.
- BRITO, I.M., in press. Albian echinoids of Brazil. Anals da Academia Brasileira de Ciencias.
- \_\_\_\_\_, in press. Miocene echinoids of North Brazil. Ibid.
- BROWER, J.C., 1973. Crinoids from the Girardeau Limestone (Ordovician). Paleont. Americana. 7 (46): 263-499.
- \_\_\_\_\_, 1974. Upper Ordovician xenocrinoids (Crinoidea: Camerata) from Scotland. Univ. Kansas Paleont. Contrib. 67: 1-25.
- \_\_\_\_\_, in press. Ontogeny of camerate crinoids. Ibid.
- \_\_\_\_\_, in press. Ontogeny of camerate crinoids, a summary. Treatise on Invertebrate Paleontology (R.C. Moore, ed.), University of Kansas Press, Lawrence.
- \_\_\_\_\_ and J. VEINUS, in press. Middle Ordovician crinoids from Virginia and Tennessee. Bull. Amer. Paleont.
- \_\_\_\_\_ and \_\_\_\_\_, in press. The statistical zap versus the shotgun approach. Jour. Int. Assoc. Math. Geol. 6.
- \_\_\_\_\_ and \_\_\_\_\_, in press. The ontogeny of Hybocrinus punctatus (Miller and Gurley), an Ordovician crinoid. Ibid., 7
- BRUN, E., in press. Taxonomy of Henricia oculata (Pennant, 1777) (Echinodermata: Echinasteridae). Jl. Linn. Soc. (Zool.).
- CAMP, D.K., S.F. COBB and J.F. VAN BREEDVELD, 1973. Overgrazing of seagrasses by a regular urchin, Lytechinus variegatus. Bioscience 23 (1): 37-38.

- CAMPBELL, AC., 1973. Observations on the activity of echinoid pedicellariae. I. Stem responses and their significance. Mar. Behav. Physiol. 2: 33-61.
- \_\_\_\_\_, J.K.G. DART, S.M. HEAD and R.F.G. ORMOND, 1973. The feeding activity of Echinostrephus molaris (de Blainville) in the central Red Sea. Mar. Behav. Physiol. 2: 155-169.
- CASTRO, P., in press. New host and notes on the behavior of Tuleariocaris holthuisi, a symbiont of sea urchins. Crustaceana.
- CHERBONNIER, G., 1974. Invertebres marine des XIIeme et XVeme Expeditions Antarctiques Francaises en Terre Adelie. 15. Holothurides. Tethys 5 (4): 601-610.
- \_\_\_\_\_, 1974. Podosphaeraster crassus nov. sp., espece actuelle d'Asterie de la famille jurassique des Sphaerasteridae. C.R. Acad. Sc. Paris 278: 1731-1733.
- \_\_\_\_\_ and G. NATAF, 1973. Astropecten des cotes occidentales d'Afrique. Bull. Mus. d'Hist. nat. 181: 1233-1301.
- \_\_\_\_\_ and J. ROMAN, 1974. Une grande Asterie spherique (fam. Sphaerasteridae) de Cretace inferieur des Hautes-Alpes. C.R. somm. S.G.F. 1974.
- CHIA, F.-S., 1973. Sand dollar: a weight belt for the juvenile. Science 181: 73-74.
- CLARK, A.M., 1974. Notes on some echinoderms from Southern Africa. Bull. Brit. Mus. (Nat. Hist.) 26 (6): 423-487.
- CORNET, D. and M. JANGOUX, 1974. Arylsulphatases and B-glucuronidase in the digestive system of some echinoderms. Comp. Biochem. Physiol. 74B: 45-52.
- DAMBACH, M. and W. WEBER, in press. Inhibition of pigment and cell movement by cytochalasin B in the chromatophores of the sea urchin Centrostephanus longispinus. Comp. Biochem. Physiol.
- DARTNALL, A.J., 1974. Littoral biogeography. Pp. 171-194 in: Biogeography and ecology in Tasmania (W.D. Williams, ed.). W. Junk, The Hague.
- DAYTON, P.K., G.A. ROBILLIARD, R.T. PAINE, and L.B. DAYTON, 1974. Biological accommodation in the benthic community at McMurdo Sound, Antarctica. Ecological Monographs 44 (1): 105-128.
- DEVANEY, D.M., 1973. Zoogeography and faunal composition of south-eastern Polynesian asterozoan echinoderms. Pp. 357-366 in Oceanography of the South Pacific. New Zealand National Committee of UNESCO, Wellington.

