

Bibliography of Oyster Parasites and Diseases



SPECIAL SCIENTIFIC REPORT-FISHERIES No. 563

UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF COMMERCIAL FISHERIES

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United States Fish and Wildlife Service
Special Scientific Report--Fisheries 563

Washington, D.C.
April 1968

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ABSTRACT

The bibliography is oriented toward the diseases that affect oysters and is not concerned with human diseases that may be transmitted by raw shellfish. References to parasites and diseases of pearl oysters (Pteriidae) have been included, even though such bivalves are not true oysters (Ostreidae). References to mortalities of oysters have been included only if a pathogen was associated or suspected. Particular emphasis has been placed on disease states resulting from an infectious agent or parasite invasion.

INTRODUCTION

Because of their worldwide economic importance, oysters are among the most thoroughly studied of marine invertebrates. Disease is one aspect of oyster biology that has received particular attention. Literature on parasites and diseases of oysters has accumulated at a surprising and accelerating rate. Preparation of a recent review of diseases of Mollusca and Crustacea provided an opportunity to assemble many of the publications and references on oysters diseases--a large part of which could not be included in a general review. Consequently, it seemed useful to publish a bibliography concerned specifically with oyster diseases, in view of the amount of material available and the current expanding interest in the subject.

REFERENCES PERTAINING TO OYSTER PARASITES AND DISEASES

AGOSTINI, ANGELA.

1929. Sulle alghe perforanti la conchiglia di *Ostrea edulis* L. del canale delle saline di Cagliari. Pubbl. Ist. Biol. Mar. Tirreno San Bartolomeo (Cagliari) 15, 14 pp.

ANDREWS, JAY D.

1955. Notes on fungus parasites of bivalve mollusks in Chesapeake Bay. Proc. Nat. Shellfish. Ass. 45: 157-163.

1956. What killed your oysters? S. Fish. 16(7): 22-23.

ANDREWS, JAY D.

1961. Oyster mortality studies. Rep. Va. Fish. Comm. 62nd and 63rd: 33-36.

1964. Oyster mortality studies in Virginia. IV. MSX in James River public seed beds. Proc. Nat. Shellfish. Ass. 53: 65-84.

1965. Infection experiments in nature with *Dermocystidium marinum* in Chesapeake Bay. Chesapeake Sci. 6: 60-67.

1966. Oyster mortality studies in Virginia. V. Epizootiology of MSX, a protistan pathogen of oysters. Ecology 47: 19-31.

ANDREWS, JAY D., and WILLIS G. HEWATT.

1954. Incidence of *Dermocystidium marinum*, Mackin, Collier, and Owen, a fungus disease of oysters, in Virginia. Conv. Add. Nat. Shellfish. Ass. 1953: 79. [Abstract.]

1957. Oyster mortality studies in Virginia. II. The fungus disease caused by *Dermocystidium marinum* in oysters of Chesapeake Bay. Ecol. Monogr. 27: 1-26.

ANDREWS, JAY D., and J. L. McHUGH.

1957. The survival and growth of South Carolina seed oysters in Virginia waters. Proc. Nat. Shellfish. Ass. 47: 3-17.

ANDREWS, JAY D., and JOHN L. WOOD.

1961. Status of diseases of oysters in Chesapeake Bay. Va. Inst. Mar. Sci. Spec. Rep. 1, 5 pp.

ANDREWS, JAY D., JOHN L. WOOD, and H. DICKSON HOESE.

1962. Oyster mortality studies in Virginia. III. Epizootiology of a disease

- caused by Haplosporidium costale Wood and Andrews. *J. Insect Pathol.* 4: 327-343.
- ANONYMOUS.
1665. Observations about shining worms in oysters. *Phil. Trans. Roy. Soc. London* 12: 203-206.
1963. Virginia production adversely affected by MSX. *Commer. Fish. Rev.* 25(1): 45-46.
- ANONYMOUS. [FARLEY, C. AUSTIN.]
1965. New parasite disease under study. *Commer. Fish. Rev.* 27(7): 44.
- BAER, K. E. von.
1826. Beiträge zur Kenntniss der niedern Thiere. *Nova Acta Acad. Caesar Leop. Carol.* 13: 523-762.
- BAIRD, R. H., G. C. BOLSTER, and H. A. COLE.
1950. Mytilicola intestinalis Steuer in the European flat oyster (Ostrea edulis). *Nature (London)* 168: 560.
- BANG, FREDERIK B.
1957. Reaction to injury in the oyster. *Biol. Bull. (Woods Hole)* 113: 335-336. [Abstract.]
1961. Reaction to injury in the oyster (Crassostrea virginica). *Biol. Bull. (Woods Hole)* 121: 57-68.
1962. Serological aspects of immunity in invertebrates. *Nature (London)* 196: 88-89.
- BARROW, JAMES H., JR., and BRUCE C. TAYLOR.
1966. Fluorescent-antibody studies of haplosporidian parasites of oysters in Chesapeake and Delaware Bays. *Science* 153: 1531-1533.
- BAUGHMAN, J. L.
1947. An annotated bibliography of oysters, with pertinent material on mussels and other shellfish, and an appendix on pollution. The Texas A & M Research Foundation, The Agricultural & Mechanical College of Texas, College Station, Tex., 794 pp.
- BISSETT, K. A.
1947. Bacterial infections and immunity in lower vertebrates and invertebrates. *J. Hyg. (Cambridge)* 45: 128-135.
- BOYCE, RUBERT, and W. A. HERDMAN.
1897a. On a green leucocytosis in oysters associated with the presence of copper in the leucocytes. *Proc. Roy. Soc., London* 62: 30-38.
1897b. The possible infectivity of the oyster, and upon the green disease in oysters. *Rep. Br. Ass. Advan. Sci.* 1896: 663-669.
- BURTON, RICHARD W.
1963. Distribution of oyster microparasites in Chesapeake Bay, Maryland, 1959-1960. *Proc. Nat. Shellfish. Ass.* 52: 65-74.
- CAULLERY, M., and F. MESNIL.
1905. Recherches sur les Haplosporidies. *Arch. Zool. Exp. Gén. Ser. 4, 4*: 101-181.
- CERRUTI, A.
1941. Osservazioni ed esperimenti sulle cause di distruzione delle larve d'ostrica nel Mar Piccolo e nel Mar Grande di Taranto. *Arch. Oceanogr. Limnol.* 1: 165-201.
- CERTES, A.
1882a. Les eaux potables. Les parasites intestinaux de l'huitre. *Trib. Méd. (Paris)* 14: 464-466.
1882b. Note sur les parasites et les commensaux de l'Huitre. *Bull. Soc. Zool. France* 7: 347-353.
1883. Parasites et commensaux de l'huitre. (Note complémentaire) *Compt. Rend. Ass. Franc. Avance. Sci., Rouen* 12: 576-577.
- CHENG, THOMAS C.
1964. The biology of animal parasites. W. B. Saunders Co., Philadelphia, 727 pp.
1965. Histochemical observations on changes in the lipid composition of the American oyster, Crassostrea virginica (Gmelin), parasitized by the trematode Bucephalus sp. *J. Invert. Pathol.* 7: 398-407.
1966. The coracidium of the cestode Tylocephalum and the migration and fate of this parasite in the American oyster, Crassostrea virginica. *Trans. Amer. Microscop. Soc.* 85: 246-255.
- CHENG, THOMAS C., and RICHARD W. BURTON.
1965a. Relationships between Bucephalus sp. and Crassostrea virginica: histopathology and sites of infection. *Chesapeake Sci.* 6: 3-16.
1965b. The American oyster and clam as experimental intermediate hosts of Angiostrongylus cantonensis. *J. Parasitol.* 51: 296.
- CHENG, THOMAS C., CARL N. SHUSTER, JR., and ALAN H. ANDERSON.
1966. A comparative study of the susceptibility and response of eight species of marine pelecypods to the trematode Himasthla quissetensis. *Trans. Amer. Microscop. Soc.* 85: 284-295.
- CHEW, KENNETH K., ALBERT K. SPARKS, and STANLEY C. KATKANSKY.
1965. Preliminary results on the seasonal size distribution of Mytilicola orientalis and the effect of this parasite on the Pacific oyster, Crassostrea gigas. *J. Fish. Res. Bd. Can.* 22: 1099-1101.
- CHRISTENSEN, AAGE MØLLER, and JOHN J. McDERMOTT.
1958. Life-history and biology of the oyster crab, Pinnotheres ostreum Say. *Biol. Bull. (Woods Hole)* 114: 146-179.

