study for the B.Sc. honours degree in physiology, which he obtained in 1955. He was an assistant lecturer in the Department of Physiology of the University of Liverpool during 1958–60, when he obtained the degree of M.D. He was then appointed to the post of lecturer in physiology in the University of Cape Town. He has published a number of papers, alone or in collaboration with others, mainly on clinical and experimental aspects of liver function.

University of Keele: Statistical Research Unit in Sociology

Mr. B. De Vos has been appointed the first director of the new Research Unit in Sociology of the University of Keele. He will take up the appointment from January 1, 1964. Mr. De Vos has been a director of the Gallup Poll for the past five years. He will remain a director of that organization. As director of the Unit, he will be responsible for developing new sociological studies based primarily on sample survey techniques and also for reinforcing the strong links already existing between the different departments and disciplines at Keele. Since its foundation in 1949, one of Keele's special features has been the maintenance of close links between different disciplines and the avoidance of over-specialization within departments. Up until now, there has not been a separate Department of Sociology, although considerable emphasis has been placed on the sociological aspects of studies in the Departments of Economics, Education, Geography and Politics. The formation of the Research Unit has been made possible by a gift of £50,000 from the Nuffield Foundation. The University is also responsible for running the *Sociological Review*.

Transport Investigations at the Imperial College of Science and Technology

The Nuffield Foundation has granted £45,500 to the Imperial College of Science and Technology to enable Prof. C. Buchanan to continue the investigations on which he has recently been engaged in the Ministry of Transport. Mr. David Crompton and Mrs. Ann MacEwen, who worked with Prof. Buchanan in the Ministry, have been appointed Research Fellows at the College. The particular topics which it is proposed to study are American transportation survey methods, the use of cost-benefit analysis for urban roads and redevelopment projects, environmental standards in relation to traffic, and alternative movement systems for urban areas. The appointment of Prof. Buchanan to the newly established chair of transport tenable at the College was announced earlier in the year (*Nature*, **197**, 1153; 1963).

Transportation and Economic Growth

A booklet being distributed by the Battelle Memorial Institute, entitled *Can New Transportation Concepts Contribute to Economic Growth?*, directs attention to the lack of the integrated knowledge needed to answer some of the basic questions relating to the efficient and economic operation of transport facilities (Pp. 8. Columbus, Ohio: Battelle Memorial Institute, 1963). Solutions of such problems, it is argued, have frequently been designed to meet the immediate needs of specific and narrowly defined situations, and further research to gain knowledge of the interactions of various parts of the complex would contribute substantially to economic growth.

International Bureau of Time: Uniform Time and Constant Frequency for the Year 1964

Following the decision of the International Committee of Time at its meeting in Berkeley during August 1961, and the General Assembly of the Union Radioscientifique Internationale at its meeting in London during September 1960, and the plenary assembly of the Comité Consultatif International des Radiocommunications at Geneva during January–February 1963, the International Bureau of Time consulted the observatories which have cæsium atomic resonators and compared their astronomical observations. It has now calculated the nominal value of the frequency to transmit during the year 1964 as -150×10^{-10} with regard to the scale of time such that the frequency of cæsium has the value: $f(\mathrm{Cs}) = 9\ 192\ 631\ 770$ c/s. The value indicated will not change during the course of 1964. The International Committee of Time, the Union Radioscientifique Internationale and the Comité Consultatif International des Radiocommunications recommend that the value of the frequency indicated by the International Bureau of Time should be utilized by all organizations wishing to transmit uniform time and constant frequency.

Physical Review and *Physical Review Letters*

In spite of the number of new periodicals that have been launched in recent years to deal with specialized branches of physics, editors still find it difficult to satisfy the demand for additional space for the publication of papers submitted to them. *The Physical Review*, which has until now been issued at fortnightly intervals but which has been considerably expanded during the past few years, is to become a weekly as from January 1964. The fifty-two issues in the calendar year will each be dated on the Monday of the week of issue and will be divided into four volumes of thirteen issues each, with the thirteenth issue consisting of a comprehensive quarterly index. The first twelve issues of a volume will be divided into two sections, *A* and *B*, of six issues each, appearing alternately. Section *A* will be devoted to atoms, molecules and condensed matter, and Section *B* to the physics of nuclei and elementary particles. The quarterly index will be a combined one relating to both Sections *A* and *B*. Subscriptions must cover both sections. The cost to members of the American Physical Society will be increased by five dollars. In a parallel move, *Physical Review Letters* will also be issued weekly and will consist annually of two volumes of twenty issues each. There will be no division of subject-matter and there will be no increase in size or subscription.

Automata Theory and Information Retrieval

The expressed purpose of the survey, *The Application of Automata Theory to Problems in Information Retrieval*, by R. A. Kirsch, is to suggest certain topics in automata theory that may be explored so as to achieve further understanding of the information retrieval problem (National Bureau of Standards. NBS Report 7882. Pp. ii + 70. Washington, D.C.: U.S. Department of Commerce: National Bureau of Standards, 1963). The literature of automata theory is intimately connected with the study of machines, and in early literature the machines studied were intended to appear lifelike. However, in the more recent literature the emphasis is on information processing, with many papers on the design of computor-life devices and switching circuits. Papers dealing with the early approach and with the design of devices and switching circuits are excluded from the selected bibliography given at the end of the survey. Attention is directed more to the abstract area of automata theory. On the subject of finite automata, literature concerned with problems in representing languages, rather than with studies of relations between finite state languages and the memory requirements or structural constraints which they impose on the machines which generate or recognize them, are listed in the bibliography. Certain references to recursive function theory are included, in addition to some on mechanical theorem proving, especially those which make use of syntactic techniques and a technique based on the expansion theorem of Herbrand. The particular applications discussed in the survey are: information retrieval systems for processing natural language, dealing first with automata theory as a source of mechanisms for the description of English text; and