

79-03

A LIST OF ARTICLES USEFUL IN THE SEARCH FOR BIOLOGICAL EVIDENCE  
OF DRIFT ACROSS GEORGES BANK AND NANTUCKET SHOALS FROM THE GULF  
OF MAINE REGION TO THE MIDDLE ATLANTIC BIGHT REGION

by

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1. Beardsley, R.C., W.C. Boicourt and D.V. Hansen. 1976. Physical Oceanography of the Middle Atlantic Bight. The American Society of Limnology and Oceanography, Inc. Special Symposium. Vol. 2: 20-34.

This paper includes a discussion of the relation of inertial energy to subtidal currents in shelf water as opposed to slope water, an explanation of why the intense winter low pressure systems cause the development of strong, coherent alongshore currents and shelf water - slope water exchange. One interesting conclusion drawn by the authors was that much of the shelf water observed flowing westward south of New England must originate in the Gulf of Maine - Georges Bank Area.

2. Bigelow, H.B. 1926. Plankton of the offshore waters of the Gulf of Maine. Bulletin of the U.S. Bureau of Fisheries, 40 (2): 1-509.
3. Bigelow, H.B. 1927. Physical oceanography of the Gulf of Maine. Bulletin of the U.S. Bureau of Fisheries, 40(2): 511-1027.

A very complete description of all of the important physical phenomena of the Gulf of Maine with explanations of seasonal changes and observed year to year fluctuations.

4. Bigelow, H.B., and M. Sears. 1939. Studies of the waters on the Continental Shelf, Cape Cod to Chesapeake Bay. III. A volumetric study of the zooplankton. Memoirs of the Museum of Comparative Zoology at Harvard College, 54(4): 183-378.
5. Bumpus, D.F. 1973. A description of the circulation on the Continental Shelf of the east coast of the U.S. Progr. Oceanogr. 6(4): 111-157. Appendix.
6. Bumpus, D.F. 1976. Review of the physical oceanography of Georges Bank. ICNAF Research Bulletin. 12: 119-134.

A very clear, concise article which summarizes the physical oceanography of Georges Bank beautifully.

7. Chase, J. 1955. Winds and temperatures in relation to the brood-strength of Georges Bank haddock. Conseil Permanent International pour l'Exploration de la Mer, Journal du Conseil, 21(1): 17-24.

In this paper, the author presents an empirical formula for predicting the brood strength of Georges Bank haddock which uses geostrophic wind data from February through April and Nantucket winter air temperatures. The brood strength estimate was based on the commercial catch of 3-year-old haddock. For the most part, there is good agreement between the actual and indicated brood strength data for a 23 year period.

8. Clarke, G.L., E. L. Pierce and D. F. Bumpus. 1943. The distribution and reproduction of Sagitta elegans on Georges Bank in relation to hydrographical conditions. Biological Bulletin, 85(3): 201-226.

This paper briefly summarizes the general hydrographical conditions of Georges Bank and relates these conditions to the distribution of the chaetognath, Sagitta elegans. Horizontal distribution was found to be

related to the boundaries of the mixed area, with the highest concentrations of Sagitta elegans being found within the central homogenous water mass of the bank throughout the year. The authors carefully outline the life cycle of Sagitta elegans as observed on Georges Bank. It was noted that length measurements alone cannot be used to indicate the breeding periods. The distribution of Sagitta elegans was compared to that of two species of copepods, Calanus finmarchicus and Pseudocalanus minutus. In conclusion, the authors recommended Sagitta elegans as a useful indicator for tracing movements of mixed area water.

9. Colton, J.B., Jr. 1955. Spring and summer distribution of haddock on Georges Bank. U.S. Fish and Wildlife Service, Special Scientific Report - Fisheries No. 156, 65 p.
10. Colton, J.B., Jr. 1961. The distribution of eyed flounder and lanternfish larvae in the Georges Bank area. *Copeia*, 1961, No. 3: 274-279.
11. Colton, J.B., Jr. 1964. History of oceanography in the offshore waters of the Gulf of Maine. U.S. Fish and Wildlife Service, Special Scientific Report - Fisheries No. 496, 18 p.

An excellent outline of most of the major papers written about the Gulf of Maine region. A very useful bibliography is included.

12. Colton, J.B., Jr. 1969. A field observation of mortality of marine fish larvae due to warming. *Limnology and Oceanography*, 4: 219-222.
13. Colton, J.B., Jr., and R. F. Temple. 1961. The enigma of Georges Bank spawning. *6(3)*: 280-291.
14. Colton, J. B. Jr., R. F. Temple and K.A. Honey. 1962. The occurrence of oceanic copepods in the Gulf of Maine - Georges Bank area. *Ecology*. 43(1): 166-171.
15. Cox, J. and P. H. Wiebe. 1979. Origins of oceanic plankton in the Middle Atlantic Bight. In press.