- COLE, H. A.
1950. Shell disease in re-laid French oysters. *Nature* (London) 166: 19-20.
1951. The British oyster industry and its problems. *Cons. Perma. Int. Explor. Mer, Rapp. Proc.-Verb. Réun.* 128(2): 7-17.
- COLE, H. A., and D. A. HANCOCK.
1956. Progress in oyster research in Britain 1949-1954, with special reference to the control of pests and diseases. *Cons. Perma. Int. Explor. Mer, Rapp. Proc.-Verb. Réun.* 140(3): 24-29.
- COLE, H. A., and G. D. WAUGH.
1956. Shell disease in Portuguese oysters. *Nature* (London) 178: 422.
- COLWELL, RITA R., and JOHN LISTON.
1961. A bacteriological study of the natural flora of Pacific oysters (*Crassostrea gigas*) when transplanted to various areas in Washington. *Proc. Nat. Shellfish. Ass.* 50: 181-188.
- COUCH, JOHN A.
1967. Concurrent haplosporidian infections of the oyster, *Crassostrea virginica* (Gmelin). *J. Parasitol.* 53: 248-253.
- COUCH, JOHN A., C. AUSTIN FARLEY, and AARON ROSENFELD.
1966. Sporulation of *Minchinia nelsoni* (Haplosporida, Haplosporidiidae) in *Crassostrea virginica* (Gmelin). *Science* 153: 1529-1531.
- DAVIS, HARRY C., and VICTOR L. LOOSANOFF.
1955. A fungus disease in bivalve larvae. *Proc. Nat. Shellfish. Ass.* 45: 151-156.
- DAVIS, HARRY C., VICTOR L. LOOSANOFF, WILLIAM H. WESTON, and CHRISTOPHER MARTIN.
1954. A fungus disease in clam and oyster larvae. *Science* 120: 36-38.
- DAWSON, C. E.
1955. Observations on the incidence of *Dermocystidium marinum* infection in oysters of Apalachicola Bay, Florida. *Tex. J. Sci.* 7: 47-56.
- DIMITROFF, V. T.
1926. Spirochaetes in Baltimore market oysters. *J. Bacteriol.* 12: 135-177.
- DOLLFUS, ROBERT PH.
1921a. Résumé de nos principales connaissances pratiques sur les maladies et les ennemis de l'huître. *Notes Mém. Off. Sci. Tech. Pêches Marit.* 7, 46 pp.
1921b. Sur les cellules a mucus de l'huître (*Ostrea edulis* L.) et la mycose de Pettit. *Compt. Rend. Séances Soc. Biol.* 85: 449-451.
1923a. La maladie des moules et la mortalité des huîtres en Zelande au course de ces dernières années. *Bull. Soc. Cent. Aquiculture Pêche* 30: 38-44.
- DOLLFUS, ROBERT PH.
1923b. Le Cestode des perles fines des Méléagrines de Nossi-Bé. *Compt. Rend. Hebd. Séances Acad. Sci., Paris* 176: 1265-1267.
1923c. Le Trématode des perles de nacre des moules de Provence. *Compt. Rend. Hebd. Séances Acad. Sci., Paris* 176: 1427-1429.
- DRINNAN, ROY E., and L. A. ENGLAND.
1965. Further progress in rehabilitating oyster stocks. *Fish. Res. Bd. Can., Gen. Ser. Circ. Biol. Sta. St. Andrews, N. B.* 48, 4 pp.
- DRINNAN, ROY E., and J. C. MEDCOF.
1961. Progress in rehabilitating disease affected oyster stocks. *Fish. Res. Bd. Can., Gen. Ser. Circ. Biol. Sta. St. Andrews, N. B.* 34, 3 pp.
- DRINNAN, ROY E., E. B. HENDERSON, and B. T. KHOUW.
1960. Malpeque disease. *Fish. Res. Bd. Can., Annu. Rep. Invest. Sum., Biol. Sta. St. Andrews, N. B.* 1959-60. *Molluscan Shellfish Summaries* 11: 31-36.
- DUBOIS, RAPHAËL.
1907. Sur un sporozoaire parasite de l'huître perlière, *Margaritifera vulgaris* Jam. Son rôle dans la formation des perles fines. *Compt. Rend. Séances Soc. Biol.* 62: 310-312.
- DUJARDIN, F.
1841. Histoire naturelle des zoophytes infusoires (animalcules microscopiques). *Librarie Encyclopédique de Roret, Paris*, 684 pp.
- DUNNINGTON, E. A.
1956. Oyster parasite distribution studies in Maryland waters. *Md. Tidewater News* 12(9): 1, 2.
- DURVE, V. S., and D. V. BAL.
1960. Shell disease in *Crassostrea gryphoides* (Schlotheim). *Curr. Sci.* 29: 489-490.
- ENGLE, JAMES B., and AARON ROSENFELD.
1963. Progress in oyster mortality studies. *Proc. Gulf Carib. Fish. Inst.* 15th Annu. Sess: 116-124.
- EYRE, JOHN W. H.
1923. Some notes on the bacteriology of the oyster (including description of two new species). *J. Roy. Microscop. Soc.* (London) 4: 385-394.
1924. An account of investigations into the cause or causes of the unusual mortality among oysters in English beds during 1920 and 1921, part II. Appendix D, Final bacteriological report. *Min. Agric. Fish., Fish. Invest., London, Ser. 2*, 6(4): 29-39.
- FABRE-DOMERGUE, P.
1887. Les parasites microscopiques de l'huître et de la moule comestibles. *Naturaliste* 9: 116-117.