- \_\_\_\_\_, 1974. Shallow-water echinoderms from British Honduras with a description of a new species of Ophiocoma (Ophiuroidea). Bull. Mar. Sci. 24 (1): 122-164.
- \_\_\_\_\_, 1974. Shallow-water asterozoans of southeastern Polynesia II. Ophiuroidea. Micronesica 10 (1): 105-204.
- \_\_\_\_\_ and J.E. RANDALL, 1973. Investigations of Acanthaster planci in southeastern Polynesia during 1970-1971. Atoll Research Bull. 169: 1-23.
- DOLLFUS, R.P. and J. ROMAN, in press. Echinoidea. In: Mission Robert Ph. Dollfus en Egypte. Resultats Scientifiques. Editions du C.N.R.S.
- EBERT, T.A., in press. Growth and mortality of post-larval echinoids. Amer. Zoologist.
- ELLINGTON, W.R. and J.M. LAWRENCE, 1974. Seasonal temperature characteristics of supernatant malic dehydrogenase of adult and juvenile Mellita quinquiesperforata (Echinodermata: Echinoidea). Comp. Biochem. Physiol. 48 (B): 107-115.
- \_\_\_\_\_ and \_\_\_\_\_, 1974. Coelomic fluid volume regulation and isosmotic intracellular regulation by Luidia clathrata (Echinodermata: Asteroidea) in response to hyposmotic stress. Biol. Bull. 146 (1): 20-31.
- ENDEAN, R. and W. STABLUM, 1973. A study of some aspects of the crown-of-thorns starfish (Acanthaster planci) infestations of reefs of Australia's Great Barrier Reef. Atoll Research Bull. 167: 1-62.
- \_\_\_\_\_, 1973. The apparent extent of recovery of reefs of Australia's Great Barrier Reef devastated by the crown-of-thorns starfish. Ibid., 168: 1-26.
- ERNST, G., 1973. Evolution und ökologische Varianz bei fossilen Echiniden. Aufsätze und Reden senckenberg. naturforsch. Ges., 24: 83-102, 5 figs.
- \_\_\_\_\_, 1973. Aktuopalaöntologie und Merkmalsvariabilität bei mediterranen Echiniden und Rückschlüsse auf die Ökologie und Artumgrenzung fossiler Formen. Paläont. Zeitschrift 47: 188-216, 9 figs., 2 pls.
- \_\_\_\_\_, 1973. Die Echiniden-Fauna aus dem Santon der Gehrdenener Berge. Berichte Naturhist. Ges., 117: 79-102, 6 figs.
- \_\_\_\_\_ and E. SEIBERTZ, 1974. Modern Concepts and Methods of Echinoid Biostratigraphy. Pal. Soc. Amer., vol. on Biostratigraphy, 6 figs. (in press).
- FECHTER, H., 1973. Zur Funktion des Afterschornsteinschleuderns bei Diademseeigeln. Marine Biology 22: 347-351.

- FELL, F.J. The echinoids of Easter Island (Rapa Nui). *Pacific Sci.* 28 (2): 147-158.
- FENAUX, L.A., in press. Effet d'un jeûne de durée sur les principaux constituants biochimiques du test, des gonades et du tube digestif chez *A. lixula*.
- FERGUSON, J.C., in press. The role of free amino acids in nitrogen storage during the annual cycle of a starfish.
- FISHELSON, L., in press. Ecology of crinoids and their epi- and endozoic fauna of the northern Red Sea. *Marine Biology*.
- FOSTER, R.J., 1974. Eocene echinoids and the Drake Passage. *Nature* 249: 7511.
- FRANZEN, C., in press. Epizoans on Silurian-Devonian Crinoids. *Lethaia*.
- FREST, T.J., in press. Caryocrinitidae of the Laurel Limestone (Silurian: Wenlock) of Indiana.
- GUILLE, A., in press. Ophiurides de l'Archipel de Kerguelen Données quantitatives. Third Symposium on Antarctic Biology.
- \_\_\_\_\_ and G. CHERBONNIER, in press. Echinodermes des îles Kerguelen recoltés par P. Grua. *Bull. Mus. Nat. Hist. Nat. Paris*.
- HAGSTROM, B.E. and S. LÖNNING, 1973. The sea urchin egg as a testing object in toxicology. *Acta Pharm. Tox.* 32 suppl. 1: 1-49.
- HAUGH, B.N., 1974. Digestive and coelomic systems of Mississippian camerate crinoids.
- HAYASHI, R., M. KOMATSU and C. OGURO, 1973. Wrinkled blastula of the sea-star Acanthaster planci (Linnaeus). *Proc. Jap. Soc. Syst. Zool.* 9: 59-61.
- HEFFERNAN, J.M. and S.A. WAINWRIGHT, 1974. Locomotion of the holothurian Euapta lappa and redefinition of peristalsis. *Biol. Bull.* 147 (1): 95-104.
- HENDERSON, R.A., in press. Cenozoic spatangoid echinoids from New Zealand. *New Zealand Geol. Survey Paleont. Bull.* 46.
- HENDLER, G.L., in press. Adaptational significance of the patterns of ophiuroid development. *Amer. Zool.*
- HESS, H., 1973. Neue Echinodermenfunde aus dem mittleren Dogger des Aargauer Juras. *Eclogae geol. Helv.* 66 (3): 625-656.
- \_\_\_\_\_, 1974. Neue funde des Seesterns Terminaster cancriformis (Qu.) aus Callovien und unterem Oxford von England, Frankreich und der Schweiz. *Eclogae geol. Helv.* 67 (3).

