absence of certain species from early written records of Littorinidae may reflect misidentification or failure to distinguish between closely related species.

Many other species have been added by one of us (R.J.) to the list of living Bermuda mollusks within the last 5 years: such as *Cymatium poulsenii* (Mörch, 1877), *Cassis flammea* (Linné, 1758), *Phalium granulatum* (Born, 1778), and *Murex pomum* (Gmelin, 1791). Other species are too uncommon or too small to be positively claimed as recent arrivals. Dramatic increase in the numbers of individuals of certain species during the last 10 years seems certain. We have collected and observed many specimens of *Strombus costatus* (Gmelin, 1791) in 1.2 to 6 m of water in Great Sound; in 1864 Jones failed to mention this species (*9*). Heilprin in 1889 reported finding onlyherontic specimens (*10*), and Clench and Abbott considered it extinct in 1941 (*11*). By 1946 it was becoming not infrequent (*2*), and by 1966 it was common enough to be taken for food. The history of the now moderately common *Conus bermudensis* (Clench, 1942) is very similar.

The causes, origins, and manner of these introductions or efflorescences are not easily explained in the absence of continuous and complete observations. That Bermuda is being bombarded with planktonic larval mollusks by the Gulf Stream has been demonstrated by Scheltema (*12*). But living adult gravid clams and snails are probably easily transported in bilges of leaky sailboats coming from Florida or the Bahamas. Moreover, one can never be certain but that many of these species may have been merely "holding on" in very limited, inaccessible areas for many years; subtle changes over the years in temperature, salinity, food availability, or enemies could have finally signaled the efflorescence.

The newly dominant mollusks in Bermuda are also abundant in the Bahamas, Cuba, and the lower Florida Keys. Bermuda specimens of *Macrocallista maculata* (Linné, 1758) most resemble in color pattern those from Florida and North Carolina. The fossil Pleistocene Bermuda *Strombus alatus* (Gmelin, 1791) (*2, 13*) is identical with that living from Florida to North Carolina, and is unlike the West Indian S. pugilis (Linné, 1758). The *Puperita pupa* (Linné, 1758) of Bermuda, however, most resembles Bahama specimens.

All the supposed newcomers grow unusually large in Bermuda, a characteristic of other long-familiar Bermuda species such as the 125-mm scallop *Pecten ziczac* (Linné, 1758); *M. maculata* (Linné, 1758) in Bermuda reaches a length of 94 mm, while the largest known specimen living elsewhere is 77 mm and the mean size of Florida specimens is 66 mm (*4*). Adult *Cymatium parthenopeum* (von Salis, 1793) from Bermuda are between 140 and 145 mm in length; elsewhere in the western Atlantic they are 80 to 96 mm (*14*). If these species are recently introduced, as they seem to be in several instances, their large sizes are probably attributable primarily to environmental rather than genetic factors.

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Fission-Fragment Synthesis of a New Nitrogen-Fluorine Compound

Abstract. *Fission-fragment radiolysis of a mixture of NF_3 and F_2 at room temperature has resulted in the formation of a new, unidentified nitrogen-fluorine compound that is stable at room temperature.*

The discoveries of such interesting compounds as F_3NO (*1*) and ClF_5 (*2*) following closely the discovery of noble-gas compounds should encourage the search for other interesting molecules and perhaps a fresh approach to the theory of bonding [for example, that suggested by Searcy (*3*)]. We report here evidence for the formation of a new N-F compound, in the hope of stimulating further work in this area. The compound is stable at room temperature in perfluorinated, all-monel containers.

In six separate experiments, mixtures of NF_3 and F_2 in all-monel capsules, maintained at room temperature, were bombarded with fission fragments produced by neutron irradiation of fully enriched UF_4 within the sample capsules. Total pressures ranged from 80 to 94 atm with equal amounts of NF_3 and F_2. The total number of fissions per experiment ranged from 7.5×10^{12} to 3×10^{15}. Fission-fragment radiolysis has been used to produce NF_3 from the elements, and hydrazine from ammonia (*4*). Gas-chromatographic analysis of samples taken from each of the six capsules several days after irradiation indicated the presence of a new material in addition to the two reactants. Only the two reactants were found in samples taken from the capsules before irradiation and in unirradiated control capsules. The all-monel gas chromatograph, for which a temperature-programed separation column is used, is capable of detecting such reactive materials as FNO and FNO_2 in quantities as small as 1 ppm without causing decomposition.

Only 1 to 10 micromoles of the new compound have been synthesized, so that identification is difficult. The suggestion, by gas-chromatographic evidence, that it has a normal boiling point near −50°C eliminates such other candidate N-F compounds as N_2F_4 *cis*-N_2F_2, and *trans*-N_2F_2 (which elute near their normal boiling points). Results from mass spectrometry indicate a peak at $m/e = 90$ (mass/charge), suggesting the ion NF_4^+, possibly a fragment of NF_5 or F_3NNF_3.

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