- FANTHAM, H. B.
1908. Spirochaeta (Trypanosoma) balbiani (Certes) and Spirochaeta anodontae (Keysselitz): Their movements, structure and affinities. *Quart. J. Microscop. Sci.* 52: 1-73.
- FARLEY, C. AUSTIN
1965a. Acid-fast staining of haplosporidian spores in relation to oyster pathology. *J. Invert. Pathol.* 7: 144-147.
1965b. Pathologic responses of the oyster, Crassostrea virginica (Gmelin), to infection by the protistan parasite, MSX. *Amer. Malacol. Un., Bull.* 32: 23-24. [Abstract.]
1967. A proposed life cycle of Minchinia nelsoni (Haplosporida, Haplosporidiidae) in the American oyster, Crassostrea virginica. *J. Protozool.* 14: 616-625.
- FENG, JEAN S.
1966. The fate of a virus, Staphylococcus aureus Phage 80, injected into the oyster, Crassostrea virginica. *J. Invert. Pathol.* 8: 496-504.
- FENG, SUNG YEN.
1957. Ecological and epidemiological studies of Nematopsis ostrearum, a sporozoan parasite of the oyster Crassostrea virginica, in lower Chesapeake Bay and its tributaries. Thesis, M.A., College of William and Mary, Williamsburg, Va., 43 pp.
1958. Observations on distribution and elimination of spores of Nematopsis ostrearum in oysters. *Proc. Nat. Shellfish. Ass.* 48: 162-173.
1959. Defense mechanism of the oyster. *Bull. N.J. Acad. Sci.* 4: 17.
1962. The response of oysters to the introduction of soluble and particulate materials and the factors modifying the response. Thesis, Ph.D., Rutgers Univ., New Brunswick, N.J. 203 pp.
1965. Pinocytosis of proteins by oyster leucocytes. *Biol. Bull. (Woods Hole)* 129: 95-105.
1966. Experimental bacterial infections in the oyster Crassostrea virginica. *J. Invert. Pathol.* 8: 505-511.
- FISCHER, P.-H.
1951. Causes de destruction des Mollusques: maladies et mort. *J. Conchyliol.* 91: 29-59.
- FLOWER, FRANKLIN B., and JOHN J. McDERMOTT.
1952. Observations on the occurrence of the oyster crab, Pinnotheres ostreum, as related to oyster damage in Delaware Bay. *Conv. Add. Nat. Shellfish. Ass.* 1952: 44-46.
- FRASER, ROY.
1938. Pathological studies of Malpeque disease. *Fish. Res. Bd. Can., Ms. Rep.* 144, 25 pp. [Fish. Res. Bd. Can. Biol. Sta., St. Andrews, N.B.]
- FUJITA, TADASHI, TAKAYUKI MATSUBARA, HIRODO HIRODAWA, and FUMIO ARAKI.
1953. On the inflammatorious changes of the oyster, Ostrea gigas, in Hiroshima Bay. *Bull. Jap. Soc. Sci. Fish.* 19: 766-770. [In Japanese with English summary.]
1955. On the inflammatorious changes of the oyster Ostrea gigas in Hiroshima Bay - II. *Bull. Jap. Soc. Sci. Fish.* 20: 1063-1065 [In Japanese with English summary.]
- FUJITA, TSUNENOBU.
1925. Études sur les parasites de l'huître comestible du Japon Ostrea gigas Thunberg. Traduction accompagnée de notes, de diagnoses et d'une bibliographie, par Robert-Ph. Dollfus. *Ann. Parasitol. Hum. Comp.* 3: 37-59.
1943. Diseases of fish and shellfish. Koa Nippon Book Co., Tokyo, 227 pp. [In Japanese.]
- GALTSOFF, PAUL S.
1964. The American oyster Crassostrea virginica Gmelin. U.S. Fish Wildl. Serv., Fish. Bull. 64, 480 pp.
- GIARD, ALFRED.
1894. Sur une affection parasitaire de l'huître (Ostrea edulis L.) connue sous le nom de maladie du pied. *Compt. Rend. Séances Soc. Biol.* 46: 401-403.
1907. Sur la prétendue nocivité des Huitres. *Bull. Sci. France Belg.* 39: 189-226.
- GINESTE, CH.
1925. Maladie de la coquille chez les Mollusques de culture; le cas de la Gryphée. *Compt. Rend. Séances Soc. Biol.* 93: 125-127.
- GROSS, F., and J. C. SMTYH.
1946. The decline of oyster populations. *Nature (London)* 157: 540-542.
- GUILLARD, ROBERT R. L.
1959. Further evidence of the destruction of bivalve larvae by bacteria. *Biol. Bull. (Woods Hole)* 117: 258-266.
- HAIGLER, SARAH A.
1964. A histochemical and cytological study of the "brown cells" found in the "auricular pericardial gland" and other tissues of the oyster, Crassostrea virginica (Gmelin). Thesis, M.S., Univ. Del., Newark, Del., 51 pp.
- HASKIN, HAROLD H.
1961. Delaware Bay oyster mortalities. *Proc. Gulf Carib. Fish. Inst., 13th Annu. Sess.:* 109. [Abstract.]
1962. The current research program of the Oyster Research Laboratory. *Proc. 1st Nat. Coastal Shallow Water Res. Conf.:* 207-209.

- HASKIN, HAROLD H.
1966. Recent observations on "MSX" in Delaware Bay. Proc. Nat. Shellfish. Ass. 56: 4. [Abstract.]
- HASKIN, HAROLD H., WALTER J. CANZONIER, and JOHN L. MYHRE.
1965. The history of "MSX" on Delaware Bay oyster grounds, 1957-1965. Amer. Malacol. Un., Bull. 32: 20-21. [Abstract.]
- HASKIN, HAROLD H., LESLIE A. STAUBER, and JOHN G. MACKIN.
1966. *Minchinia nelsoni* n. sp. (Haplosporida, Haplosporidiidae): causative agent of the Delaware Bay oyster epizootic. Science 153: 1414-1416.
- HASWELL, W. A.
1885. On a destructive parasite of the rock oyster. Linnean Soc., New South Wales, Proc. 10: 273-275.
- HATT, PIERRE.
1931. L'évolution des Porosporides chez les Mollusques. Arch. Zool. Exp. Gén. 72: 341-415.
- HAVEN, DEXTER.
1959. Effects of pea crabs *Pinnotheres ostreum* on oysters *Crassostrea virginica*. Proc. Nat. Shellfish. Ass. 49: 77-86.
- HEPPER, B. T.
1956. The European flat oyster, *Ostrea edulis* L., as a host for *Mytilicola intestinalis* Steuer. J. Anim. Ecol. 25: 144-147.
- HERDMAN, W. A.
1896. Investigations on oysters and disease. Proc. Trans. Liverpool Biol. Soc. 10: 158-177.
1903. The pearl-oyster parasite in Ceylon. Nature (London) 69: 126-127.
- HARDMAN, W. A., and RUBERT W. BOYCE.
1899a. Oysters and disease. Nature (London) 59: 305-306.
1899b. Oysters and disease. An account of certain observations upon the normal and pathological histology and bacteriology of the oyster and other shellfish. Lancashire Sea-fish. Mem. 1. George Philip & Son, London, 60 pp.
- HERDMAN, W. A., and JAMES HORNELL.
1906. Pearl production. In W. A. Herdman, Report to the Government of Ceylon on the pearl oyster fisheries of the Gulf of Manaar, part V, pp. 1-42. Royal Society, London.
- HEWATT, WILLIS G., and JAY D. ANDREWS.
1954a. Mortalities of oysters in trays at Gloucester Point, York River, Virginia. Conv. Add. Nat. Shellfish. Ass. 1953: 78. [Abstract.]
1954b. Oyster mortality studies in Virginia. I. Mortalities of oysters intrays at Gloucester Point, York River. Tex. J. Sci. 6: 121-133.
- HEWATT, WILLIS G., and JAY D. ANDREWS.
1956. Temperature control experiments on the fungus disease, *Dermocystidium marinum*, of oysters. Proc. Nat. Shellfish. Ass. 46: 129-133.
- HIDU, HERBERT, and HASKELL S. TUBIASH.
1966. A bacterial basis for the growth of antibiotic-treated bivalve larvae. Proc. Nat. Shellfish. Ass. 54: 25-39.
- HOESE, H. DICKSON.
1963. Absence of *Dermocystidium marinum* at Port Aransas, Texas, with notes on an apparent inhibitor. Tex. J. Sci. 15: 98-103.
1964. Studies on oyster scavengers and their relation to the fungus *Dermocystidium marinum*. Proc. Nat. Shellfish. Ass. 53: 161-174.
- HOGUE, MARY J.
1914. Studies in the life history of an amoeba of the Limax group, *Vahlkampfia calkensi*. Arch. Protistenk. 35: 153-163.
1921. Studies on the life history of *Vahlkampfia patuxent*, n. sp., parasitic in the oyster, with experiments regarding its pathogenicity. Amer. J. Hyg. 1: 321-345.
- HOPKINS, SEWELL H.
1954. The American species of trematode confused with *Bucephalus* (*Bucephalopsis*) *haimeanus*. Parasitology 44: 353-370.
1956. *Odostomia impressa* parasitizing southern oysters. Science 124: 628-629.
1957a. Interrelations of organisms. B. Parasitism. In J. W. Hedgpeth (editor), Treatise on marine ecology and paleoecology, vol. 1, Ecology, ch. 15, pp. 413-428. Geol. Soc. Amer., Mem. 67.
1957b. Our present knowledge of the oyster parasite "*Bucephalus*." Proc. Nat. Shellfish. Ass. 47: 58-61.
- HORNELL, JAMES.
1910. The practice of oyster culture at Arcachon and its lessons for India. Madras Fish. Bur., vol. 2, Bull. 5, 90 pp.
1941. The causation of pearl formation in *Pinctada vulgaris*. Linnean Soc., London, Proc. 153: 144-149.
- HUET, M.
1889. Note sur le *Bucephalus haimeanus*. Bull. Soc. Linnéenne Normandie 2: 145-149.
- IMAI, TAKEO, KENICHI NUMACHI, JUICHI OISUMI, and SHIGERU SATO.
1965. Studies on the mass mortality of the oyster in Matsushima Bay. II. Search for the cause of mass mortality and the possibility to prevent it by transplantation experiment. Bull. Tohoku Reg. Fish. Res. Lab. 25: 27-38. [In Japanese with English summary.]
- JAMES, M. C.
1946. Oyster mortality high in Chesapeake Bay. South. Fisherman 6(6): 67.