- HIARI, S., K. CHIDA, and H. KANATANI, 1973. Role of follicle cells in maturation of starfish oocytes. *Develop. Growth and Differentiation* 15: 21-31.
- HIGGINS, R.C., 1974. Observations on the biology of Apatopygus recens (Echinoidea: Cassiduloida) around New Zealand. *J. Zool., Lond.* 173: 505-516.
- \_\_\_\_\_, 1974. Specific status of Echinocardium cordatum, E. australe, and E. zealandicum (Echinoidea: Spatangoida) around New Zealand, with comments on the relation of morphological variation to environment. *Ibid.*: 451-475.
- JAMES, D.B., in press. Studies on Indian echinoderms - 5. New and little known starfishes from the Indian Seas. *J. Mar. Biol. Assn. India.*
- \_\_\_\_\_, in press. Note on the development of the asteroid Asterina burtoni Gray. *Ibid.*
- JANGOUX, M., 1973. Le genre Neoferdina Livingstone (Echinodermata, Asteroidea: Ophidiasteridae). *Rev. Zool. Bot. afr.* 87 (4): 775-794.
- \_\_\_\_\_, 1974. Les étoiles de mer. *Forum ULB, Periodique l'Universite Libre Bruxelles* 40: 30-36.
- \_\_\_\_\_, 1974. Sur l'"association" entre certaines Asteries et des poissons Carapidae. *Rev. Zool. afr.* 88 (4): 789-796.
- \_\_\_\_\_ and M. VLOBERGH, 1973. Contribution a l'etude du cycle annuel de reproduction d'une population d'Asterias rubens (Echinodermata, Asteroidea) du littoral Belge. *Netherlands J1. of Sea Research* 6 (3): 389-408.
- KANATANI, H., 1973. Maturation-inducing substance in starfishes. *Intern. Rev. Cytol.* 35: 253-298.
- \_\_\_\_\_, 1973. Invertebrate reproduction (in Japanese). Pp. 171-187, in: *Physiology of marine organisms* (S. Utida, ed.). University of Tokyo Press.
- \_\_\_\_\_, 1973. Gametogenesis (in Japanese). Pp. 1-22, in *Modern Genetics*, Vol. 4. Development and differentiation. Asakurashoten, Tokyo.
- \_\_\_\_\_, 1974. Mechanism of oocyte maturation and gamete release in starfishes. I. Gonad-stimulating substance (in Japanese). *Zool. Mag. (Tokyo)* 83: 1-9.
- \_\_\_\_\_, 1974. Mechanism of oocyte maturation and gamete release in starfishes. II. Maturation-inducing substance. *Ibid.*

