

in *Physics* are to be restricted to those of specialist standard, and will deal with subjects in rather narrow fields. They will be of admittedly ephemeral value; but the aim is to publish them quickly. So far as possible, it is intended to group the papers so that the contributions in each issue will deal with topics in one particular field; for example, in No. 1 they deal with problems in the physics of the solid state, and in further issues the properties of liquid helium, the theory of dislocations and the science of the upper atmosphere will be the underlying themes.

In the first of the three articles in the first number, entitled "The Mean Free Path of Electrons in Metals", by Dr. E. H. Sondheimer, the effect on the electrical conductivity of reducing the dimensions of the conductor so that the mean free path of the electrons is comparable in magnitude with the thickness of the specimen is considered. In addition, the more complicated effects introduced when the thin specimen is placed in a magnetic field, and the so-called anomalous skin-effect, are discussed. The importance of, and the need for, additional experiments at low temperatures are stressed.

The second article is by Prof. F. Seitz, and is on the generation of vacancies by moving dislocations. New evidence is cited which confirms Prof. Seitz's view that vacant lattice-sites are generated during plastic flow in ductile crystals, particularly in metals. The origin of work-hardening in single crystals is discussed, and several alternative interpretations which would assist in deciding what essential part vacancies play in the cold-working of materials are presented. Finally, several experiments, typical of those which could prove decisive in isolating the influence of vacancies, are proposed.

Between 1920 and 1948 the theory of the growth of ideally perfect crystals was greatly developed, and, based on these results and using the concepts of step and screw dislocations, Dr. F. C. Frank has produced during the past year a theory of the growth of imperfect crystals which seems to give answers to many puzzling questions. Observations on beryl, carborundum, cadmium iodide and other crystals have given remarkable verification of Dr. Frank's suggestions. The third and final article, on crystal growth and dislocations by Dr. Frank, is therefore most valuable and timely. The underlying concepts are clearly explained, the theory so far as it has been developed is briefly reviewed, and the essential points to be noticed in the various experimental observations are carefully pointed out. The range of application of the present theory is finally considered, and the relation of supercooling to the growth of crystals from the melt is very briefly—all too briefly—mentioned.

KOSSUTH AWARDS IN HUNGARY FOR 1952

WINNERS of the 1952 Kossuth Awards in Hungary, which are given for outstanding work during the past year, have recently been announced. One award is for 50,000 forints, fourteen for 20,000 forints and sixty-eight for 10,000 forints, making a total of slightly more than a million forints (about £30,000). The Awards are divided between four sections on medicine and natural science, social science, art and literature,

and social reconstruction, respectively; these are subdivided by subject and the Awards for science and technology are as follows, the value being 10,000 forints except where otherwise stated. *Medicine*: Prof. I. Törő, for the discovery of a new cell-division mechanism (20,000 forints); Prof. F. Kiss, for research on the nervous system and lymphs; Prof. B. Issekutz, sen., for achievements in the field of the pharmacy of quaternary ammonium bases and the developing of the Hungarian pharmaceutical industry; Prof. G. Ivanovits, for the isolation of vitamin B₁₂. *Technical Sciences*: Prof. E. Vadász, for work on the genetic theory of Hungarian manganese ores, and for his book "Bauxite Geology" (20,000 forints); Prof. E. Szádeczky-Kardoss, for research and publications on lignite petrology (20,000 forints); Prof. P. Esztó, for theoretical and practical research on rock movements occurring in mines; Prof. G. Pattantyus, for research on cavitation streams of water-turbine blades; E. Mosonyi, director of the Hydraulic Power Planning Office, for hydrological research on the regulation of the Rivers Danube and Tisza; L. Forgó, deputy director of the Thermo-technical Institute, for development of the theory of small ribbed thermal exchangers. *Mathematics*: Prof. P. Turán, for work on mathematical analysis (20,000 forints); Prof. O. Varga, for work on differential geometry, especially the Finsler spaces; T. Szele, university lecturer, for structural research on the theory of Abel groups and, in particular, for the discovery of analogies with the theory of bodies. *Physics*: Prof. P. Selényi, for research and publications on optics; Prof. K. Simonyi, for the construction of high-voltage accelerators. *Chemistry*: Prof. G. Schay, for thermodynamical and experimental research on the elasticity and plasticity of rubber, and its practical application; Prof. S. Szalay, for geochemical research. *Agricultural Science*: Prof. S. Jávorka, for plant research. *Metallurgy and Machine Industry*: E. Ács, director of the Instrument Industry Research Institution, for the manufacture of 24-channel seismograph installations, and other discoveries (20,000 forints); Mrs. A. Tasnádi, head of the metallographic laboratory of the Mátyás Rákosi Works, for the development of methods of the surface protection of metals; Dr. J. Lukács, engineer, and E. L. Bochner, department head, both of the Electrical Industry Central Research Laboratory, for work on the economy of copper in electrical installations and on the production of high-voltage resistances. *Mining and Power Industries*: Prof. J. Varga, for research, theoretical and practical, in organic chemistry (20,000 forints); Dr. A. László, chemical research engineer at the Research Institute for Heavy Chemical Industry, for chemical research; Dr. Z. Földi, engineer in the Chinoin factory, for research on penicillin and its manufacture, and other factory processes; G. Nagy, investment manager of the Eörsöd Co-operative, for work on the gasification of lignite and its pilot-plant application. *Agriculture*: A. Porpáczy, of the Fertőd Experimental Farm, for work on the establishment of new types of fruits, and on the acclimatization of the lemon (20,000 forints); V. Westsik, of the Nyiregyháza Sand Improving Experimental Farm, for work on improving the agricultural yield from loose, sandy soils (20,000 forints); Dr. J. Mócsy, professor of internal diseases in the Veterinary Faculty of the University of Agricultural Sciences, for his method of protection against external parasites.