Professor James D. White *

One of the RSC's Centenary lecturers

Career

James White is a native of the West Country, having been born in Bristol, where he attended (briefly) Bristol Grammar School. His later schooling was in Tiverton, Devon, and after National Service in the RAF he went to Cambridge University, initially intending to study English literature. He quickly switched to the Natural Sciences Tripos and became interested in the chemistry of natural products largely as a result of the authoritative and challenging lectures given to the third-year students by Sir Alexander (later Lord) Todd. Subsequent emigration to Vancouver, Canada, provided White an opportunity to study there with Raymond Bonnett, and after receiving an MSc from the University of British Columbia, he emigrated once again, this time to MIT to take his PhD under the late George Büchi. In the autumn of 1965, he accepted a faculty appointment at Harvard University, where he rose from Instructor to Associate Professor before moving to Oregon State University in 1971. He currently holds the rank of Distinguished Professor. Among his many scientific activities he is a US Associate Editor for *Chemical Communications*.

Research

The nearly 200 publications that describe White's work are heavily oriented towards the chemistry of natural products. His early research focused on the organic chemistry of substances from terrestrial sources, especially plant products and microbial metabolites, and included structural elucidation as well as synthetic studies on these materials. The latter gradually became centred on the synthesis of macrolide antibiotics and resulted in a number of notable accomplishments that include syntheses of methynolide, vermiculine, nonactin, aplasmomycin, boromycin, avermectin B_{1a}, rutamycin B, and most recently epothilone B.

In the mid-1980s, White's interests were drawn towards marine sources of natural products, particularly algae and sponges. "There are unique symbiotic relationships and defence

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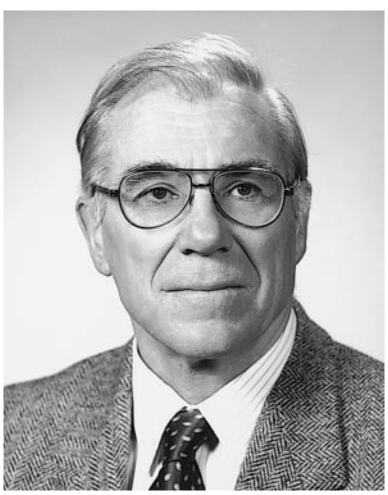

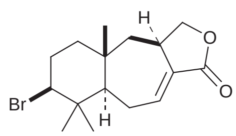

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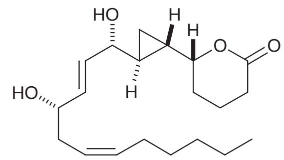

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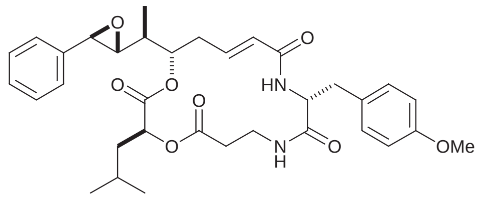

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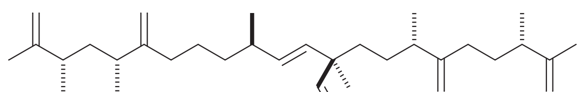

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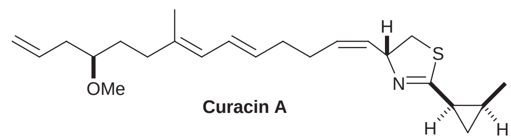

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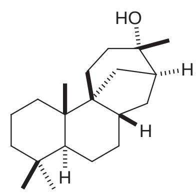

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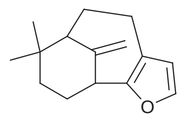

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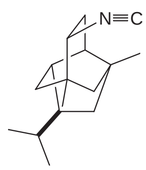
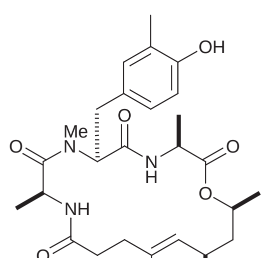
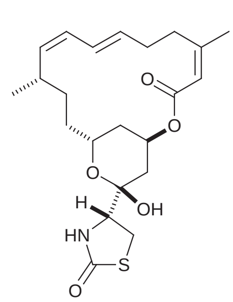


Isocyanopupukeanane



Geodiamolide A



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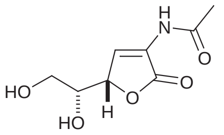

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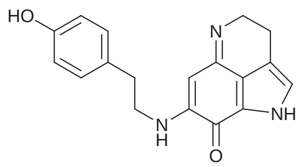

Makaluvamine D

mechanisms in the marine environment, many of which are based upon the chemical properties of a particular molecular structure. For example, the nudibranch *Phyllidia varicosa* shown on the cover of this issue acquires a substance, isocyanopupukeanane, from a sponge on which it feeds, and then uses this compound as a defensive weapon to ward off predatory fish. Evolution has provided marine species with an extraordinarily rich and varied palette of metabolites, and organic chemists are beginning to appreciate the opportunities that this affords. The revitalization of natural products chemistry during the last two decades can be largely attributed to the discovery of many new structural classes among marine species, some of which embrace the most complex structures presently known. Our own contribution to this arena has been primarily through synthesis; several of the marine natural products whose syntheses have been completed in our laboratory are shown here and on the front cover.

The future of natural products chemistry holds great promise, not only because there are undoubtedly many unusual structural types yet to be discovered, but also because some compounds that have recently come to light exhibit unprecedented levels of biological activity. The incentives to pursue this area of research are surely strong enough to sustain current efforts in the field for many years to come. As fresh young minds are drawn to this endeavour, even more remarkable advances can be expected in the future."