- \_\_\_\_\_, in press. Maturation-inducing substances in asteroid and echinoid oocytes. Amer. Zool.
- \_\_\_\_\_ and T. KISHIMOTO, 1974. On the maturation-inducing activity of phytohemagglutinin M in starfish oocytes. Annot. Zool. Japon. 47: 22-29.
- KANO, Y.T., M. KOMATSU and C. OGURO, 1974. Notes on the development of the sea-star Leptasterias ochotensis similispinus, with special reference to the skeletal system. Proc. Jap. Soc. Syst. Zool. 10: 73-82.
- KAWAMURA, K., 1973. Fishery biological studies on a sea urchin, Strongylocentrotus intermedius (A. Agassiz). Sci. Rep. Hokkaido Fish. Exp. Station No. 1-54.
- KESLING, R.V., 1973. New Botryocrinus and Glossocrinus from the Middle Devonian Bell Shale of Michigan. Contrib. Museum of Paleont., University of Michigan 24 (5): 31-46.
- KIER, P.M., 1974. Evolutionary trends and their functional significance in the Post-Paleozoic echinoids. Paleont. Soc., Mem. 5, 96 pp.
- KISHIMOTO, T. and H. KANATANI, 1973. Induction of starfish oocyte maturation by disulfide-reducing agents. Exptl. Cell Research 82: 296-302.
- KOBAYASHI, N., 1974. Marine pollution bioassay by sea urchin eggs; an attempt to enhance accuracy. Publ. Seto Mar. Biol. Lab. 22.
- KOLATA, D.R., in press. Middle Ordovician echinoderms from Northern Illinois and Southern Wisconsin. Memoirs Paleontological Society.
- KOMATSU, M., 1973. On the wrinkled blastula of the sea-star Astropecten scoparius. Zool. Mag. Tokyo 82: 204-207.
- \_\_\_\_\_, 1973. A preliminary report on the development of the sea-star Leiaster leachii. Proc. Jap. Soc. Syst. Zool. 9: 55-58.
- \_\_\_\_\_, in press. On the development of the sea-star Astropecten latespinosus Meissner. Biol. Bull. 148.
- KRISHNAN, S., 1974. Observations on the transport of sugar in the temperate holothurian Cucumaria frondosa. Fisk. Dir. Skr. HavUnders. 16: 171-177.
- \_\_\_\_\_, in press. Ultrastructural studies on the testis of the temperate holothurian, Cucumaria frondosa.
- KRUMBEIN, W.E. and J.N.C. VAN DER PERS, 1974. Diving investigations on biodeterioration by sea-urchins in the rocky sublittoral of Helgoland. Helgoländer wiss. Meeresunters 26: 1-17.
- LANE, N.G., 1973. Paleontology and paleoecology of the Crawfordsville fossil site (Upper Osagian: Indiana). University of California Press, 1973, 141 pp.

- LARRAIN, A., 1973. Los pedicelarios globiferos y el desarrollo de Abatus agassizii (Pfeffer). Bol. Soc. Biol. de Concepcion 46: 53-63.
- LAWRENCE, J.M., 1973. The effect of temperature-salinity combination on the functional well-being of adult Lytechinus variegatus (Echinodermata: Echinoidea). Amer. Zoologist 13 (4) (ABSTRACT).
- \_\_\_\_\_, 1974. Temperature tolerances of tropical shallow-water echinoids (Echinodermata) at Elat (Red Sea). Quart. Jl. Florida Acad. Sci. 37 suppl. 1: 8 (ABSTRACT).
- \_\_\_\_\_, in press. Temperature tolerances of three species of echinoids (Echinodermata) from Elat (Red Sea). Israel J. Zoology.
- \_\_\_\_\_, K. ERWIN and R. TURNER, 1974. Stomach contents of Luidia clathrata (Asteroidea). Quart. Jl. Florida Acad. Sci. 37 suppl. 1: 8 (ABSTRACT).
- LOWE, E., 1974. Absorptive efficiencies of Lytechinus variegatus (Echinoidea). Quart. Jl. Florida Acad. Sci. 37 suppl. 1: 8 (ABSTRACT).
- LOWRY, L.F. and J.S. PEARSE, 1973. Abalones and sea urchins in an area inhabited by sea otters. Mar. Biol. 23: 213-219.
- LYNN, D.H. and J. BERGER, 1973. The Thyrophylacidae, a family of carnivorous philasterine ciliates entocommensal in stronglylocentrotid echinoids. Trans. Amer. Micros. Soc. 92 (4); 533-557.
- LUCAS, J.S., 1973. Reproductive and larval biology of Acanthaster planci (L.) in Great Barrier Reef waters. Micronesica 9 (2): 197-203
- MCKNIGHT, D.G., 1973. Additions to the asteroid fauna of New Zealand: Families Benthoplectinidae, Odontasteridae, Asteroidea and Brisingidae; with notes on Porcellanaster caeruleus Wyville Thomson (Family Porcellanasteridae). New Zealand Oceanographic Institute Records 1 (16): 219-240.
- \_\_\_\_\_, 1973. Additions to the asteroid fauna of New Zealand: families Radiasteridae, Solasteridae, Pterasteridae, Asterinidae, Ganeriidae and Echinasteridae. Ibid., 2 (1): 1-15.
- \_\_\_\_\_, 1973. Stalked crinoids from the New Zealand region. New Zealand Oceanographic Institute Records 1 (14): 199-210.
- \_\_\_\_\_, 1974. Some echinoids new to New Zealand waters. New Zealand Oceanographic Inst. Records 2 (3): 25-44.
- MACURDA, D.B., 1973. Ecology of comatulid crinoids at Grand Bahama Island. Hydro-lab Journal 2 (1): 9-24.
- \_\_\_\_\_, 1974. The quantitative phyletics of the camerate crinoid families Actinocrinitidae and Periechocrinitidae. Journ. Paleont. 47.

