

simplified approach to self-diffusion that would seem to be a useful tool for the nonspecialist. S. F. Edwards masterfully and entertainingly reviewed the problems of electronic states in liquid metals. M. H. Cohen introduced the exciting question of the possibility of the conduction electrons in some alkali metals having "liquid-like characteristics" that strongly effect their ability to alloy.

Last but not least, J. S. L. Leach raised the question: "What do we know of the thermodynamic properties of liquid metals and what do we want to know?" It is to be hoped that the answer to this and other questions raised at the conference might receive more attention in a subsequent report on the *sequel* to this conference. It was proposed that a next meeting be held in three years. Ziman amended this by suggesting that the next meeting be held *not sooner* than three years hence. This suggestion was heartily supported by the attendees weary from five days "education, enthusiasm, exhaustion . . ." and etc.

Arthur Paskin

Brookhaven National Laboratory

Cairo Solid State

In the Middle East the three important American educational endeavors at the college level are Robert College in Istanbul, the American University in Beirut, and the American University in Cairo. The Cairo institution was not founded until 1919, and so is probably not as well known as the other two, both of which are about a hundred years old. However, it has developed greatly in recent years. When I was in Cairo in 1957, it had no graduate or research program in physics. Under the able leadership of Adli Bishay, chairman of its department of physical science, all this is changed. The graduate enrollment in solid-state science has grown from 5 in 1962 to 50 in 1966. The construction of the new six-story science building, with fifty-thousand square feet of floor space, can be regarded as symbolic of this expansion. It is situated on the edge of Liberation

Square, and its architecture somehow manages to harmonize both with the older Moslem buildings and newer edifices such as the Nile Hilton, which are located around this square.

The resources of the American University in Cairo are not sufficient to carry graduate instruction in all aspects of physical science, and so the graduate program, in contrast to the more diversified undergraduate curricula, is wisely focused almost entirely on the solid state. (The other areas in which there are graduate programs are English, economic-political science, sociology-anthropology, and Arabic studies.) Nuclear physics, for instance, is left to the Atomic Energy Establishment, the National Research Center and universities of the United Arab Republic.

It is thus appropriate that the dedication of the new building should be accompanied by a conference on solid-state science, which was held 3-8 September, 1966. This conference was sponsored not alone by the American University, but "in cooperation with the Supreme Council for Scientific Research in the United Arab Republic." Particularly gratifying was the interest that leading figures in the educational scientific life of the UAR took in the conference, and the hospitality that they showed. The four speeches at the dedication ceremony that opened the conference included not only brief addresses by Thomas A. Bartlett, president and Adli Bishay, of the American University, but also ones by A. Riad Torkey, head of the Supreme Council for Scientific Research of the UAR and Hussein Said, minister of higher education, who conveyed personal greetings from President Nasser.

In connection with the dedication, Theodore Edison presented to the American University an incandescent lamp with a carbonized bamboo filament made by his father, Thomas Edison, in 1884, and also one of Edison's electromotographs, which were precursors of the chalk telephone. In accepting these gifts, Bishay said: "Their presence in Cairo . . . represents the very sort of intellectual and cultural exchange that is at the core of the objectives of this university. As an Egyptian, I take this gesture as a dec-

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laration of friendship and good will from the American people to the Egyptian people."

The conference was attended by 173 delegates, including 108 from the UAR, 28 from the USA, and 37 from 15 other countries. Each of the sessions had as chairman a visitor from abroad, and as a cochairman a scientist from the United Arab Republic. The general topic of the conference was "Interaction of Radiation with Solids." There was considerable emphasis on radiation damage or effects. Three of the eight sessions were concerned with this topic, the others dealing with magnetic resonance, conductivity, metals, spectroscopy, and quantum electronics. Particular attention was given to glasses, as this is an aspect of the solid state in which the American University has specialized, using the facilities of the Egyptian Atomic Energy Establishment for high energy radiation sources when needed. The old and the new, for instance, were linked at the American University in Cairo in magnetic-resonance studies of irradiated silica glass from the Libyan desert, as well as of ancient glasses manufactured thousands of years ago. Glass lasers are being studied at this university. Egypt has the raw materials for glass, but metals are relatively scarce, and so research on glasses is a "natural."

The United Arab Republic realizes the vital role of science in mod-

ern civilization and so has developed large research institutes. The members of the conference therefore were given the opportunity of visiting its National Research Center and its Atomic Energy Establishment.

The American University in Cairo has an enrollment of about a thousand, and is small compared with the Cairo University of the UAR, which has over fifty-thousand full-time students. Also it is very young compared to the thousand-year-old Al Ashar University, where the conference members were tendered a luncheon. Nevertheless it has a significant role to play. In the words of Bartlett, its president: "This university is a meeting point of cultures and languages . . . it is organized along patterns of an American university, and draws most of its financial support from the United States. At the same time its staff is largely Egyptian, and over 65% of its students are from the United Arab Republic. Its work is tailored to fit the needs and resources of this country." Torkey says: "We of the Supreme Council for Scientific Research (which he heads) are following with great interest the solid-state science program at the American University in Cairo, and have noted with satisfaction the important role it is playing in the educational and scientific life of this country."

J. H. Van Vleck
Harvard University

Coherence and Quantum Optics

A three day international conference on coherence phenomena and quantum optics was held 22-24 June, 1966, at the University of Rochester. The second conference of its kind, it was sponsored by the Air Force Office of Scientific Research and the Air Force Cambridge Research Laboratories.

Three hundred registrants gathered for this occasion. There were pure mathematicians, theoretical physicists in classical optics and in quantum field theory, experimental physicists in fluctuations and in holography, experts in noise and in coherence, and research directors from universities, industries, and government laboratories. It is truly remarkable how this very young field of quantum optics

and coherence establishes a common bond for such a varied group that usually does not speak a common technical language.

In an invited paper, R. Hanbury Brown (Sydney) described the very large stellar intensity interferometer that has been put into operation at Narrabri Observatory in Australia "to measure the apparent angular diameter of all hot stars brighter than $m_{pg} = +2.5$ and with spectral types earlier than F." Roy J. Glauber (Harvard) reviewed quantum optics and E. C. George Sudarshan (Syracuse) presented an elementary discussion of coherence theory, both classical and quantum mechanical.

Whereas these papers dealt primarily

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