- JAMESON, H. LYSTER.
1912. Studies on pearl-oysters and pearls.--I. The structure of the shell and pearls of the Ceylon pearl-oyster (Margaritifera vulgaris Schumacher); with an examination of the cestode theory of pearl production. Proc. Zool. Soc. London 1912: 260-358.
- JOHNSON, T.
1894. Some shell-boring algae. Natur. Sci. 5: 17-20.
- JOHNSTONE, JAMES.
1921. The oyster parasite, Bucephalus haimeanus. Proc. Trans. Liverpool Biol. Soc. 36: 50.
- KAN-NO, HISASHI, MINORU SASAKI, YASUO SAKUPAI, TSUYOHI WATANABE, and KENZO SUZUKI.
1965. Studies on the mass mortality of the oyster in Matsushima Bay. I. General aspects of the mass mortality of the oyster in Matsushima Bay and its environmental conditions. Bull. Tohoku Reg. Fish. Res. Lab. 25: 1-26. [In Japanese with English summary.]
- KAVANAGH, L. D.
1940. Mud blisters in Japanese oysters imported to Louisiana. La. Conserv. Rev., Autumn 1940: 30-34.
1941. Reactions of American and imported oysters to an annelid worm. J. Tenn. Acad. Sci. 16: 354.
- KESTEVEN, G. L.
1947. Biology and cultivation of oysters. Fish. Newsletter, Australia June 1947: 4-5, 16. [Condensed from pamphlet with the same title.]
- KÖLLIKER, A.
1859. On the frequent occurrence of vegetable parasites in the hard structures of animals. Proc. Roy. Soc. London 10: 95-99.
- KORRINGA, P.
1947. Les vicissitudes de l'ostréiculture Hollandaise élucidées par la science ostréicole moderne. Ostréiculture-Cult. Mar., Paris 16(3): 3-9.
1948. Shell disease in Ostrea edulis--its dangers, its cause, its control. Conv. Add. Nat. Shellfish. Ass. 1948: 86-94.
1949. Nieuwe aanwijzingen voor de bestrijding van slipper en schelpziekte. Visserij-Nieuws 2: 90-94.
1951a. Investigations on shell-disease in the oyster, Ostrea edulis L. Cons. Perma. Int. Explor. Mer, Rapp. Proc.-Verb. Réunion. 128(2): 50-54.
1951b. On the nature and function of "chalky" deposits in the shell of Ostrea edulis Linnaeus. Proc. Calif. Acad. Sci. Ser. 4, 27: 133-158.
1951c. The shell of Ostrea edulis as a habitat. Arch. Neer. Zool. 10: 32-152.
- KORRINGA, P.
1951d. Voorzetting van de strijd tegen de schelpziekte in de oesters. Visserij-Nieuws 3 (12, Suppl.), 8 pp.
1952. Recent advances in oyster biology. Quart. Rev. Biol. 27: 266-308; 339-365.
- KUDO, RICHARD R.
1966. Protozoology. 5th ed. C. C. Thomas, Springfield, Ill., 1174 pp.
- LACAZE-DUTHIERS, H.
1854. Mémoire sur le Bucephalus Haimeanus, Helminthe parasite des Huitres et des Bucardes. Ann. Sci. Natur. Zool., Ser. 4, 1: 294-302.
- LAIRD, MARSHALL.
1961. Microecological factors in oyster epizootics. Can. J. Zool. 39: 449-485.
- LANDAU, HELEN, and PAUL S. GALTSOFF.
1951. Distribution of Nematopsis infection on the oyster grounds of the Chesapeake Bay and in other waters of the Atlantic and Gulf States. Tex. J. Sci. 3: 115-130.
- LAVERAN, A., and F. MESNIL.
1901. Sur la nature bactérienne du prétendu Trypanosome des Huitres (Tryp. Balbianii Certes). Compt. Rend. Séances Soc. Biol. 53: 883-885.
- LÉGER, LOUIS, and A.-CH. HOLLANDE.
1917. Sur un nouveau protiste a facies de Chytridiopsis, parasite des ovules de l'Huitre. Compt. Rend. Séances Soc. Biol. 80: 61-64.
- LELOUP, EUGENE.
1937. Contributions à l'étude de la faune belge. VIII. Les dégâts causés par le ver polychete Polydora ciliata (Johnston) dans les coquilles des bigorneaux et des huitres. Bull. Mus. Roy. Hist. Natur. Belg. 13(33): 1-4.
- LITTLE, JOHN W., SEWELL H. HOPKINS, and FRANK G. SCHLICHT.
1966. Acanthoparyphium spinulosum (Trematoda: Echinostomatidae) in oysters at Port Isabel, Texas. J. Parasitol. 52: 663.
- LOGIE, R. REED.
1956. Oyster mortalities old and new, in the Maritimes. Fish. Res. Bd. Can., Progr. Rep. Atl. Coast Sta. 65: 3-11.
1958a. Epidemic oyster disease and rehabilitation transfers in 1957. Fish. Res. Bd. Can., Gen. Ser. Circ. Biol. Sta. St. Andrews, N. B. 31, 2 pp.
1958b. Epidemic diseases in Canadian Atlantic oysters. (Crassostrea virginica). Thesis, Ph.D., Rutgers Univ., New Brunswick, N.J., 143 pp.
- LOGIE, R. REED, ROY E. DRINNAN, and E. B. HENDERSON.
1960. Rehabilitation of disease-depleted oyster populations in eastern Canada. Proc. Gulf Carib. Fish. Inst. 13th Annu. Sess.: 109-113.