- \_\_\_\_\_, in press. The Pentremites (Blastoidea) of the Burling Limestone (Mississippian). Ibid.
- \_\_\_\_\_ and D.L. MEYER, 1974. Feeding posture of modern stalked crinoids. Nature 247: 394-396.
- \_\_\_\_\_ and \_\_\_\_\_, 1975. The microstructure of the crinoid endoskeleton. Univ. Kansas Paleont. Contrib. 74: 1-22.
- \_\_\_\_\_ and P.R. RACHEBOEUF, in press. Three Devonian and Carboniferous spiraculate blastoids from Brittany (France). Journ. Paleont. 47.
- MARKEL, K., 1974. Morphologie der Seeigelzähne. V. Die Zähne der Clypeastroida (Echinodermata, Echinoidea). Z. Morph. Tiere 78: 221-256.
- MARSH, J.A. and R.T. TSUDA, 1973. Population levels of Acanthaster planci in the Mariana and Caroline Islands 1969-1972. Atoll Research Bull. 170: 1-16.
- MARSH, L.M., 1974. Shallow-water asterozoans of Southeastern Polynesia I. Asteroidea. Micronesica 10 (1): 65-104.
- MEYER, D. L., 1973. Distribution and living habits of comatulid crinoids near Discovery Bay, Jamaica. Bull. Mar. Sci. 23 (2): 244-259.
- MILEIKOVSKY, S.A., 1973. Speed of active movements of pelagic larvae of marine bottom invertebrates and their ability to regulate their vertical position. Mar. Biol. 23 (1): 11-17.
- \_\_\_\_\_, 1974. On predation of pelagic larvae and early juveniles of marine bottom invertebrates by adult benthic invertebrates and their passing alive through their predators. Marine Biology.
- \_\_\_\_\_, in press. Types of larval development in marine bottom invertebrates: an integrated ecological scheme. Thalassia Jugoslavica.
- MILLOTT, N., in press. Photosensitivity of echinoids. In: Advances in Marine Biology (Russell and Yonge, eds.).
- MIRONOV, A., 1973. The new deep-sea species of the genus Echinocrepis and distribution of the Family Pourtalesiidae (Echinoidea: Meridosternina). Proc. P.P. Shirshov Inst. Oceanology 91: 240-247.
- \_\_\_\_\_, 1974. The pourtalesiid sea urchins of Antarctic and subantarctic (Echinoidea: Pourtalesiidae). Ibid., 98: 240-252.
- \_\_\_\_\_, in press. Deep-sea urchins (Echinodermata: Echinoidea) collected during the 14th cruise of the R/V "Akademik Kurchatov". Ibid.
- \_\_\_\_\_, in press. Mode of life of the pourtalesiid sea urchins (Echinoidea: Pourtalesiidae). Ibid.



