

MICROBIAL LIPIDS

The Chemistry and Metabolism of Microbial Lipids

By William M. O'Leary. (Monographs in Microbiology.) Pp. xiv+210. (Cleveland and New York: The World Publishing Company, 1967.) \$8.

This monograph has been written primarily for the microbiologist but will also be useful for the biochemist interested in bacterial lipids. The first chapter will be a valuable guide for any microbiologist who considers entering the technically difficult field of lipid chemistry. In this chapter both the effects of varying culture conditions on bacterial lipid composition and the pitfalls associated with the commonly used methods of lipid extraction and identification are discussed in a refreshingly critical manner. Similarly the chapters describing the range of fatty acids and complex lipids occurring in micro-organisms are more than just a routine catalogue of reported data; the author discusses critically the validity of the analytical information that has been presented in the literature.

When Dr O'Leary moves from the subject of lipid chemistry to that of lipid metabolism there is a noticeable change in the standard of this book. The description of the biosynthesis of *cyclopropane* fatty acids stands out from the rest of this section, as would be expected in view of the author's interest and pioneering studies in this field. The description of the biosynthesis of the saturated and unsaturated fatty acids, however, could have been presented in more detail. During the past few years the individual enzymes of fatty acid synthesis in *E. coli* have been identified and isolated, and the role of acyl carrier protein in this system has been demonstrated by the elegant studies of Vagelos, Wakil and their co-workers. Whereas reference to this now classical series of investigations only occupies three lines, the discussion of *cyclopropane* biosynthesis extends to ten pages. Similarly the description of the synthesis of mono-unsaturated fatty acids is marred by the lack of discussion of the enzyme mechanisms involved in the formation of the double bond at the decanoate stage.

Dr O'Leary suggests that his book may well bridge the gap between the inadequate coverage of this field in the more important textbooks and the full review. If there had been a better balance between the sections describing the chemistry and biosynthesis of bacterial lipids the book would have fulfilled this function. The earlier chapters, however, will make an excellent introduction for microbiologists interested in investigating the lipid composition of the specific organisms they are studying.

D. GOMPERTZ

PYRAMIDS OF POISON

Pesticides and Pollution

By Kenneth Mellanby. (The New Naturalist: a Survey of British Natural History.) Pp. 221 + 14 plates. (London: William Collins, Sons and Co., Ltd., 1967.) 30s. net.

DR MELLANBY has obviously used the past few years very valuably indeed and has now produced an informative, comprehensive and balanced account of the whole problem of pollution of our environment. He can say, with conviction backed by long term experiment and observation, just where the dangers of pollution lie now and in the future. Deleterious situations are often allowed to persist long after they have become a public nuisance. When serious social dangers are brought to light, somebody, somewhere, has to shout very loudly indeed. Ralph Nader, Barbara Robb and Rachel Carson have, in their various spheres, performed this service for the community. Once public awareness has been aroused sufficiently to devote time and money to the problem, facts must be collected, experiments performed and the real enemy

sought out. To be fair, certain sections of the population and some official bodies were already aware of the problem of widespread pollution, and research in Great Britain was well under way long before *Silent Spring* was published; nevertheless, it focused public attention on a real and growing problem.

Pollution of our environment has been with us ever since man lit his first fire. Nevertheless, it is an indictment of the criminal tolerance of man and his indifference to his environment that measures to control pollution are prosecuted with vigour and skill, not according to the level of danger inherent in any one source, but inversely according to the time they have been with us. Dr Mellanby performs another valuable service in showing how generalizations about pollutants may not apply across continents. The British Isles may have, to aggravate any situation, a dense population and an intense agriculture, but they are blessed with a less than fierce sunlight, which can do nasty things to "smog" in Los Angeles, and with insects rarely if ever as voracious as those of Africa or the Americas.

The herbicides and fungicides leave the court virtually unstained. Those responsible for the disposal of radioactive waste, Shell and BP, receive a well-merited pat on the back. The persistent insecticides are shown to be as dangerous as was first feared, for chronic poisoning and synergistic effects between two or more insecticides are now coming to light. A well-merited swipe is directed at *Chemicals for the Gardener* which recommends a host of dangerous chemicals for unskilled hands to use. The garden, like the natural habitat which it begins to approach, does not need routine pest control; both need only the occasional and local rescue programme.

Some sources of pollution are, as Dr Mellanby points out, susceptible to legislation, but how do you legislate against a river which is half sewage effluent? It is staggering to learn that without effluent some rivers might run dry. A new water plan for Great Britain might allow us to use sewage in a more economic way by combining it with comminuted urban waste (the equipment is available) to produce soil compost. Small scale experiments suggest that both pulverized urban waste and pulverized cars can be re-used instead of being dropped on to sea beds to pollute an environment we have not yet reached.

Dr Mellanby is less than fair to the Thames Water Board which in the past three years has never allowed the Thames to become totally de-oxygenated. That one-time sewer has shown a remarkable improvement during the past five years. We can be grateful that pollution is not worse than it is in Great Britain, and for this we thank those literate, voluble and knowledgeable conservationists who in the guise of ornithologists, anglers, entomologists and botanists cast a perceptive eye over our countryside at week-ends.

Collins, after this their fiftieth number of the New Naturalist series, should be encouraged to venture again into the constructive and emotive realms of natural history as well as the purely descriptive fields they have served so well in the past. I look forward to publications on such topics as "Recreation with Conservation" and "Water Supplies and the Environment". I hope that the authors of their future volumes will be as lucid and perceptive as Dr Mellanby.

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CRAFT INTO TECHNOLOGY

Wood Finishing

By John W. Collier. (Pergamon Series of Monographs on Furniture and Timber, Vol. 6.) Pp. xxiii + 306. (Oxford, London and New York: Pergamon Press, Ltd., 1967.) 35s. net.

It is commonly considered that one of the weaknesses of British industry is a failure to bridge the gap between