- LOOSANOFF, VICTOR L.
1956. Two obscure oyster enemies in New England waters. *Science* 123: 1119-1120.
- LOOSANOFF, VICTOR L., and HARRY C. DAVIS.
1963. Rearing of bivalve mollusks. *Advan. Mar. Biol.* 1: 1-136.
- LOOSANOFF, VICTOR L., and JAMES B. ENGLE.
1943. *Polydora* in oysters suspended in the water. *Biol. Bull. (Woods Hole)* 85: 69-78.
1947. Effect of different concentrations of micro-organisms on the feeding of oysters (*O. virginica*). *U.S. Fish Wildl. Serv., Fish. Bull.* 51: 31-57.
- LUNZ, G. ROBERT.
1940. The annelid worm, *Polydora*, as an oyster pest. *Science* 92: 310.
1941. *Polydora*, a pest in South Carolina oysters. *J. Elisha Mitchell Sci. Soc.* 57: 273-283.
- MACKIN, JOHN G.
1951a. Histopathology of infection of *Crassostrea virginica* (Gmelin) by *Dermocystidium marinum* Mackin, Owen, and Collier. *Bull. Mar. Sci. Gulf Carib.* 1: 72-87.
1951b. Diseases of oysters and their relation to the Gulf coast oyster industry. *Proc. Gulf Carib. Fish. Inst.* 3d Annu. Sess.: 24. [Abstract.]
1953. Incidence of infection of oysters by *Dermocystidium* in the Barataria Bay area of Louisiana. *Conv. Add. Nat. Shellfish. Ass.* 1951: 22-35.
1956. *Dermocystidium marinum* and salinity. *Proc. Nat. Shellfish. Ass.* 46: 116-128.
1961a. A method of estimation of mortality rates in oysters. *Proc. Nat. Shellfish. Ass.* 50: 41-51.
1961b. Mortalities of oysters. *Proc. Nat. Shellfish. Ass.* 50: 21-40.
1961c. Oyster leucocytes in infectious disease. *Amer. Zool.* 1: 371. [Abstract.]
1961d. Status of researches on oyster diseases in North America. *Proc. Gulf Carib. Fish. Inst.* 13th Annu. Sess.: 98-109.
1962. Oyster diseases caused by *Dermocystidium marinum* and other micro-organisms in Louisiana. *Publ. Inst. Mar. Sci. Univ. Tex.* 7: 132-229.
- MACKIN, JOHN G., and J. L. BOSWELL.
1956. The life cycle and relationships of *Dermocystidium marinum*. *Proc. Nat. Shellfish. Ass.* 46: 112-115.
- MACKIN, JOHN G., and FRED F. CAUTHRON.
1952. Effect of heavy infestations of *Polydora websteri* Hartman on *Crassostrea virginica* (Gmelin) in Louisiana. *Conv. Add. Nat. Shellfish. Ass.* 1952: 14-24.
- MACKIN, JOHN G., and HAROLD LOESCH.
1955. A haplosporidian hyperparasite of oysters. *Proc. Nat. Shellfish. Ass.* 45: 182-183.
- MACKIN, JOHN G., and SAMMY M. RAY.
1955. Studies of the effect of infection by *Dermocystidium marinum* on ciliary action in oysters (*Crassostrea virginica*). *Proc. Nat. Shellfish. Ass.* 45: 168-181.
1966. The taxonomic relationships of *Dermocystidium marinum*, Mackin, Owen, and Collier. *J. Invert. Pathol.* 8: 544-545.
- MACKIN, JOHN G., P. KORRINGA, and SEWELL H. HOPKINS.
1952. Hexamitiasis of *Ostrea edulis* L. and *Crassostrea virginica* (Gmelin). *Bull. Mar. Sci. Gulf Carib.* 1: 266-277.
- MACKIN, JOHN G., H. MALCOLM OWEN, and ALBERT COLLIER.
1950. Preliminary note on the occurrence of a new protistan parasite, *Dermocystidium marinum* n. sp. in *Crassostrea virginica* (Gmelin). *Science* 111: 328-329.
- MCCRADY, JOHN.
1874. Observations on the food and reproductive organs of *Ostrea virginiana*, with some account of *Bucephalus cuculus* nov. sp. *Proc. Boston Soc. Natur. Hist.* 16: 170-192.
- MEDCOF, J. C.
1946. The mud-blister worm, *Polydora*, in Canadian oysters. *J. Fish. Res. Bd. Can.* 6: 498-505.
1959. Studies on stored oysters (*Crassostrea virginica*). *Proc. Nat. Shellfish. Ass.* 49: 13-28.
- MENZEL, R. WINSTON, and SEWELL H. HOPKINS.
1955a. Effects of two parasites on the growth of oysters. *Proc. Nat. Shellfish. Ass.* 45: 184-186.
1955b. The growth of oysters parasitized by the fungus *Dermocystidium marinum* and by the trematode *Bucephalus cuculus*. *J. Parasitol.* 41: 333-342.
- MILLAR, R. H.
1963. Oysters killed by trematode parasites. *Nature (London)* 197: 616.
- MONOD, THÉODORE, and ROBERT PH. DOLLFUS.
1932. Les Copépodes parasites de Mollusques. *Ann. Parasitol. Hum. Comp.* 10: 129-204.
- MONTAGUÉ, de [Frères]
1878. Études pratiques sur les ennemis et les maladies de l'huitre dans le bassin d'Arcachon. *Soc. Linnéenne Bordeaux, Actes, Ser. 4, 2: 217-245.*
- MOORE, H. F.
1898. Oysters and methods of oyster-culture. *Rep. U.S. Comm. Fish.* 23: 263-338.

- MORI, KATSUYOSHI, TAKEO IMAI, KIYOAKI TOYOSHIMA, and ITARU USUKI.
1965. Studies on the mass mortality of the oyster in Matsushima Bay. IV. Changes in the physiological activity and the glycogen content of the oyster during the stages of sexual maturation and spawning. Bull. Tohoku Reg. Fish. Res. Lab. 25: 49-63. [In Japanese with English summary.]
- MORI, KATSUYOSHI, HIDEO TAMATE, TAKEO IMAI, and OSAMU ITIKAWA.
1965. Studies on the mass mortality of the oyster in Matsushima Bay. V. Changes in the metabolism of lipids and glycogen of the oyster during the stages of sexual maturation and spawning. Bull. Tohoku Reg. Fish. Res. Lab. 25: 65-88. [In Japanese with English summary.]
- MORI, TAKAMOCHI.
1935. Mytilicola orientalis, a new species of parasitic Copepoda. Zool. Mag. (Tokyo) 47: 687-693. [In Japanese with English summary.]
- MOROFF, T.
1903. Beitrag zur Kenntnis einiger Flagellaten. Arch. Protistenk. 3: 69-106.
- MORTON, J. E.
1958. Molluscs. Hutchinson University Library, London, 232 pp.
- MYHRE, JOHN L.
1966. Some histochemical observations on "MSX." Proc. Nat. Shellfish. Ass. 56: 5-6. [Abstract.]
- NEEDLER, A. B.
1932. A disease found in the oysters of Malpeque Bay. Rep. Biol. Bd. Can. 1931: 35-36.
1941. Oyster farming in eastern Canada. Fish. Res. Bd. Can., Bull. 60, 83 pp.
- NEEDLER, ALFREDA W. H.
1931. Disappearance and return of Malpeque oysters. Fish. Res. Bd. Can., Progr. Rep. Atl. Coast Sta. 2: 9-11.
- NEEDLER, ALFREDA W. H., and R. REED LOGIE.
1947. Serious mortalities in Prince Edward Island oysters caused by a contagious disease. Trans. Roy. Soc. Can., Ser. III, sect. 5, 41: 73-89.
- NELSON, JULIUS.
1891. Report of the biologist for 1890. N.J. State Agric. Exp. Sta., 11th Annu. Rep.: 255, 303-305, 315.
- NELSON, THURLOW C.
1926. Parasitism of the oyster by the goby. Anat. Rec. 34: 164-165. [Abstract.]
- NELSON, THURLOW C., and LESLIE A. STAUBER.
1940. Observations of some common polychaetes on New Jersey oyster beds with especial reference to Polydora. Anat. Rec. 78: 102-103. [Abstract.]
- NOGUCHI, HIDEYO.
1921. Cristispira in North American shellfish. A note on a Spirillum found in oysters. J. Exp. Med. 34: 295-315.
- NUMACHI, KENICHI, JUICHI OISUMI, SHIGERU SATO, and TAKEO IMAI.
1965. Studies on the mass mortality of the oyster in Matsushima Bay. III. The pathological changes of the oyster caused by gram-positive bacteria and the frequency of their infection. Bull. Tohoku Reg. Fish. Res. Lab. 25: 39-47. [In Japanese with English summary.]
- ODLAUG, THERON O.
1946. The effect of the copepod, Mytilicola orientalis, upon the Olympia oyster, Ostrea lurida. Trans. Amer. Microscop. Soc. 65: 311-317.
- OGASAWARA, YOSHIMITSU, UTAO KOBAYASHI, RYO OKAMOTO, ATSUSHI FURUKAWA, MINORU HISAOKA, and KAZUHIKO NOGAMI.
1962. The use of the hardened seed oyster in the culture of the food oyster and its significance to the oyster culture industry. Bull. Naikai Reg. Fish. Res. Lab. 19: 1-153. [In Japanese with English summary.]
- OKA, ASAJIRO.
1927. Sur une nouvelle Ichthyobdellide parasite de l'huitre. Proc. Imp. Acad. (Tokyo) 3: 364-367.
- ORTON, J. H.
1924a. An account of investigations into the cause or causes of the unusual mortality among oysters in English oyster beds during 1920 and 1921, part I. Min. Agric. Fish., Fish. Invest., London, Ser. 2, 6(3): 1-199.
1924b. An account of investigations into the cause or causes of the unusual mortality among oysters in English oyster beds during 1920 and 1921, part II. Appendix A, Interim report on oyster mortality investigations, 1920. Min. Agric. Fish., Fish. Invest., London, Ser. 2, 6(4): 3-14.
1937. Oyster biology and oyster culture. Buckland Lectures for 1935. Edward Arnold, London, 211 pp.
- OWEN, H. MALCOLM.
1955. Oyster industry of Louisiana. Rep. Dep. Wild Life Fish., La., 1955, 387 pp.
1957. Etiological studies on oyster mortality. II. Polydora websteri Hartmann--(Polychaeta: Spionidae). Bull. Mar. Sci. Gulf Carib. 7: 35-46.
- OWEN, H. MALCOLM, LESTER L. WALTERS, and LOUIS A. BREGAN.
1951. Etiological studies on oyster mortality. I. Nematopsis ostrearum Prytherch, 1940 (Sporozoa: Porosporidae). J. Mar. Res. 10: 82-90.