- \_\_\_\_\_, in press. The new species of the deep-sea urchins of the genus Echinostigma (Echinoidea: Pourtalesiidae). Zoologicheskyy Zhurnal.
- NATAF, G. and G. CHERBONNIER, 1973. Les Asterides d'Afrique Occidentale. Utilisation du microscope électronique à balayage pour une étude systématique des Luidia. Bull. Mus. d'Hist. nat. 107: 69-100.
- NICHOLS, D., 1974. The uniqueness of echinoderms. Oxford Biology Readers No. 53. Oxford University Press.
- OGDEN, J.C., R.A. BROWN and N. SALESKY, 1973. Grazing by the echinoid Diadema antillarum Philippi: formation of halos around West Indian patch reefs. Science 182: 715-717.
- \_\_\_\_\_, D.P. ABBOTT and I. ABBOTT, (EDS.), 1973. Studies on the activity and food of the echinoid Diadema antillarum Philippi on a West Indian patch reef. West Indies Laboratory, Fairleigh Dickinson University, St. Croix, Special Publication No. 2: 1-96.
- ORMOND, R.F.G., A.C. CAMPBELL, S.M. HEAD, R.J. MOORE, P.R. RAINBOW, A.P. SAUNDERS, 1973. The formation and breakdown of aggregations of the crown-of-thorns starfish, Acanthaster planci. Nature 246: 167-169.
- PABIAN, R.K., 1974. A Pennsylvanian ophiuroid from southwestern Iowa. Proc. Iowa Acad. Sci. 80.
- \_\_\_\_\_, in press. Crinoid studies Part I, some Pennsylvanian crinoids from Nebraska. Bull. of American Paleontology 281.
- \_\_\_\_\_, in press. Crinoid studies Part II, some Permian crinoids from Nebraska, Kansas and Oklahoma. Ibid.
- PAINE, R.T., in press. Intertidal community structure: experimental studies on the relationship between a dominant competitor and its principal predator. Oecologia.
- PAUL, C.R.C., 1973. British Ordovician Cystoids. Palaeontological Soc. Monographs (pt. 1): 1-64.
- \_\_\_\_\_, in press. Regulaecystis devonica, a new Devonian pleurocystid from Devon. Geol. Mag.
- PAWSON, D.L., in press. Molpadiid holothurians of the Southern Oceans. Antarctic Research Series.
- PEARSE, J.S., in press. Class Echinoidea. In: Intertidal invertebrates of the Central California coast, 3rd ed. (R.I. Smith and J.T. Carlton, eds). University of California Press, Berkeley.
- \_\_\_\_\_, in press. Reproductive patterns of tropical reef animals: three species of sea urchins. In: Proc. 2nd International Symposium on Coral Reefs.

- \_\_\_\_\_ and V.B. PEARSE, 1973. Removal of glycine from solution by the sea urchin Strongylocentrotus purpuratus. Mar. Biol. 19: 281-284.
- \_\_\_\_\_ and \_\_\_\_\_, in press. Growth zones in the echinoid skeleton. Amer. Zool.
- REGIS, M.-B., 1973. Premieres donnees sur la croissance d'Arbacia lixula (L.). Tethys 5 (1).
- \_\_\_\_\_, in press. Sur la croissance d'Arbacia lixula (L.). II. Le systeme apical.
- \_\_\_\_\_, in press. Sur les anomalies du systeme apical de Paracentrotus lividus Lamarck dans le Golfe de Marseille.
- ROUX, M., 1975. Microstructural analysis of the crinoid stem. Univ. Kansas Paleont. Contrib. 75: 1-7.
- ROWE, F.W.E., in press. Catalogue of the Sladen Collection in the Royal Albert Memorial Museum, Exeter, Devon. Biological Journal.
- RUTHERFORD, J.C., 1973. Reproduction, growth and mortality of the holothurian Cucumaria pseudocurata. Mar. Biol. 22: 167-176.
- SALVAT, M.B., in press. Algunos aspectos de la biologia de Patiria stellifer (Moebius)
- SATO, H., in press. The mitotic spindle. In: R. Blandau (ed.) The biology of pathology of aging gametes. Chicago University Press.
- \_\_\_\_\_, T. MIKI-NOMURA and K. OWARIBE, 1973. The cytoplasmic filaments suspending echinoderm egg in the fertilization membrane. Proc. Japanese Soc. Biophysics.
- SERAFY, D.K., 1974. A new heart-urchin Areolampas atlantica, new genus, new species, from the north Atlantic, and notes on the closely related Homolampas. Proc. Biol. Soc. Washington 87 (6): 41-48.
- \_\_\_\_\_, 1974. Variation in the polytypic sea urchin Lytechinus variegatus (Lamarck, 1816) in the western Atlantic (Echinodermata: Echinoidea). Bull. Mar. Sci. 23 (3): 525-534.
- \_\_\_\_\_, in press. The systematics and ecology of the Gulf of Mexico echinoids collected during the Project Hourglass, August 1965 through November 1967. Memoirs Hourglass Cruises.
- SEVASTOPULO, G.D. and A.B. WEST, 1973. Cidaris cidaris (L.) (Echinoidea) from the Mullet Peninsula, Co. Mayo. Irish Naturalists Journal 17 (12): 415-6.
- SHEPHERD, S.A., 1973. Competition between sea urchins and abalone. Australian Fisheries 32 (6).

