results available for the relief of illness and restoration of health". He hoped that any medical research workers who still possess an attitude of exaggerated suspicion or patronage of those who work in association with industrial production would be encouraged to rid themselves of such prejudices, and that the industrial firms would do much more to remove the barriers of secrecy between competitive units. The progressive perversion of scientific discoveries to the purposes of destruction, and the encroachment of secrecy, made more urgently necessary the need "to keep open, to widen, and to multiply the legitimate channels of international understanding and co-operation in science". He recognized the appropriateness of the inspiration for the conception of such a centre arising in Switzerland, 'the chosen home of the international spirit in medical activity', and rejoiced in the compliment to Britain and to London, in its establishment here.

In order not to dissipate its energies, the Foundation will at first devote its attention to problems concerned with steroid hormones, and the reference library will first be made as complete as possible in this respect.

Informal conferences, with ample opportunity for scientific workers invited as resident guests to take part in private discussion, will be held four or five times a year on chosen subjects. In addition, distinguished men of science will be asked to the Foundation to lecture to invited audiences. There is a room available for medical film displays.

The Foundation will further encourage international co-operation by helping, with fellowships and grants, research workers to work in countries other than their own. A new journal of the Foundation will report the proceedings of conferences, lectures, and original work done with the support of the Foundation.

The accommodation, for residence or for meetings, will be available, on repayment in certain instances, and at the discretion of the secretary, to nominees of the Medical Research Council, British universities, research associations, and scientific societies, when not required for the Foundation's own purposes.

It is hoped that the Ciba Foundation will prove of real value in furthering friendly, personal collaboration and interchange of information, in promoting scientific research and strengthening international fellowship.

G. E. W. WOLSTENHOLME
(Secretary to the Executive Council)

ORIGIN AND FORMATION OF COMETS

IN a recent paper "On the Origin of Comets" (*Mon. Not. Roy. Astro. Soc.*, 108, 6; 1948), R. A. Lyttleton discussed a new theory of the origin of comets as the result of the passage of the sun through a cloud of interstellar dust. When such particles of dust enter the gravitational field of the sun, they converge to the 'accretion axis', which is the line through the centre of the sun parallel to the direction of motion of the cloud, and every particle will describe a hyperbolic orbit intersecting this axis.

The situation provides favourable opportunities for collisions at and near the axis, and when any two particles collide, a portion of their kinetic energy of relative motion is transformed into internal energy

and heats the material. If the velocities of collision are too high, complete vaporization will occur, and hence it is essential that, for the capture of material in the solid form, there should be a limit to the velocities of collision. It is shown that there is a lower limit of about 20 astronomical units at which material in suitable form can be captured, and the accretion process itself sets up an upper limit of about $1,000/v^2$ astronomical units, where v km./sec. is the velocity of the typical particle. Matter distributed around the axis at a distance greater than this flows away, and at a less distance it flows towards the sun. Internal gravitation is responsible for the stream dividing into separate segments that contract lengthwise, the resulting aggregations being identified with the comets.

The disruptive field of the sun sets a limit to the initial mass of an aggregation, and certain quantitative results calculated for the masses of the aggregations agree reasonably well with estimates of the masses of comets—Halley's Comet, in particular. It is believed that, as a result of the passage of the sun through a cloud of moderate dimensions, several thousand comets might be formed; and if the theory is correct, it seems that comets must be the most numerous celestial objects in the universe, assuming that many of the stars have also acquired comets in a similar manner.

The centre of the solar system is not, of course, the centre of the sun, and hence, in falling towards the former, the aggregations will possess angular momentum about the centre of the sun, but their initial orbits will necessarily be almost line-ellipses. Subsequent perturbations by stars passing within about 10,000 astronomical units from the sun occur and will be most effective when the comet is far from the sun. If the comet thus perturbed has not a sufficiently small perihelion distance, it will not be visible; and it is shown that if the comet afterwards comes near enough to the sun to be visible, its eccentricity will exceed 0.8, so that the new orbit will still be nearly parabolic.

It is important to notice that the theory confirms what has been conjectured for many years—that the comets and planets represent two solar families having essentially different origins.

THE FOREST OF AE, DUMFRIES

IT has long been a dream of the forest officer in charge of considerable areas of more or less out-of-the-way forests in the British Commonwealth to ensure having available a labour force to carry out the ever-recurring works in the area, and to establish one or more forest villages entirely under his own sway which would ensure a certain permanency of labour. This object has not always been understood by the administrative officers responsible for the government of the region, and the forest officer has been regarded with suspicion as endeavouring to get a section of the population under his own administrative charge. This has been the case where there have been large existing forests.

In the present forestry position in Great Britain, this reason does not apply. The forests have to be created, often in situations where population is scanty, and towns and their amenities are distant. Here the establishment of the forest village becomes an essential. Moreover, British habits with the clearance

of the forests from the countryside and the growth of industrial conditions and their populations have resulted in the presence of a people in whom all forestry instincts and forestry sense have long disappeared. One of the methods of giving birth once again to this intuitive forestry sense in the countryside—newly created into a forest countryside—is to gather the indispensable labour supply into forest villages fully equipped with all the amenities in the modern sense.