- OZAKI, YOSHIMAZA, and CHUJI ISHIBASHI.
1934. Notes on the cercaria of the pearl oyster. Proc. Imp. Acad. (Tokyo) 10: 439-441.
- PAULEY, GILBERT B.
1965. Observations on the acute inflammatory reaction and the wound repair process in the Pacific oyster, Crassostrea gigas (Thunberg). Thesis, M.S., Univ. Washington, Seattle, Wash., 65 pp.
- PAULEY, GILBERT B., and ALBERT K. SPARKS.
1965. Preliminary observations on the acute inflammatory reaction in the Pacific oyster, Crassostrea gigas (Thunberg). J. Invert. Pathol. 7: 248-256.
1966. The acute inflammatory reaction in two different tissues of the Pacific oyster, Crassostrea gigas. J. Fish. Res. Bd. Can. 23: 1913-1921.
- PEARSE, A. S., and G. W. WHARTON.
1938. The oyster "leech," Stylochus inimicus Palombi, associated with oysters on the coasts of Florida. Ecol. Monogr. 8: 605-655.
- PELSENEER, PAUL.
1928. Les parasites des Mollusques et les Mollusques parasites. Bull. Soc. Zool. France 53: 158-189.
1929. Copépodes parasites de Mollusques. Ann. Soc. Roy. Zool. Belg. 59: 33-49.
- PEREYRA, WALTER T.
1964. Mortality of Pacific oysters, Crassostrea gigas (Thunberg), in various exposure situations in Washington. Proc. Nat. Shellfish. Ass. 53: 51-63.
- PERKINS, FRANK O., and R. WINSTON MENZEL.
1966. Morphological and cultural studies of a motile stage in the life cycle of Dermocystidium marinum. Proc. Nat. Shellfish. Ass. 56: 23-30.
- PETTIT, A.
1921a. Mycose de l'Huître comestible. Bull. Soc. Cent. Aquiculture Pêche 28: 31.
1921b. [Observations à propos de la note de R. Dollfus.] Compt. Rend. Seances Biol. 85: 451-452.
- POISSON, R.
1946. Huîtres et ostréiculture a Madagascar. Étude zoologique et économique. Trav. Sec. Oceanogr. Appl. Soc. Amis Parc Bot. Zool. Tananariva 3: 1-37.
- PROVENZANO, ANTHONY J., JR.
1961. Effects of the flatworm Stylochus ellipticus (Girard) on oyster spat in two salt water ponds in Massachusetts. Proc. Nat. Shellfish. Ass. 50: 83-88.
- PRYTHERCH, HERBERT F.
1938. Life-cycle of a sporozoan parasite of the oyster. Science 88: 451-452.
1940. The life cycle and morphology of Nematopsis ostrearum, sp. nov., a gregarine parasite of the mud crab and oyster. J. Morphol. 66: 39-65.
- 1946a. New oyster parasite threat. Fish. Gaz. 63(7): 42-43.
1946b. Chemical control of oyster parasite. Atl. Fish. 27(10): 19, 34.
- RANSON, GILBERT.
1936. Sur quelques maladies des Huîtres. Rev. Pathol. Comp. Hyg. Gén. 475: 506-526.
- RAY, SAMMY M.
1952a. A culture technique for the diagnosis of infection with Dermocystidium marinum in oysters. Conv. Add. Nat. Shellfish. Ass. 1952: 9-13.
1952b. A culture technique for the diagnosis of infections with Dermocystidium marinum Mackin, Owen, and Collier in oysters. Science 116: 360-361.
1952c. Cultural studies of Dermocystidium marinum with special references to diagnosis of this parasite in oysters. Thesis, M.A., Rice Institute, Houston, Tex., 24 pp.
1954a. Biological studies of Dermocystidium marinum, a fungus parasite of oysters. Rice Inst. Pamph., Spec. Issue, Nov. 1954, Monogr. Biol., 114 pp.
1954b. Experimental studies on the transmission and pathogenicity of Dermocystidium marinum, a fungous parasite of oysters. J. Parasitol. 40: 235.
1954c. Studies on the occurrence of Dermocystidium marinum in young oysters. Conv. Add. Nat. Shellfish. Ass. 1953: 80-92.
1966a. Notes on the occurrence of Dermocystidium marinum on the Gulf of Mexico coast during 1961 and 1962. Proc. Nat. Shellfish. Ass. 54: 45-54.
1966b. A review of the culture method for detecting Dermocystidium marinum, with suggested modifications and precautions. Proc. Nat. Shellfish. Ass. 54: 55-69.
- RAY, SAMMY M., and ASA C. CHANDLER.
1955. Dermocystidium marinum, a parasite of oysters. Exp. Parasitol. 4: 172-200.
- RAY, SAMMY M., and JOHN G. MACKIN.
1955. Studies of pathogenesis of Dermocystidium marinum. Proc. Nat. Shellfish. Ass. 45: 164-167.
- RAY, SAMMY M., JOHN G. MACKIN, and JAMES L. BOSWELL.
1953. Quantitative measurement of the effect on oysters of disease caused by Dermocystidium marinum. Bull. Mar. Sci. Gulf Carib. 3: 6-33.
- RICHARDSON, L. R.
1938. Report on preliminary study of the endozoan fauna of oysters from Malpeque and Charlottetown waters. Fish. Res. Bd. Can., Ms. Rep. 147, 3 pp.