- SHIRAI, H., 1973. Effects of methionine and S-adenosylmethionine on production of l-methyladenine in starfish follicle cells. *Develop. Growth and Differentiation* 15: 307-313.
- \_\_\_\_\_, 1974. Effect of L-phenylalanine on l-methyladenine production and spontaneous maturation in starfish. *Exptl. Cell Research*.
- \_\_\_\_\_ and H. KANATANI, 1973. Induction of spawning and oocyte maturation in starfish by l-methyladenine monophosphate. *Develop. Growth and Differentiation* 15: 217-224.
- \_\_\_\_\_ and \_\_\_\_\_, 1974. Enhancement of starfish oocyte sensitivity to l-methyladenine by pretreatment with calcium-free seawater. *Zool. Mag. (Tokyo)* 83: 99-101.
- SIBUET, M., 1974. Cherbonniera utriculus gen. nov., sp. nov., petite Holothurie (Molpadonia, Molpadiidae) des vases abyssales du Nord-Est atlantique. *C.R. Acad. Sci. Paris* 279: 1443-14445.
- SKJAEVELAND, S.H., 1973. Echinoderms of Jan Mayen Island. *Astarte* 6: 69-74.
- \_\_\_\_\_, 1973. Ecology of echinoderms in Borgenfjorden, North-Trøndelag, Norway. *Det Kgl. Norske Videnskabers Selskab Museet, Miscellanea* 8: 1-51.
- SOLOVJEV, A.N., 1974. Features of evolution of suborder Meridosternina (Echinoidea) and origin of deep-water families Urechinidae and Pourtalesiidae. Soviet-Japanese Symposium "Biology of marine mollusks and Echinodermata".
- \_\_\_\_\_ and G.A. KRJUTCHKOVA, in press. On larval stages of echinoids. *Paleontological Journal*.
- SOUZA SANTOS, H. and W. SILVA SASSO, 1973. Ultrastructural and histochemical studies on the mucous granules in the tube feet of the starfish Echinaster brasiliensis. *Experientia* 29: 473-474.
- \_\_\_\_\_ and \_\_\_\_\_, 1974. Ultrastructural and histochemical observations of the external epithelium of echinoderm tube feet. *Acta anat.* 88: 22-33.
- SPRINKLE, J., 1973. Morphology and evolution of blastozoan echinoderms. *Museum of Comparative Zoology, Harvard, Special Publication*, 283 pp.
- \_\_\_\_\_, 1973. Tripatocrinus, a new hybocrinid crinoid based on disarticulated plates from the Antelope Valley Limestone of Nevada and California. *Jour. Paleontology* 47 (5): 861-882.
- \_\_\_\_\_, 1973. New occurrence of the Ordovician eocrinoid Lingulocystis from Bolivia, South America. *Ibid.* 47 (6): 1113-1116.

- \_\_\_\_\_, 1974. New rhombiferan cystoids from the Middle Ordovician of Nevada. *Jour. Paleontology* 48 (6): 1174-1201.
- \_\_\_\_\_, 1974. Review of "The phylogeny of the fissiculate blastoids". *Ibid.* 48 (6): 1295-1296.
- \_\_\_\_\_ and ROBINSON, R.A., in press. Ctenocystoids. In: *Echinodermata 2. Treatise on Invertebrate Paleontology* (R.C. Moore, ed.). University of Kansas Press, Lawrence.
- STEPHENSON, D.G., in press. Pentamerism and the ancestral echinoderm. *Nature*.
- STOKES, R.B., in press. Royaumes et provinces fauniques du Cretace, etablis sur la base d'une etude systematique du genre Micraster. *Bull. Mus. Nat. d'Hist. Nat. Ser. 3*.
- STRATHMAN, R.R., 1974. Spread of sibling larvae of sedentary marine invertebrates. *Amer. Naturalist* 108: 29-44.
- STUKALINE, G.A., 1973. Late Paleozoic sea lilies of Transbaikalia and Mongolia. In: *Sbornik stratigraphy and paleontology of Transbaikalian geological formations*. Chita. Notes of Transbaikalian filial of Grographic Society of the USSR 94: 16-55.
- \_\_\_\_\_, in press. Sea lilies of Silurian and Devonian boundary beds of Central Kazakhstan.
- \_\_\_\_\_, in press. A characteristic of the content of crinoids of the Silurian-Devonian boundary beds. *Trudy of the Committee of the International Stratigraphic Commission on the Silurian-Devonian boundary*.
- \_\_\_\_\_, in press. New Devonian sea lilies of the Urals, Kazakhstan and Far East. In: *Sbornik new species of ancient plants and invertebrates of the USSR*.
- SUTTON, J.E., 1974. Key to ophiuroids. In: *Light's manual. A guide to the common intertidal invertebrates of the Central California Coast*. 3rd Edition. University of California Press.
- \_\_\_\_\_, 1974. Key to asteroids. *Ibid.*
- TERMIER, G., 1973. Les Echinodermes Cincta de la Montaigne Noire. *Geobios*.
- THOMAS, L.P., 1973. Western Atlantic brittlestars of the genus Ophonereis. *Bull. Mar. Sci.* 23 (3): 585-599.
- TORTONESE, E., in press. On two seastars living in the Mediterranean "submarine caves". *Pubbl. Staz. Zool. Napoli*.