A new village of this type is being built in the Forest of Ae*. The forest is situated in Dumfriesshire in the beautiful southern uplands some ten miles north of Dumfries. The village takes its name from the Water of Ae, a tributary of the Annan. The Forest of Ae is the first new forest in Scotland which has required a new village to be built to house its workers, though it is unlikely that it will be the last.

The oldest plantations are now twenty years old. The forest covers an area of 10,683 acres. Some of this land will be maintained under agriculture; the rest is at present regarded as lying too high to be plantable, that is to say, above 1,200 ft. The total planted area amounts to 3,000 acres, and another 4,500 remains to be planted. It is estimated that by 1960 about ninety men will be required for all-year forest work. In addition, others will be employed in saw milling, transport and other jobs. The houses in the village are well spaced, each with a garden, and there is a good road system. Trees and flowering shrubs are being planted in appropriate sites. Up to date, fourteen houses have been built which it is hoped will be occupied by the end of this summer. It is intended to put up eighty houses, spread over the next ten years. Provision has been made for a school and a church, and also for an inn and some sort of communal club.

In this village will grow up a new population in whom that forest sense, long lost in Great Britain, will once again be reborn. E. P. STEBBING

* Forestry Commission, Britain's Forests: Forest of Ae. (London: H.M. Stationery Office, 1948.)

FORTHCOMING EVENT

Thursday, July 21

✓ ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE (at Manson House, 26 Portland Place, London, W.1.), at 7.30 p.m.—Dr. Arnaldo Gabaldon (Venezuela): "The Mass Control of Malaria with the New Insecticides".

APPOINTMENTS VACANT

APPLICATIONS are invited for the following appointments on or before the dates mentioned:

LECTURERS (2) IN CHEMISTRY, and a LECTURER IN BIOLOGY—The Clerk to the Governors, Woolwich Polytechnic, Woolwich, London, S.E.18 (July 23).

PHYSICIST to undertake work on problems connected with the Knitting Industry—The Secretary, Hosiery and Allied Trades Research Association, Chokewood House, 4 First Avenue, Sherwood Rise, Nottingham (July 23).

BIOCHEMIST to assist in researches in the biochemistry of lactation—The Secretary, National Institute for Research in Dairying, Shinfield, Reading, Berks (July 23).

JUNIOR FELLOW or ASSISTANT LECTURER or LECTURER IN AERONAUTICAL ENGINEERING—The Secretary and Registrar, The University, Bristol (July 23).

STATISTICIANS in the East African High Commission—The Director of Recruitment, Colonial Office, Sanctuary Buildings, Great Smith Street, London, S.W.1 (July 23).

ASSISTANT EXPERIMENTAL OFFICER in the Entomological Laboratory, to assist in recording and compiling research data on fruit pests—The Secretary, East Malling Research Station, East Malling, Maidstone, Kent (July 26).

PRINCIPAL OF THE DACCA ENGINEERING COLLEGE—The Office of the High Commissioner for Pakistan, 36 Lowndes Square, London, S.W.1 (July 27).

SENIOR INSTRUCTORS (2, one in Civil and the other in Military Engineering), at the School of Military Engineering at Sialkot—The Office of the High Commissioner for Pakistan, 36 Lowndes Square, London, S.W.1 (July 27).

ASSISTANT IN RESEARCH in electron microscopy—The Secretary, Department of Physics, Cavendish Laboratory, Free School Lane, Cambridge (July 27).

RESEARCH ASSISTANT IN COMPUTATION in the Department of Mathematics, and a LECTURER or ASSISTANT LECTURER in APPLIED MATHEMATICS—The Registrar, The University, Sheffield (July 30).

LECTURER (A) IN GEOGRAPHY at Farouk I University, Alexandria—The Director, Egyptian Education Bureau, 4 Chesterfield Gardens, London, W.1 (July 30).

LECTURER IN THE DEPARTMENT OF AGRICULTURAL BOTANY—The Secretary and Registrar, University College of North Wales, Bangor (July 30).

MECHANICAL ENGINEERS (Senior Experimental Officer or Experimental Officer grade, unestablished) at a Ministry of Supply Research and Development Establishment in the south of England, to run experimental workshop engaged in modification of earth-moving equipment and maintenance of all types of such plant—The Ministry of Labour and National Service, Technical and Scientific Register (K), York House, Kingsway, London, W.C.2, quoting C.387/49A (July 30).

LECTURER IN POULTRY HUSBANDRY at the Shropshire Farm Institute, Walford, near Baschurch—The Secretary for Education, County Buildings, Shrewsbury (July 30).

LECTURER IN BIOCHEMISTRY—The Secretary, The University, Aberdeen (July 31).

ASSISTANTS (4) IN PHILOSOPHY (one in the Department of Logic and three in the Department of Moral Philosophy)—The Secretary, The University, Edinburgh (July 31).