- [Fish. Res. Bd. Can. Biol. Sta., St. Andrews, N.B.]
- ROSENFELD, AARON.
1964. Studies of oyster microparasites. U.S. Fish Wildl. Serv., Circ. 200: 30-37.
- ROSENFELD, AARON, and CARL J. SINDERMANN.
1966. The distribution of "MSX" in middle Chesapeake Bay. Proc. Nat. Shellfish. Ass. 56: 6. [Abstract.]
- ROUGHLEY, T. C.
1922. Oyster culture on the George's River, New South Wales. Technol. Mus., Sydney, Australia, Tech. Educ. Ser. 25, 69 pp.
1925. The story of the oyster, its history, growth, cultivation and pests in New South Wales. Australian Mus. Mag. 2: 3-32.
1926. An investigation of the cause of an oyster mortality on the George's River, New South Wales, 1924-5. Linnean Soc., New South Wales, Proc. 51: 445-491.
1933. The life history of the Australian oyster (Ostrea commercialis). Linnean Soc., New South Wales, Proc. 58: 279-333.
- RYDER, JOHN A.
1883. The protozoan parasites of the oyster. Science 1: 567-568.
1886. On a tumor in the oyster. Acad. Natur. Sci., Philadelphia, Proc. 44: 25-27.
- SAKAGUCHI, SEIJI.
1962. Studies on a trematode parasitic on pearl oyster. I. On the encystation of cercaria, Bucephalus margaritae. Bull. Nat. Pearl Res. Lab., Kashikojima, Mie Prefecture, 8: 1060-1063. [In Japanese.]
1964. Studies on a trematode parasite of pearl oyster. II. Its effects on pearl oyster as the first intermediate host. Bull. Nat. Pearl Res. Lab., Kashikojima, Mie Prefecture, 9: 1161-1169. [In Japanese with English summary.]
1965. Studies on a trematode parasite on the pearl oyster (Pinctada martensii), V. Development of its cercaria in the first intermediate host. Bull. Nat. Pearl Res. Lab., Kashikojima, Mie Prefecture, 10: 1244-1253. [In Japanese with English summary.]
1966a. Studies on a trematode parasite of the pearl oyster, Pinctada martensii - III. The metacercaria obtained from the second intermediate host artificially infected with the cercaria, Bucephalus margaritae. Bull. Jap. Soc. Sci. Fish. 32: 312-315. [In Japanese with English summary.]
1966b. Studies on a trematode parasite of the pearl oyster, Pinctada martensii - IV. On the Trematoda of genus Bucephalus found in the fishes, Caranx sexfasciatus and C. ignobilis. Bull. Jap. Soc. Sci. Fish. 32: 316-321. [In Japanese with English summary.]
- SANDOZ, MILDRED, and SEWELL H. HOPKINS.
1947. Early life history of the oyster crab, Pinnotheres ostreum (Say). Biol. Bull. (Woods Hole) 93: 250-258.
- SAWYER, THOMAS K.
1966. Observations on the taxonomic status of ameoboid organisms from the American oyster, Crassostrea virginica. J. Protozool. 13(Suppl.): 23. [Abstract.]
- SCHARRER, BERTA, and M. S. LOCHHEAD.
1950. Tumors in the invertebrates: a review. Cancer Res. 10: 403-419.
- SCHELTEMA, RUDOLF S.
1962. The relationship between the flagellate protozoon Hexamita and the oyster Crassostrea virginica. J. Parasitol. 48: 137-141.
- SCHODDUYN, RENÉ.
1927. Observations biologiques marines faites dans un parc à huîtres. Bull. Inst. Océanogr. (Monaco) 24(498), 44 pp.
- SCHUURMANS STEKHOFEN, J. H., JR.
1942. Nematoden und Austern. Zool. Anz. 137: 181-185.
- SCHWARTZ, FRANK J.
1963. A new Ichthyosporidium parasite of the spot (Leiostomus xanthurus): A possible answer to recent oyster mortalities. Progr. Fish-Cult. 25: 181-186.
- SEURAT, L.-G.
1906. Sur un Cestode parasite des Huîtres perlières déterminant la production des perles fines aux îles Gambier. Compt. Rend. Hebd. Séances Acad. Sci., Paris 142: 801-803.
- SHIPLEY, A. E.
1908. Pearls and parasites. Murray, London, 232 pp.
- SHIPLEY, A. E., and JAMES HORNELL.
1904. The parasites of the pearl oyster. In W. A. Herdman, Report to the Government of Ceylon on the pearl oyster fisheries of the Gulf of Manaar, Part II, pp. 77-106. Royal Society, London.
1906. Report on the cestode and nematode parasites from the marine fishes of Ceylon. In W. A. Herdman, Report to the Government of Ceylon on the pearl oyster fisheries of the Gulf of Manaar, part V, pp. 43-96. Royal Society, London.
- SHUSTER, CARL N., JR., and ROBERT E. HILLMAN.
1963. Comments on "Microecological factors in oyster epizootics" by Marshall Laird. Chesapeake Sci. 4: 101-103.
- SINDERMANN, CARL J.
1963. Disease in marine populations. Trans. 28th N. Amer. Wildl. Natur. Resourc. Conf.: 336-356.

- SINDERMANN, CARL J.
 1966a. Parasites of oysters, Crassostrea virginica, from the East Coast of North America. Proc. 1st Int. Congr. Parasitol. 1: 585-586.
 1966b. Epizootics in oyster populations. Proc. 11th Pacific Sci. Congr. (Fisheries Sciences) 7: 9. [Abstract.]
- SIVALINGAM, S.
 1962. Bibliography on pearl oysters. Fish. Res. Sta., Dep. Fish., Ceylon, Bull. 13: 3-21.
- SMITH, G. F. M.
 1934. A mesenchymal tumor in an oyster (Ostrea virginica). Amer. J. Cancer 22: 838-841.
- SOUTHWELL, T.
 1911. Some notes on the Ceylon pearl-inducing worm. Spolia Zeylan. 7: 124-134.
 1912. The Ceylon pearl-inducing worm. A brief review of the work done to date. Parasitology 5: 27-36.
 1924. The pearl-inducing worm in the Ceylon pearl oyster. Ann. Trop. Med. Parasitol. 18: 37-53.
- SPARKS, ALBERT K.
 1962. Metaplasia of the gut of the oyster Crassostrea gigas (Thunberg) caused by infection with the copepod Mytilicola orientalis Mori. J. Insect Pathol. 4: 57-62.
 1963. Infection of Crassostrea virginica (Gmelin) from Hawaii with a larval tapeworm, Tylocephalum. J. Insect Pathol. 5: 284-288.
- SPARKS, ALBERT K., and KENNETH K. CHEW.
 1961. Preliminary report on growth and survival of the Pacific oyster in Washington waters. Proc. Nat. Shellfish. Ass. 50: 125-132.
- SPARKS, ALBERT K., and GILBERT B. PAULEY.
 1964. Studies of the normal postmortem changes in the oyster, Crassostrea gigas (Thunberg). J. Insect Pathol. 6: 78-101.
- SPARKS, ALBERT K., J. L. BOSWELL, and JOHN G. MACKIN.
 1958. Studies on the comparative utilization of oxygen by living and dead oysters. Proc. Nat. Shellfish. Ass. 48: 92-102.
- SPARKS, ALBERT K., GILBERT B. PAULEY, RICHARD R. BATES, and CLYDE S. SAYCE.
 1964a. A mesenchymal tumor in a Pacific oyster, Crassostrea gigas (Thunberg). J. Insect Pathol. 6: 448-452.
 1964b. A tumorlike fecal impaction in a Pacific oyster, Crassostrea gigas (Thunberg). J. Insect Pathol. 6: 453-456.
- SPRAGUE, VICTOR.
 1949. Species of Nematopsis in Ostrea virginica. J. Parasitol. 35(6,Suppl.): 42. [Abstract.]
 1954a. Studies on morphology and life cycle of Nematopsis prytherchi Sprague and N. ostrearum Prytherch, emend. J. Protozool. 1(Suppl.): 4. [Abstract.]
 1954b. Protozoa. In Paul S. Galtsoff (coordinator), Gulf of Mexico, its origin, waters, and marine life, pp. 243-256. U.S. Fish Wildl. Serv., Fish. Bull. 55.
 1963. Revision of genus Haplosporidium and restoration of genus Minchinia (Haplosporidia, Haplosporidiidae). J. Protozool. 10: 263-266.
 1964. Nosema dollfusi n. sp. (Microsporidia, Nosematidae), hyperparasite of Bucephalus cuculus in Crassostrea virginica. J. Protozool. 11: 381-385.
- SPRAGUE, VICTOR, and P. E. ORR, JR.
 1952. Studies on Nematopsis. III. N. ostrearum and N. prytherchi with special reference to host-parasite relation. Conv. Add. Nat. Shellfish. Ass. 1952: 26-43.
 1955. Nematopsis ostrearum and N. prytherchi (Eugregarinina: Porosporidae) with special reference to the host-parasite relations. J. Parasitol. 41: 89-104.
- STAUBER, LESLIE A.
 1945. Pinnotheres ostreum, parasitic on the American oyster, Ostrea (Gryphaea) virginica. Biol. Bull. (Woods Hole) 88: 269-291.
 1950. The fate of india ink injected intracardially into the oyster, Ostrea virginica Gmelin. Biol. Bull. (Woods Hole) 98: 227-241.
 1961. Immunity in invertebrates, with special reference to the oyster. Proc. Nat. Shellfish. Ass. 50: 7-20.
- STEIN, J. E., and JOHN G. MACKIN.
 1955. A study of the nature of pigment cells of oysters and the relation of their numbers to the fungus disease caused by Dermocystidium marinum. Tex. J. Sci. 7: 422-429.
- STEIN, J. E., J. G. DENISON, and JOHN G. MACKIN.
 1961. Hexamita sp. and an infectious disease in the commercial oyster Ostrea lurida. Proc. Nat. Shellfish. Ass. 50: 67-81.
- STEUER, ADOLF.
 1903. Mytilicola intestinalis, n. gen., n. sp. Arb. Zool. Inst. Univ. Wien 15: 1-46.
- STEVENSON, C. H.
 1894. A bibliography of publications in the English language relative to oysters