- TURNER, R.L., 1973. Release mechanisms for gametes and juveniles of the hermaphroditic coelom-brooder Synaptula hydriformis (Echinodermata: Holothuroidea). Amer. Zool. 13 (4): 1337-1338.
- \_\_\_\_\_, 1973. Significance of egg-size in echinoderm development. Quart. Jl. Florida Acad. Sci. 37 suppl. 1:8.
- \_\_\_\_\_, 1974. Post-metamorphic growth of the arms in Ophiophragmus filigraneus (Echinodermata: Ophiuroidea) from Tampa Bay, Florida (U.S.A.). Mar. Biol. 24: 273-277.
- USSR ACADEMY OF SCIENCES, 1974. The biology of marine molluscs and echinoderms. Abstracts of papers delivered at the First Soviet-Japanese Symposium on Marine Biology at Nakhoda, September 1974. (There are abstracts of 30 papers on echinoderms). Far East Science Center, Vladivostok.
- VINE, P. J., 1973. Crown of thorns (Acanthaster planci) plagues: the natural causes theory. Atoll Research Bull. 166: 1-10.
- WALTER, C.W., in press. Studies on the reproductive systems of sea-stars. I. The morphology and histology of the gonad of Asterias vulgaris. Biol. Bull.
- \_\_\_\_\_, in press. Histology and ultrastructure of the gonad of Ctenodiscus crispatus (Asteroidea). Amer. Zool. (ABSTRACT).
- WEBER, W. and M. DAMBACH, 1974. Light-sensitivity of isolated pigment cells of the sea urchin Centrostephanus longispinus. Cell. Tiss. Res. 148: 437-440.
- WEBSTER, G.D., 1973. Bibliography and index of paleozoic crinoids 1942-1968. Geol. Soc. America Mem. 137, 341 pp.
- \_\_\_\_\_, 1974. Crinoid pluricolumnal noditaxis patterns. Geol. Soc. America abstracts: 274. (ABSTRACT).
- \_\_\_\_\_, in press. Crinoid pluricolumnal noditaxis patterns. Jour. Paleo.
- WEBSTER, S.K. and A.C. GIESE, in press. Oxygen consumption of the purple sea urchin with special reference to the reproductive cycle.
- WEST, A.B. and F. JEAL, 1974. Observations on the nutrition of the echinoid Paracentrotus lividus. Proc. Challenger Society 4 (3).
- WILSON, B.R. and L.M. MARSH, 1974. Acanthaster studies on a West Australian coral reef. Proc. Second International Coral Reef Symposium.
- \_\_\_\_\_, \_\_\_\_\_, and B. HUTCHINS, 1974. A puffer fish predator of crown of thorns in Australia. Search 5 (11-12): 601-602.

WOBBER, D., 1973. Aboral extrusion of squid pens by the sea star Pycnopodia helianthoides. Veliger 16 (2): 203-207.

YAMAGUCHI, M., 1973. Recruitment of coral reef asteroids, with emphasis on Acanthaster planci (L.). Micronesica 9 (2): 207-212.

\_\_\_\_\_, 1973. Early life histories of coral reef asteroids, with special reference to Acanthaster planci (L.). Pp. 369-387 in Biology and Geology of Coral Reefs, Vol. II: Biology 1. Academic Press, New York.

\_\_\_\_\_, 1974. Larval life span of the coral reef asteroid Gomophia egyptiaca Gray. Micronesica 10 (1): 57-64.

Name \_\_\_\_\_  
          last                          first                          middle

Address (if recently changed) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Current research projects(s):

Recent publications (within last year) and papers in press:

Suggestions and requests:

(please complete and return to editors)