READER IN PHYSIOLOGY in the Medical School of King's College—The Registrar, University Office, 23 St. Thomas's Street, Newcastle-upon-Tyne (August 1).

LECTURER IN HUMAN PHYSIOLOGY, and a LECTURER IN EXPERIMENTAL PHYSIOLOGY—The Registrar, The University, Manchester 13 (August 5).

DEMONSTRATOR IN AGRICULTURAL CHEMISTRY—The Registrar, The University, Leeds 2 (August 6).

RESEARCH OFFICER IN THE DIVISION OF INDUSTRIAL CHEMISTRY, Commonwealth Scientific and Industrial Research Organisation, to carry out research in the field of vacuum ultra-violet spectroscopy—The Chief Scientific Liaison Officer, Australian Scientific Research Liaison Office, Africa House, Kingsway, London, W.C.2, quoting No. 2294 (August 6).

SENIOR LECTURER or LECTURER IN PSYCHOLOGY at University College, Canberra, Australia—The Secretary, Association of Universities of the British Commonwealth, 5 Gordon Square, London, W.C.1 (August 15).

ASSISTANT LECTURER IN THE DEPARTMENT OF ELECTRICAL ENGINEERING, on the heavy current side—The Secretary, University College, Gower Street, London, W.C.1 (August 15).

CHAIR OF PHYSICS at the University of Sydney—The Secretary, Association of Universities of the British Commonwealth, 5 Gordon Square, London, W.C.1 (Sydney, August 31).

YOUNG MAN (with an honours degree in chemistry) for microbiological research—The Secretary, Wright-Fleming Institute of Microbiology, St. Mary's Hospital Medical School, Paddington, London, W.2.

ROCHE FELLOWSHIP for research into rheumatism—The Medical Secretary, Empire Rheumatism Council, Tavistock House (North), Tavistock Square, London, W.C.1.

DRAUGHTSMAN IN THE DEPARTMENT OF GEOGRAPHY—The Secretary, University College, Gower Street, London, W.C.1, quoting Geography/2.

ASSISTANT PROFESSOR OF PHARMACOLOGY—The Dean, Dalhousie Medical School, Halifax, Nova Scotia, Canada.

DEMONSTRATOR IN ZOOLOGY, and a GRADUATE (woman) IN CHEMISTRY as trainee in the micro-analysis of organic compounds—The Registrar, The University, Nottingham.

ASSISTANT IN THE APPLIED SCIENCE DEPARTMENT—The Clerk to the Governors, Wolverhampton and Staffordshire Technical College, Wulfruna Street, Wolverhampton.

GRADUATE ASSISTANT IN THE CHEMISTRY DEPARTMENT—The Principal, North Staffordshire Technical College, Stoke-on-Trent.

CHAIR OF AIRCRAFT PROPULSION—The Registrar, College of Aeronautics, Cranfield, Bletchley, Bucks.

SENIOR PLANT PATHOLOGIST, a SENIOR PLANT BREEDER, a SOIL CHEMIST, an AGRONOMIST, a JUNIOR PATHOLOGIST, a JUNIOR PLANT BREEDER, a PLANT PHYSIOLOGIST, an ENTOMOLOGIST, and an INSECTICIDE CHEMIST, in the West African Research Institute, Accra, Gold Coast—The Director of Recruitment, Colonial Office, Westminster, London, S.W.1.

SOIL TECHNOLOGIST by the Government of Iraq for the Directorate-General of Agriculture—The Crown Agents for the Colonies, 4 Millbank, London, S.W.1, quoting M.N.14628/3F.

LECTURER IN ZOOLOGY—The Dean of Arts and Science, University of Alberta, Edmonton, Alta., Canada.

SCIENTISTS (with chemical and/or botanical qualifications) for an investigation into the uptake of nuclear fission products by marine algae—The Secretary, Scottish Seaweed Research Association, 28 Rutland Street, Edinburgh 1.

SCIENTIFIC ASSISTANT—The Commonwealth Bureau of Animal Health, Veterinary Laboratory, New Haw, Weybridge.

ELECTRICAL AND MECHANICAL ENGINEER to the Equatoria Projects Board, Anglo-Egyptian Sudan—The Sudan Agent in London, Wellington House, Buckingham Gate, London, S.W.1, endorsed 'Equatoria'.

ELECTRICAL ENGINEER in the Public Utilities Department, Gambia—The Director of Recruitment, Colonial Office, Sanctuary Buildings, Great Smith Street, London, S.W.1, quoting No. 27326/26.

CHIEF MECHANICAL AND ELECTRICAL ENGINEER by the Directorate-General of Municipalities, Ministry of Interior, Government of Iraq—The Crown Agents for the Colonies, 4 Millbank, London, S.W.1, quoting M.N.24754.

LECTURER IN MATHEMATICS, to teach Intermediate and Final Degree students—The Clerk to the Governors, Battersea Polytechnic, Battersea, London, S.W.11.