

liquids in bulk; import and export traffic, especially where direct transfer between ship and canal-boat is possible; bulk traffic, and traffic between waterside premises. This is a good beginning, but it is to be hoped that the statement of policy will be followed up and that the Docks and Inland Waterways Executive will now sponsor a detailed, practical investigation of the present state and future possibilities of inland water transport.

K. G. FENELON

RECLAIMING THE DESERT

Men against the Desert

By Ritchie Calder. Pp. 186+27 plates. (London: George Allen and Unwin, Ltd., 1951.) 12s. 6d. net.

MR. RITCHIE CALDER, the science editor of the *News Chronicle*, was sent by Unesco to North Africa and the Middle East to report on what is being done to reclaim the deserts. The strange aura of romance and mystery that surrounds the desert attracted much attention to the assignment, which was reported (according to the publisher's note) in thirty-two countries. A popular belief that some of the vast empty deserts could be used for helping world food production overtake world population contributed further to the widespread interest aroused by Mr. Calder's journey. It took him from Algiers deep into the Sahara, across North Africa to Cairo and Sinai, then (since access to Israel from Egypt is impossible) to Iraq, Persia, Cyprus and thence to Israel but not to Jordan, which was barred to Mr. Calder because he had an Israeli visa on his passport.

The journey thus covered the grounds occupied by many of the oldest cultures in the world, of which only that of Egypt still flourishes. The others have been partly or completely submerged beneath the desert sands. The question Mr. Calder hoped to answer was: Could these lands again be made to support a hundred people where now they only support one?

The answer he obtained was a qualified affirmative. Mr. Calder is a good journalist and brought unbounded enthusiasm to his task. From the first to the last page his book makes fascinating and absorbing reading. In every country he found enthusiasts to whom the reconquest of the desert had become almost a divine mission and who usually encountered one insuperable obstacle to the accomplishment of their mission—apathy on the part of either the authorities or, more commonly, of the people who were to be saved. The truth seems to be that the deserts are seldom worth reclaiming. They were conquered at a period when irrigated agriculture was the only kind of intensive agriculture known to mankind, and they were abandoned when agriculture became possible in moister lands. In most cases money could now be more efficiently spent on reclaiming waste land in already densely populated countries—England, for example. In North Africa reclamation involves not merely the bringing of water on to the land and the growing of trees and crops, but also the establishment of the rule of Cain in the country of Abel. In Algeria, Tripoli, Cyrenaica and Egypt, Mr. Calder reports that great works are being organized to throw back the desert, and all credit is due to those who are carrying them out; but if and when successfully completed they will be but as a drop in the ocean. As a contribution to the global food

supply their effect will probably be ephemeral, because the sons and daughters of Cain have a way of multiplying up to and beyond the limit their land will support.

In Israel, however, and to a lesser extent in Iraq and Persia, desert reclamation is a matter of urgent practical politics. Those beings whom Mr. Calder calls "the scientists" and who correspond to the gods who wrought wonders in former ages are being called upon to shower their blessings on mankind. Iraq and Persia have in their oil great wealth, some of which can be diverted to restoring the productivity of the land by modern adaptation of ancient methods. Israel has no mineral wealth, and her greatest resource in conquering the desert is the ingenuity of her people, and particularly of "the scientists" who are not only planning great irrigation and hydro-electric schemes but also are working on the large-scale desalinization of salt water by ionic exchange and by distillation through nylon. Promising experiments are being made to use the opacity of flake nylon to light and heat to reduce evaporation from reservoirs. There seem to be possibilities that nylon may become a key material in the conservation of water in Israel, and schemes are being considered for the large-scale cultivation of the castor-oil plant as a source of raw material for nylon manufacture. The great plans for the "Jordan Valley Authority" first put forward by Dr. W. C. Lowdermilk, whereby the waters of the Jordan would be almost completely used for irrigation, are in abeyance owing to the conflict between the Jews and Arabs; but the reclamation of the Negev, where the Israeli government hopes to settle some of its present surplus population, is proceeding. What is being done in Israel shows what can be done in desert reclamation if the will and the need for it are there. But the impression left by Mr. Calder's book is that in most of the other countries which he visited one or other of these essential stimuli is lacking.

G. V. JACKS

ANALYTICAL CHEMISTRY: SCIENCE OR ART?

Chemistry of Specific, Selective and Sensitive Reactions

By Dr. Fritz Feigl. Translated by Prof. Ralph E. Oesper. Pp. xiv+740. (New York: Academic Press, Inc.; London: H. K. Lewis and Co., Ltd., 1949.) 13.50 dollars.

QUITE apart from his considerable output of original papers, the especial significance of Prof. Fritz Feigl's contributions to analytical chemistry was made abundantly clear on the publication in 1931 of his great work "Qualitative Analyse mit Hilfe von Tüpfelreaktionen". This book has unquestionably exercised a profound influence on the development of microchemistry, for by demonstrating the feasibility of carrying out chemical tests of high sensitivity and selectivity even on the microgram scale it may be said to have founded a philosophy from which has derived the methods and techniques of qualitative and quantitative microchemistry and ultra-microchemistry without which the recent spectacular advances in inorganic chemistry—especially among the heavier elements and radioactive isotopes—could never have been achieved.

In the admirable English translation by Dr. Janet Matthews, the practical part of Prof. Feigl's book