- and the oyster industry. U.S. Comm. Fish and Fish., part 18, Rep. Comm. 1892, Appendix 3: 305-359.
- TAKATSUKI, S.
1934. On the nature and functions of the amoebocytes of Ostrea edulis. Quart. J. Microscop. Sci. 76: 379-431.
- TAKEUCHI, T., T. MATSUBARA, H. HIROKAWA, and A. TSUKIYAMA.
1955. Bacteriological studies on the unusually high mortality of Ostrea gigas in Hiroshima Bay--I. Bull. Jap. Soc. Sci. Fish. 20: 1066-1070. [In Japanese with English summary.]
1956. Bacteriological studies on the unusually high mortality of Ostrea gigas in Hiroshima Bay--II. Bull. Jap. Soc. Sci. Fish. 21: 1199-1203. [In Japanese with English summary.]
1957. Bacteriological studies on the unusually high mortality of Ostrea gigas in Hiroshima Bay--III. Bull. Jap. Soc. Sci. Fish. 23: 19-23. [In Japanese with English summary.]
- TAKEUCHI, I., Y. TAKEMOTO, and T. MATSUBARA.
1960. Hematological study of bacteria-infected oysters. Rep. Hiroshima Prefect. Fish. Exp. Sta. 22: 1-7. [In Japanese.]
- TAMATE, HIDEO, KENICHI NUMACHI, KATSUYOSHI MORI, OSAMU ITIKAWA, and TAKEO IMAI.
1965. Studies on the mass mortality of the oyster in Matsushima Bay. VI. Pathological studies. Bull. Tohoku Reg. Fish. Res. Lab. 25: 89-104. [In Japanese with English summary.]
- TENNENT, DAVID H.
1905. Feeding experiments for determining the life history of an oyster parasite. Biol. Bull. (Woods Hole) 8: 233-235.
1906. A study of the life history of Bucephalus haimeanus; a parasite of the oyster. Quart. J. Microscop. Sci. n. s. 49: 635-690. [Thesis, Ph.D., Johns Hopkins Univ., Baltimore, Md., 1904.]
- TRIPP, MARENES R.
1958a. Studies on the defense mechanism of the oyster, Crassostrea virginica. Thesis, Ph.D., Rutgers Univ., New Brunswick, N.J., 131 pp.
1958b. Studies on the defense mechanism of the oyster Crassostrea virginica. J. Parasitol. 44 (4, Suppl.): 35. [Abstract.]
1958c. Disposal by the oyster of intracardially injected red blood cells of vertebrates. Proc. Nat. Shellfish. Ass. 48: 143-147.
- TRIPP, MARENES R.
1960. Mechanisms of removal of injected microorganisms from the American oyster, Crassostrea virginica (Gmelin). Biol. Bull. (Woods Hole) 119: 273-282.
1963. Cellular responses of mollusks. Ann. N.Y. Acad. Sci. 113: 467-474.
1966. Hemagglutinin in the blood of the oyster Crassostrea virginica. J. Invert. Pathol. 8: 478-484.
- TUBIASH, HASKELL S., PAUL E. CHANLEY, and EINAR LEIFSON.
1965. Bacillary necrosis, a disease of larval and juvenile bivalve mollusks. I. Etiology and epizootiology. J. Bacteriol. 90: 1036-1044.
- VIVALDI, M., and A. RODELLA.
1905a. Die Austerninfektionen. Hyg. Rundsch. 15: 174-185.
1905b. Le infezioni da ostriche. Policlino 12 (Sez. Prat. 349): 381.
- VOISIN, P.
1931. Biologie ostréicole. La maladie des Huîtres de Zélande. Rev. Trav. Off. Sci. Tech. Pêches Marit. 4: 221-222.
- WARBURTON, F. E.
1958. Control of the boring sponge on oyster beds. Fish. Res. Bd. Can., Progr. Rep. Atl. Coast Sta. 69: 7-11.
- WEBSTER, JOHN R., and ROYSTON Z. MEDFORD.
1961. Flatworm distribution and associated oyster mortality in Chesapeake Bay. Proc. Nat. Shellfish. Ass. 50: 89-95.
- WHITELEGGE, THOMAS.
1890. Report on the worm disease affecting the oysters on the coast of New South Wales. Rec. Australian Mus. 1: 41-54.
1893. History of fisheries of N. S. Wales, with a sketch of laws by which they have been regulated; compiled from official and other authentic sources. Section: Extracts from a report on the worm disease affecting oysters on the coast of New South Wales, pp. 109-115. Sydney, Australia.
- WILSON, CHARLES B.
1938. A new copepod from Japanese oysters transplanted to the Pacific coast of the United States. J. Wash. Acad. Sci. 28: 284-288.
- WILSON, DOUGLAS P.
1928. The larvae of Polydora ciliata Johnston and Polydora hoplura Claparede. J. Mar. Biol. Ass. U.K. n. s. 15: 567-603.
- WOELKE, CHARLES E.
1957. The flatworm Pseudostylochus ostreophagus Hyman, a predator of oysters. Proc. Nat. Shellfish. Ass. 47: 62-67.

- WOOD, JOHN L., and JAY D. ANDREWS.
1962. *Haplosporidium costale* (Sporozoa) associated with a disease of Virginia oysters. *Science* 136: 710-711.
- WOODHEAD, ARTHUR E.
1929. Life history studies on the trematode family *Bucephalidae*. *Trans. Amer. Microscop. Soc.* 48: 256-275.
1930. Life history studies on the trematode family *Bucephalidae*, No. II. *Trans. Amer. Microscop. Soc.* 49: 1-17.
- YONGE, C. M.
1960. *Oysters*. Collins, London, 209 pp.
- ZOBELL, CLAUDE E.
1946. *Marine microbiology*. Chronica Botanica Co., Waltham, Mass., 240 pp.

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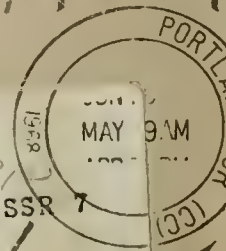
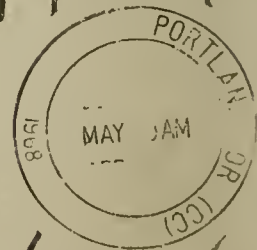
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