The authors discuss the origins of exponential species of zooplankton which are found in the Middle Atlantic Bight region. The Arctic - Boreal species are derived from shelf water northeast of Cape Cod, while the tropical-subtropical species typically found in the Gulf Stream and Sargano Sea are derived from warm core Gulf Stream rings.

16. Fish, C.J. 1925. Seasonal distribution of the plankton of the Woods Hole region. *Bulletin of the U.S. Bureau of Fisheries*, 41: 91-179.
17. Grant, G.C. 1977. Middle Atlantic Bight zooplankton: seasonal bongo and neuston collections along a transect off southern New Jersey. Special Report in Applied Marine Science and Ocean Engineering No. 173, Virginia Institute of Marine Science.

18. Marak, R.F. 1960. Food habits of larval cod, haddock and coalfish in the Gulf of Maine and Georges Bank area. Conseil Permanent International pour l'Exploration de la Mer, Journal du Conseil, 25(2): 147-157.
19. Marak, R.F., and J. B. Colton, Jr. 1961. Distribution of fish eggs and larvae, temperature, and salinity in the Georges Bank - Gulf of Maine area, 1953. U.S. Fish and Wildlife Service, Special Scientific Report - Fisheries No. 398, 61 p.
20. Marak, R.R., J.B. Colton, Jr., and D. B. Foster. 1962. Distribution of fish eggs and larvae, temperature, and salinity in the Georges Bank - Gulf of Maine area, 1955. U. S. Fish and Wildlife Service, Special Scientific Report - Fisheries No. 411, 66 p.
21. Marak, R.R., J.B. Colton, Jr., D. B. Foster, and D. Miller. 1962. Distribution of fish eggs and larvae, temperature, and salinity in the Georges Bank - Gulf of Maine area, 1956. U.S. Fish and Wildlife Service, Special Scientific Report - Fisheries No. 412, 95 p.
22. Redfield, A.C. 1939. The history of a population of Limacina retroversa during the drift across the Gulf of Maine. Biological Bulletin. 76(1): 26-47.

A description of how two homogenous boreal populations of these pteropods were introduced into the Gulf of Maine from the east and were transported westward by the cyclonic drift of Gulf water. Redfield points out that although Limacina retroversa thrives and reproduces in the Gulf of Maine, it is not an endemic species. The discontinuous character of the invasions accounted for the irregularity in occurrence of this species.

23. Redfield, A.C., and A. Beale. 1940. Factors determining the distribution of populations of chaetognaths in the Gulf of Maine. Biological Bulletin, 79(3): 459-487.
24. Riley, G.A. 1941. Plankton studies. IV. Georges Bank. Bulletin of the Bingham Oceanographic Collection. 7(4): 1-73.
25. Riley, G.A. 1946. Factors controlling phytoplankton populations on Georges Bank. Journal of Marine Research. 6(1): 54-73.
26. Riley, G.A. 1947. A theoretical analysis of the zooplankton population of Georges Bank. Journal of Marine Research. 6(2): 104-113.
27. Riley, G.A., and D. F. Bumpus. 1946. Phytoplankton-zooplankton relationships on Georges Bank. Journal of Marine Research, 6(1): 33-47.
28. Schnack, D., and W. T. Stobo. Ms 1973. ICNAF joint larval herring survey in Georges Bank - Gulf of Maine areas in 1972 - preliminary summary. Annu. Meet. Int. Comm. Northw. Atlant. Fish. 1973, Res. Doc. No. 115, Serial No. 3081.

29. Schnack, D. MS 1974. Summary report of the 1973 ICNAF joint larval herring survey in Georges Bank - Gulf of Maine areas. Annu. Meet. Int. Comm. Northw. Atlant. Fish. 1974, Res. Doc. No. 105, Serial No. 3341.
30. Sears, M. 1941. Notes on the phytoplankton on Georges Bank in 1940. Journal of Marine Research. 4(3): 247-257.
31. Sherman, K., and Shaner, E. 1968. Pontellid copepods as indicators of an oceanic incursion over Georges Bank. Ecology. 49: 582-584.
32. Smith, W.G., L. Sullivan, and P. Berrien. 1979. Fluctuation in production of sand lance larvae in coastal waters off the northeastern U.S., 1974 to 1977. In press.

A report on the explosive increase in Ammodytes spp. numbers in 1976, especially in the central part of Georges Bank followed by an almost complete absence of these organisms in 1977. These fluctuations were attributed to adverse weather conditions.

33. Walford, L.A. 1938. Effect of currents on distribution and survival of the eggs and larvae of the haddock (Melanogrammus aeglefinus) on Georges Bank. [U.S.] Bureau of Fisheries, Bulletin No. 29, 49: 1-73.
34. Whiteley, G.C., Jr. 1948. The distribution of larger planktonic Crustacea on Georges Bank. Ecological Monographs, 18(2): 233-264.
35. Wigley, R.L. 1956. Food habits of Georges Bank haddock. U.S. Fish and Wildlife Service, Special Scientific Report - Fisheries No. 165, 26 p.